Children’s Representations of Mental Illness

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ABSTRACT

Although there is a considerable literature investigating adult conceptions of mental illness, in comparison relatively little research has explored children’s knowledge and understanding of mental health problems. The studies conducted for this thesis adopted a novel conceptual framework, that of Leventhal, and a novel theoretical stance, the naïve theory approach, for the exploration of children’s representations of mental illness. Study 1 took the form of a series of focus groups in order to establish an appropriate terminology for investigating children’s knowledge and understanding of mental illness, and indicated that children had different understandings of the different terms utilised. These findings informed Study 2, which revealed developmental trends in children’s conceptions of the causes, consequences, curability and timeline of mental health problems, although children’s conceptions were not found to be associated with experience of mental illness. Studies 3 and 4 further explored these age differences by investigating whether children construct naïve theories of mental illness. Children were found to differentiate the mental illness domain and constructed coherent causal-explanatory understandings, which became more differentiated and accurate with age. Study 4 also revealed that verbal IQ appears not to have a substantial influence on children’s conceptions of mental illness. Study 5 investigated the emotional aspects of children’s conceptions, which appeared to be dependent upon gender, the type of behaviour an individual was perceived to display, and mental illness diagnosis. While girls were found to show more empathy towards the principal characters compared to boys, overall, children were more positive towards the mentally ill than previous research has reported. It is concluded that both the Leventhal model and the naïve theory approach provide useful frameworks for the investigation of children’s thinking about mental illness. Children appear to develop an understanding of, and emotional responses to, mental illness during the primary school years. More research is needed to ascertain the relative contributions of the child’s general cognitive ability and information acquired from the social environment.
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CHAPTER 1

Introduction

The motivation for the choice of topic for this thesis – children’s representations of mental illness – arose from an interest in mental illness and stigma. Stigmatisation can arise from stereotypes. A stereotype can be seen as an efficient type of knowledge representing a particular social group (Corrigan, Edwards, Green, Diwan & Penn, 2001), such as the mentally ill. Stereotypes are social because they are collectively agreed and represent notions about a group of people, for example ‘most people who have mental health problems are dangerous’. Stereotypes are an efficient type of knowledge because they are quickly and easily accessible, so that people can generate impressions and expectations about individuals from a particular social group (Hamilton & Sherman, 1994). For example, ‘Stephen is mentally ill so it is likely that he is dangerous’. Stigma towards a group of individuals may arise where people agree with a stereotype and develop an emotional reaction, demonstrating prejudice: ‘I’m scared of the mentally ill because they are all dangerous’. Where people act on the prejudice, they demonstrate discrimination: ‘I wouldn’t be friends with someone who is mentally ill because they are dangerous’.

There is a substantial body of research that has investigated attitudes and stereotypes towards mental illness (e.g., Appleby & Wessely, 1988; Borinstein, 1992; Hall, Brockington, Levings & Murphy, 1993; Levey & Howells, 1994; Link & Cullen, 1986; Nunally, 1961; Rabkin, 1974). This research has established that adults hold negative and stereotyped views of the mentally ill. These stereotyped beliefs have led people to view individuals who suffer from mental illness as dangerous, dirty and unpredictable.

Research has also shown that people wish to keep a distance between themselves and the mentally ill and are unwilling to have them as neighbours or co-workers if their mental health problems become known (Clements, 1993; Farina, 1982; Fink & Tasman, 1992; Frazer, 1994; Nunally, 1961; Rabkin, 1974). Furthermore,
individuals with mental health problems themselves report avoidance, rejection and discrimination if their mental illness is revealed (Wahl, 1999).

'A few days after the first resident (of the mental health facility) moved in, she was in the garden with her project worker when one of the neighbours came to the fence and started shouting abusively about her being allowed to live there.' (Local Mind Association: in Repper, Sayce, Strong, Willmot & Haines, 1997, p3).

'It was last summer, a short time before users were due to go in. The van outside was plastered with slogans like “schizophrenics go home”, the fence and house was daubed with paint and abuse' (General Manger, Bromley User Group: in Repper et al., 1997, p.3).

Research into attitudes and conceptions of mental health problems is critically important as, since the 1960s there has been a deinstitutionalisation of psychiatric patients, which has lead to an increase in the number of individuals with mental health problems living within the community. In fact, it is now reported that one in four people will suffer from a mental health problem at some time during their lives (Royal College of Psychiatrists, 2000). Understanding the public’s response towards those who suffer from mental disorder, therefore, may help to reduce the stigma attached to the mental illness label and ease the re-integration of these individuals into society.

In fact, there have been a number of campaigns aiming to reduce the stigma attached to having a mental illness diagnosis. For example, Mind, a mental health charity, ran a two-year campaign entitled ‘Respect: time to end discrimination on mental health grounds’ (1997-1999). Mind campaigned for the rights of the mentally ill in the community, including quality mental health services. The charity advised the government, health and local authorities about good practice and service development in mental health and community care. Similarly, The Royal College of Psychiatrists ran a five-year anti-stigma campaign (1998-2003). This campaign
aimed to increase public and professional knowledge and understanding of different types of mental illness, with a view to reducing the stigma and discrimination against people suffering with depression, anxiety, schizophrenia, Alzheimer’s disease and dementia, alcohol and other drug misuse and anorexia and bulimia. In order to do so, four specific groups were targeted: the general public, children and young adults, employers, and health care professionals. As part of the campaign, the Royal College of Psychiatrists produced posters, leaflets, a two-minute cinema film entitled ‘1 in 4’ and raised funding for educational programmes and research.

Few researchers concerned with stigma and mental illness, if any, hold the belief that these negative and stereotyped views emerge fully developed in adulthood. It seems more likely that these ideas and attitudes establish their roots in childhood and develop gradually over a long period of time. Those who consider strategies to combat the stigma attached to having a mental illness diagnosis have come to believe that efforts to reduce stigmatisation may be more usefully directed towards children, with the idea of shaping attitudes before they become well-formed, rather than trying to challenge and modify already firmly entrenched views (Wahl, 2002). Furthermore, figures from the Office for National Statistics (Meltzer, Gatwood, Goodman & Ford, 2000) have shown that almost one in ten 5- to 15-year-olds suffer from serious emotional or behavioural problems. These include many different types of disorder, such as anxiety disorders, depression, conduct disorders and hyperkinetic disorder. Similarly, figures from the United States estimate that 12% of children under the age of 18 years suffer from a serious mental disorder, such as depression, anxiety, attention deficit, hyperactive or antisocial behaviours or developmental impairments (Hamburg, 1989; Office of Technology Assessment, 1986). These types of problems can lead to problems in thinking, learning, forming social attachments, or effective communication with others. The presence of these children with emotional and behavioural problems in the classroom brings the concept of mental illness to mind for those children in contact with such individuals. This raises important educational and psychological questions. For example, what do healthy children know and understand about mental illness and what effect does this have on children’s attitudes towards this group of individuals? It is perhaps surprising
therefore, that in comparison to the large amount of research that has been conducted into adult attitudes towards mental illness, a similar amount of research attention has not been given to children’s views of mental disorder. Furthermore, the research that has been conducted has suffered from methodological problems (see Chapter 2). More research is therefore needed into what children know and understand about mental illness, including the attitudes that children hold towards this group of people. This increased knowledge about children’s thinking within this domain may assist in combating the negative and rejecting response by society experienced by the mentally ill.

Chapter 2 therefore reviews the literature, setting out a number of research questions that the present research addresses. Following this, and with this background in mind, the research comprising this thesis first took an exploratory stance by conducting a series of focus groups, in order to tackle the issue of language (Chapter 3). This study, importantly, established an appropriate language relating to mental health problems, to utilise with children of primary school age. The results of the focus groups informed the design of a second exploratory study (Chapter 4) that investigated what children know and understand about the causes, consequences, curability and timeline of different types of mental illness. This study (Study 2) established an appropriate methodology – vignettes and a card selection task – to utilise with children, and also highlighted that children of primary school age do have some knowledge and understanding of different types of mental illness, and that this knowledge and understanding becomes more sophisticated with age.

The findings of Study 2 led onto two studies (Chapters 5 and 6), in which children’s conceptions of mental illness were investigated from a naïve theory approach. This approach provided a much tighter theoretical structure for the research, and also allowed a more detailed insight into children’s thinking about mental illness. For example, a comparison of children’s thinking about physical illness was compared to their thinking about mental illness in order to examine whether children reason about mental illness as a distinct domain. Furthermore, the studies explored whether children construct coherent, causal-explanatory theories about the causes,
consequences, curability and timeline of mental illness. Children demonstrated that they do hold naïve theories of mental illness, and that these theories become more differentiated and sophisticated with age.

The final study conducted for this thesis (Chapter 7), took a very different stance to the previous studies; it investigated children’s emotional responses to mental illness rather than their knowledge and understanding of mental health problems. As stated above, it is the emotional response to stereotypes that can lead to discrimination. This study therefore examined children’s responses to questions about social distance, affect, empathy, behavioural functioning and adjectives that describe individuals with mental health problems. Findings indicated that gender plays a more important part in children’s emotional responses to mental illness compared to age. Children’s responses also differed according to mental illness diagnosis.

The concluding chapter (Chapter 8) draws together the novel findings of the research conducted for this thesis in relation to existing work. The chapter revisits the research questions set out in Chapter 2, and considers methodological and theoretical implications of the present findings. The chapter also includes a discussion of the limitations of the present studies and directions for future research, and concludes by highlighting how the studies conducted for this thesis build upon and extend existing research.

Before continuing, it is important to acknowledge the contested nature of terms used to refer to mental health problems. The identification and categorisation of individuals with mental health problems may be seen as dependent upon, and constructed by, language and culture. With respect to language, the terminology that we use to describe mental illness has changed over time; words can have different meanings in different historical contexts (Danziger, 1990; Smith, 1988). Furthermore, texts on mental illness have moved from the use of terms such as ‘sane’ and ‘insane’ to using terminology such as ‘normal’ and ‘abnormal’; and we continue to develop and refine the classification systems used in the Western world, for example the International Classification of Diseases (ICD) (World Health

With reference to culture, Arthur Kleinman produced an influential paper, in which he challenged the idea that depressive reactions were identical in different cultures (Kleinman, 1977). In his paper, he declared that a ‘new cross-cultural psychiatry’ had arrived, and that it was a ‘category fallacy’ to assume that Western diagnostic categories should apply in non-Western societies; patterns of behaviour that are recognised as abnormal in Western society are not necessarily labelled as abnormal and undesirable in non-Western societies (Littlewood, 1986). For example, in the Western world making statements such as ‘I’ve been possessed by a spirit’, or ‘I can hear voices of my ancestors speaking to me’, may lead a person to be diagnosed as psychotic, likely to be diagnosed with schizophrenia. However, in many parts of the world, such statements would not be considered evidence of mental illness by their communities, as it is not uncommon for people to admit to being possessed by spirits or having dreams or visions through which an important message is conveyed to them.

There is also variation in the diagnostic criteria used to diagnose different mental illnesses by psychiatrists in different countries within the Western world. For example, differences in the criteria used to diagnose schizophrenia have been found between British and French psychiatrists, whereby the diagnostic categories ‘chronic delusional states’ and ‘transitory delusional states’ in French psychiatry are different to those used by British psychiatrists.

It is therefore important to establish the meanings of the terms used within this thesis. As you read on, you will find the terms ‘mental illness’, ‘mental disorder’ and ‘mental health problem’. These terms, within the context of this thesis, are used interchangeably, to refer to individuals who show abnormal psychology or behaviour that is severe enough to warrant psychiatric or psychological intervention.
CHAPTER 2

Review of the Relevant Literature

2.1 Introduction

This chapter presents existing literature that is relevant to children’s knowledge and understanding of mental illness. The review for the purpose of the present work draws upon a broad literature. This encompasses research that has been conducted into children’s knowledge and understanding of physical health and illness from various theoretical standpoints, in addition to research that has focused specifically on children’s thinking about mental illness, in order to situate the current research within its theoretical and empirical context.

The review begins by discussing the stage approach to cognitive development and research that has been conducted within it. The next section puts forward a number of criticisms of the stage approach that have arisen. As a result of such criticism, more recent approaches to cognitive development, domain-specific approaches, are then considered, in particular the naïve theory approach (Wellman & Gelman, 1992, 1998), with an emphasis on children’s naïve theories of biology and how a naïve theory of biology is acquired. The review then turns to research that has investigated children’s knowledge and understanding of physical illness, followed by a section considering an illness framework (Lau & Hartman, 1983; Leventhal, Meyer & Nerenz, 1980; Leventhal, Nerenz & Steele, 1984) that may prove useful in understanding children’s thinking about mental illness. Finally, there will be a review of the research that has examined adult thinking about mental illness followed by a discussion of the empirical work that has investigated children’s conceptions of mental illness, including a discussion of methodological problems of the existing work. The review concludes with an overview of the present research, which situates it within this existing body of previous research, followed by a set of research questions.
2.2 The Stage Approach to Cognitive Development

A considerable amount of work has utilised Piaget's developmental framework in order to investigate children's understanding of the cause of illness. This framework postulates that children's beliefs about illness are stage-dependent. Therefore, how a child comprehends experiences is determined by the characteristics and limitations of thought at each stage of development (Flavell, 1963; Piaget & Inhelder, 1969). As a result, the concepts of health and illness that children hold should relate to the findings of Piaget on the ontogenesis of causal reasoning, and the explanation of illness that a child gives should therefore reflect his/her current cognitive developmental stage. Research has indeed found that children's understanding is related to their level of cognitive development (Rubovits & Siegel, 1994).

Piaget describes three stages of cognitive development in childhood: the preoperational stage (children aged 2 to 6 years), the concrete operational stage (children aged between 7 and 10 years) and the formal operational stage (children of 11 years of age and older). Bibace and Walsh (1981) and Perrin and Gerrity (1981) carried out studies with a view to describing the development of children's conceptions of illness as their thinking shifts from preoperational through to formal operational stages. Children were therefore interviewed and their responses coded according to the three stages proposed by Piaget. For example, Bibace and Walsh (1981) investigated 4-year-olds, 7-year-olds and 11-year-olds. They found that from preoperational to the later stages of cognitive development, children's illness conceptions develop from more global to more logical and differentiated ideas. Potter and Roberts (1984) found similar developmental changes; preoperational children benefited more from global, non-specific explanations of illness and children at the concrete operational stage benefited from more detailed information about illnesses.

Furthermore, Bibace and Walsh (1981) extended the Piagetian framework and identified two subtypes of explanations within each stage of cognitive development; phenomenism and contagion within the preoperational stage, contamination and
internalisation within the concrete operational stage, and physiological and psycho-
physiological subtypes within the formal operational stage. Thus they proposed
children’s thinking about illness develops through six stages of explanation.

First within the preoperational stage, the most developmentally immature
explanation of illness was termed ‘phenomenism’, where causal phenomena are
external and concrete. Children at this stage lack the ability to explain the
mechanisms behind the causal phenomena. An additional explanatory style found
within the preoperational stage is the subtype contagion, and this is the most
common causal explanation provided by children at this stage. Here the belief held
by children is that illnesses can be transmitted from people or objects that are close
but not necessarily touching the person who becomes ill. For example, Bibace and
Walsh (1981) found that children at this stage thought that colds could be transmitted
by magic, from trees or from God. Thus children in the preoperational stage tend to
describe illness transmission in magical terms (Bibace & Walsh, 1980; Neuhauser,
Hines & Steward, 1978; Whitt, Dykstra & Taylor, 1979). Furthermore, illness
causation is often described as a form of punishment, with children holding
immanent justice beliefs about the cause of illness. Some research has also shown
that children in the contagion subcategory of the preoperational stage are unable to
differentiate between contagious and non-contagious illnesses. Siegal (1988)
reported that children believed that both toothache and colds were transmitted by
contact with a sick person. Overall, children at this stage appear to make
considerable investment in the contagion explanation.

With respect to the concrete operational stage, Bibace and Walsh (1981) first identify
contamination as a subcategory. At this stage of cognitive development, they
propose that children are now able to clearly distinguish between what is internal and
what is external to the self. Children at this stage can distinguish between cause and
mechanics; therefore, they can recognise that causal phenomena can be objects or
people or even an action external to the individual but harmful to the body. They
will also recognise that infection can occur through contact with the person or object
or through engagement with the harmful action. Children’s understanding however,
will lack any notion of how the human body participates in, or responds, to these events (Sayer, Willett & Perrin, 1993). Older children within the concrete operational stage may offer a more mature explanation, by using the second subcategory, that of internalisation. These children now understand that illness is located within the body, even though the cause may be external, with children tending to produce explanations based on processes such as swallowing or inhaling (Bibace & Walsh, 1980).

Finally, children in the formal operational stage of cognitive development show the greatest differentiation between the internal and external worlds. For children in this stage, the source of illness is located within the body, while an external agent is perceived as the cause. For example, Brewster (1982) found that children in the formal operational stage offered multiple causal explanations, integrating such processes as infection and the body’s immune deficiency. Within this stage Bibace and Walsh (1981) identify two subcategories, physiological and psycho-physiological. A physiological causal explanation within this stage is characterised by a malfunctioning or non-functioning of an internal organ or internal process. A psycho-physiological explanation would also recognise an alternative psychological cause of the illness. For example, a child in the formal operational stage providing a psycho-physiological causal explanation might recognise that heart disease may be due to a malfunction of the heart and/or the intensive physical work undertaken by an individual, but might also result from the individual’s exposure to extreme stress (Eiser, 1989). In essence, children at this stage are aware of the complex interaction between the physiological, such as bodily functions, and the psychological or how an individual feels, and that both will contribute to an individual’s health status (Bibace & Walsh, 1981).

Therefore, according to the stage approach, children’s understanding of the causality of illness progresses with development (Sayer et al., 1993). Children’s understanding of the causality of illness begins with a child being unable to verbalise a cause (preoperational thought; children of 2 to 6 years of age) and progresses to the child being able to verbalise general, external causes (concrete operational thought;
children of 7 to 10 years of age) and finally advances with the child being able to verbalise both physiological and psychological reasons (formal operational thought; children of 11 years and above) (Bibace & Walsh, 1981). Research into children’s understanding of the causality of pain has revealed a similar developmental progression to their understanding of illness (Harbeck & Peterson, 1992). Furthermore, Berry, Hayford, Ross, Pachman and Lavigne (1993) carried out a study in which they interviewed children between the ages of 6 and 17 with juvenile rheumatoid arthritis about their condition and found that the children’s understanding of their illness also followed this developmental progression. They found that a greater number of older children and adolescents demonstrated an understanding of juvenile rheumatoid arthritis at the formal operational stage compared to younger children. Furthermore, as children progressed through the stages of cognitive development, their understanding became increasingly accurate.

2.3 Criticisms of the Stage Approach

Thus, much research that has investigated children’s conceptions of illness has focused on the role of the general level of cognitive development of the child as a consequence of the belief that the development of children’s conceptions of illness was determined by cognitive structure (Rubovits & Siegel, 1994). However, the stage approach to cognitive development has drawn criticism in recent years. In particular, its emphasis on a systematic and universal developmental progression in children’s thinking has neglected individual differences. The focus on domain-general knowledge as opposed to domain-specific knowledge fails to acknowledge any individual gains in understanding, which might emanate from particular experiences in a child’s life (Chi & Ceci, 1987). Social, cultural and contextual factors are deemed only to have a secondary significance. Therefore, research that has adopted the universal cognitive approach to children’s conceptions of illness has also been criticised for neglecting individual differences in children’s understanding and reasoning about medical and physiological phenomena (Rubovits & Siegel, 1994). This approach does not allow for other explanations of age-trends in
children's understanding of illness, such as personal experience, educational input, or socio-economic factors.

Further criticism of the Piagetian approach has arisen from methodological limitations of studies investigating children's conceptions of illness within this framework, which have led to a difficulty in their interpretation. First, within the domain of knowledge about illness, there are no reliable criteria by which the type of operational thought can be categorised (Hergenrather & Rabinowitz, 1991), and as a result, similar responses given by children have been characterised as different operational stages by different researchers. For example, Kister and Patterson (1980) categorise the belief that illnesses are the result of infection as evidence of concrete operational thought, whereas Nagy (1951) categorised this as preoperational thinking. This highlights the subjective nature of the interpretation and categorisation of operational thinking within the Piagetian approach.

A further methodological problem concerns the use of standard Piagetian tasks (conservation, transformations or perspective taking tasks) as a measure of children's level of operational thinking. For example, Harbeck and Peterson (1992) investigated children's understanding of specific pains, in order to relate this to their level of operational thinking, measuring the children's performance on physical conservation-identity tasks. However, studies have failed to show inter-correlations between standard Piagetian tasks thus suggesting that these tasks may not provide a reliable measure of cognitive development (Gelman & Baillargeon, 1983). As a result, the relationship between how a child performs on a standard Piagetian task and the child's conceptions of illness are difficult to interpret in relation to Piaget's theory.

Additional difficulties arise from actual data collection methods. Much of the research into children's understanding of health and illness is based on interview data. Minimal attention has been paid to the psychometric properties of the interview schedules used, and this raises questions about their reliability and validity. The use of interviews also means that, when a child shows a linguistic inability, this
may be misinterpreted as a lack of conceptual understanding. As a result, children’s knowledge may be underestimated. For example, one study has reported that older children’s ability to verbally express their knowledge about illness shows more sophisticated thinking; the older children had given an increased number of concrete operational explanations (Dimigen & Ferguson, 1993). Although this may be true, it is also possible that younger children may also have this knowledge but lack the ability to fully articulate their understanding (Karmiloff-Smith, 1988). Alternatively, young children may not be able to consciously access their knowledge about illness from memory (Kail, 1990). Furthermore, studies into children’s understanding of health and illness have used repetitive questioning, which may lead the child to change their response owing to them interpreting the repetition of a question by the interviewer to be a consequence of their inability to provide a correct response the first time the question was asked (Rose & Blank, 1974; Siegal, 2003).

2.4 Domain-Specific Approaches to Cognitive Development

The stage approach to cognitive development takes a domain-general approach, and as already discussed, has received some criticism. A large body of research, however, can now be found which addresses cognitive development from a domain-specific standpoint, which instead posits that cognition differs substantially in different domains. Within the domain-specific approach, there are three main perspectives: modular theories, expertise theories and theory theories. Modular theories assume that children have the same core conceptions as adults and organise knowledge in the same way. Expertise theories, on the other hand, assume that children start out with little or no knowledge of the world around them, and as they develop, they acquire knowledge from experience and practice. Theory theories assume that children actively construct their own theories of how the world around them functions and operates, which can be very different to that of adults.

Researchers argue that our everyday understanding of life, death, reproduction, illness, inheritance etc. derives from knowledge and understanding within a biological domain. This literature review will therefore focus on the research that
has been conducted into children’s knowledge and understanding within the domain of biology because of its relevance to the present research, as illness as a concept has significant connections to theories of biology.

2.4.1 Modular accounts

Modular theorists argue that the mind is modular; that it has different systems, which are separate and have their own properties (Chomsky, 1988). Some modular theorists propose that children have an innate biological module (Wellman & Gelman, 1998) and propose that the emergence of a naïve theory of biology is linked to innate predispositions, thus representing an early autonomous competency (Gelman & Hirschfeld, 1999; Keil, 1992; Kelemen, 1998). For example, Atran (1990, 1994) investigated people’s organisation of categories of plants and animals and found similarities between people from different cultures, concluding that biological reasoning is distinct from other kinds of reasoning, and the result of an innate module.

The modular approach provides an account of why children acquire expertise rapidly and early on in life. Their competency results from the presence of the innate conceptual modules, which enable the child to attend to and represent these phenomena in special ways. In addition, modular accounts provide an explanation as to why the knowledge that children have within this domain cannot be modified. This is because modules convert input into particular representations. Modular theories therefore have two strengths; they provide an explanation for both early knowledge and for developmental continuity. On the other hand, in terms of the mechanisms that are involved in developmental change, modular accounts tend to focus on neurological development, explaining conceptual change by a particular module becoming active. This neglects the influence of other factors such as additional information or reorganisation of the concepts themselves. Modular accounts do not allow for changes in the concepts, only in the development of existing notions. Therefore it is problematic for this account to explain how new or different conceptions develop.
2.4.2 Expertise accounts

Expertise theorists claim that expertise separates domains, and that an ordinary person can look extraordinary with enough practice at a particular task. Furthermore, a person’s expert ability within a domain is specific to that domain, for example, an individual who demonstrates expertise on the chessboard may show only an ordinary ability outside this skill domain, and expertise facilitates further learning and attention to new domain-related information. An expertise approach does not entertain the idea of innate modules or constraints; rather the skill domain is moulded by acquired expertise.

Within the biological domain, expertise theorists hypothesise that children’s biological knowledge increases as they get older because people teach them. Empirical work to evaluate this account has therefore looked for links between the information that is available in the environment and the knowledge that the child holds. In fact, the studies that have been conducted have shown that parents provide incomplete information for children when discussing biological phenomena and their causal properties (Gelman, Coley, Rosengren, Hartman & Pappas, 1995). Therefore, the information provided by parents, although useful, cannot solely be responsible for the biological beliefs that children hold. In addition, these biological beliefs tend to contain untaught or self-constructed errors. Furthermore, the expertise stance provides no account for why young children acquire some fields of expertise more easily than others. The expertise viewpoint would argue that this is because the domain contains phenomena that the children most often come across, that their parents most often talk about or that they are most interested in (Wellman & Gelman, 1998), in which case, an explanation as to why adults have these preferences or interests is required.

2.4.3 Theory accounts

Theory theorists claim that children possess thoughts and knowledge that can be different from adults, and that children’s knowledge is organised into coherent, causal-explanatory systems (e.g., Brewer & Samarapungaran, 1991; Carey, 1985; Wellman, 1990). They see theories as systems of knowledge that are coherent and
that organise and structure thinking about everyday phenomena (Wellman & Gelman, 1998). These everyday theories are resistant but are grounded in evidence, and so are subject to change. Theory theorists postulate that children actively construct their own naïve theories, which represent a child’s earliest attempts to reason about a set of phenomena. Children use these naïve theories in order to explain, interpret and make predictions about the world around them. In doing so, children may encounter anomalies, which, if persistent, may cause conceptual reorganisation and accommodation. This in turn may lead to revised theories, or even to the generation of new, qualitatively different theories. Theory accounts view learning as constrained and shaped by prior systems of concepts, which begin with innately evolved representations for understanding the world. However, theory accounts differ from modular accounts whereby initial conceptions are revisable via experience and theory change rather than brain maturation alone. This means that later theories can differ greatly from earlier ones. Furthermore, the theory approach differs from that of domain-general theorists such as Piaget, whereby children’s reasoning is domain-specific; phenomena in different domains therefore require different sorts of reasoning.

Thus, the theory approach proposes that, in order for a child to make predictions about phenomena within a specific domain, the child should have a knowledge of ontological distinctions, coherence, and causal-explanatory understandings (Wellman & Gelman, 1998). Ontology denotes the types of fundamental entities existing within a domain. The examination of whether children make ontological distinctions between domains reveals whether children recognise that different domains have different features distinguishing them. Coherence reveals that children’s beliefs about the phenomena within a domain are logical, rational, and cohere into connected networks of reasoning. Finally, causal-explanatory understandings demonstrate that children utilise distinctive causal-explanatory principals when reasoning about phenomena within a particular domain.

Some theory theorists have postulated that children’s naïve theory of biology is an offshoot of some other theory. For example, Carey (1985) proposed that children’s
naïve theory of biology emerges from their naïve theory of psychology, while Au and Romo (1999) proposed that children’s naïve theory of biology emerges from a naïve theory of mechanics. The theory approach also places some emphasis on the role of experience in theory acquisition. Theory accounts of children’s knowledge and thinking within the biological domain have focused on the content of children’s beliefs, looking at the distinction between living and non-living things and biological processes such as growth and reproduction (e.g., Carey, 1985). Theory accounts propose both early conceptual structures, similar to modular accounts, and also allow for change, like expertise accounts, although this approach should not be seen as positioned between modules and expertise. For example, conceptual change for the theory approach occurs through conceptual reorganisation and accommodation, whereas expertise accounts propose domain-general learning processes and modular accounts postulate that concepts emerge innately.

Much research within each of these viewpoints has addressed the descriptive question of ‘what happens?’ Overall, research into children’s thinking about biology has shown that by the age of 4 to 5 years children are able to conceptualise a biological domain (Gelman & Wellman, 1991; Keil, 1989; Siegal & Robinson, 1987). They distinguish between living and non-living things, and understand the importance of growth, healing, inheritance, germs, and movement as phenomena, which occur specifically only to biological entities.

2.5 The Acquisition of a Naïve Theory of Biology

Carey (1985) has conducted a number of studies into the acquisition of biological knowledge in children between the ages of 4 and 10. She examined their conception of living things. Carey’s research focused on how the child’s knowledge and thinking differs from that of an adult. She proposes that the theoretical understanding that children have of living things is psychological and only later develops into a biological understanding. Carey provided evidence for her belief that young children lack early knowledge about biological processes, and use a psychological framework for interpretation instead. Furthermore, Carey believes that
children reason about biological phenomena using humans as the prototypical biological entity. For example, young children define the biological concept of 'animal' according to actions, behaviours and intentions. They also attempt to explain the function of the human body in these terms. Thus, Carey (1985) proposes that young children have coherent theories of biology and understand biological functions and processes in terms of psychological principles. Their theories then change qualitatively from psychological to biological ones as they acquire biological knowledge. Carey (1985) initially proposed that this occurred at age 10. However since then (Carey, 1999), in response to more recent research (Inagaki & Hatano, 1987, 1993, 2002; Keil, 1989; Rosengren, Gelman, Kalish & McCormick, 1991; Springer, 1992; Springer & Keil, 1989), she has conceded that the age at which children construct their first theory of biology is, in fact, younger at around age 6 or 7.

An alternative perspective (Keil, 1989) proposes that children do have biological knowledge from an early age but that this knowledge becomes increasingly differentiated and theoretically organised with age. Biological knowledge develops through theory elaboration and differentiation and not through theory replacement (Rosser, 1994). Young children are believed to have an elementary understanding about biological systems and the way they work. For example, children intuitively know that animals have special properties, and that these properties differentiate them from other entities and characterise their biological functioning. Children at 5 years of age allowed changes within ontological categories but not changes across ontological boundaries; they would accept that a horse could be turned into a zebra but would not accept that a mouse could be turned into moss (Keil, 1989). Thus they demonstrated an early understanding of ontological distinctions.

Much of Keil's work indicates that children do have naïve theories of biology, which are different from adult theories. He argues that children's naïve biological theories cannot be reduced to an intuitive theory of psychology. However Carey (1985) and Keil (1989) both emphasise the central role of intuitive theories in the organisation of
knowledge and agree that the acquisition of domain-specific knowledge leads to developmental change.

Inagaki and Hatano (1993) have also conducted work into the acquisition of naïve theories of biology and believe that children have naïve theories of biology by 6 years of age. Through the investigation of the concept of Japanese Vitalism they have extended the work of Carey (1985) and Keil (1989) by an examination of the influence of individual differences and experience in the formation of theories about biological phenomena. For example, Japanese children have been found to be more likely to regard inanimate objects or plants as alive and having the properties of living things than children from Israel or the United States. These results are believed to be the consequence of cultural differences, as within the Japanese culture, plants are believed to resemble human beings and inanimate objects are construed as having minds (Hatano & Inagaki, 1994). Another study, carried out by Springer (1999), also supports the view that individual differences and experience play a part in the formation of naïve theories within the biological domain. Springer (1999) investigated reasoning about kinship, comparing the responses of children who had been adopted, with those of children who had been raised by their birth parents. Adopted children had a more coherent understanding of kinship than non-adopted children, thus indicating that children's knowledge and understanding of biology may be influenced by the context within which it is formed. For example, it is more likely that the issue of kinship would arise for adopted children in order to explain their biological roots.

Overall, researchers have shown that children do recognise a biological domain that is distinct by the age of 4 to 5 years (Gelman & Wellman, 1991; Keil, 1989; Siegal & Robinson, 1987). However, it is also possible that children's understanding of these biological phenomena may yet be uncovered at even earlier ages. As to the actual method of attainment, there are various proposed mechanisms. According to some theorists, a naïve theory of biology emerges through such processes as the acquisition and reorganisation of biological knowledge (Carey, 1985), while others say it emerges through the use of personification and vitalistic causality (Hatano &
Inagaki, 1994; Inagaki, 1997). Other researchers have put forward alternative types of theory acquisition. For example, Springer (1999) proposes that a naïve theory of biology is autonomous by the age 4 to 5 years and does not emerge from other framework theories though it may be informed by them. He posits that the acquisition of factual knowledge combined with inferences that are generated from this knowledge are what drives the acquisition of a naïve theory of biology.

There seems little doubt that children acquire a knowledge base early on in life within the biological domain. Within this domain, not only do they have knowledge, but they also recognise underlying properties and are able to reason logically about biological phenomena. However, the acquisition and developmental processes involved are yet to be clarified.

2.6 Children’s Understanding of Physical Illness

As already stated, illness as a concept has significant connections to theories of biology. Illness and health are inherently biological states, and there has been sustained interest in the investigation of children’s knowledge of the physical aspects of health and illness (e.g., Bibace & Walsh, 1980; Buchanan-Barrow, Barrett & Bati, 2003, 2004; Hergenrather & Rabinowitz, 1991; Inagaki, 1997; Kalish, 1997; Perrin & Gerrity, 1981; Siegel & Peterson, 1999). Typically, the research that has been conducted has investigated children’s definitions of illness (Millstein, Adler & Irwin, 1981), what children understand about the causes of illness and what they know about the characteristics of illness (Brewster, 1982; Kister & Patterson, 1980). Overall, findings indicate a progression in cognitive development with an increase in knowledge and understanding with age. For example, children as young as 6 years of age have been shown to understand illness in terms of a ‘magical’ phenomenon (Bibace & Walsh, 1980; Perrin & Gerrity, 1981) and as children become older, by age 8 or 9, they begin to develop some understanding of a cause and effect relationship, in that they begin to report internal attributes for illness (Natapoff, 1982). By the age of 10 or 11 years, children are able to conceptualise multiple causes associated with illness. Germs are still perceived as the primary means by
which one can become ill (Perrin & Gerrity, 1981). By the time children turn 12 or 13 their understanding of illness will have become more accurate and complex, showing a more adult-like understanding.

The examination of children’s knowledge and understanding of contagion and contamination allows investigation of children’s thinking about causal relationships surrounding illness, as these concepts form some part of a model or theory of illness. Thus, a large proportion of the empirical work into children’s thinking about illness has examined their understanding of contagion and contamination (e.g. Kalish, 1996a, 1996b; Keil, 1992, 1994; Kister & Patterson, 1980; Rozin & Nemeroff, 1990; Siegal, 1988; Siegal, Patty & Eiser, 1990; Springer, 1999). Most common childhood illnesses involve infection, for example, colds, chicken pox and measles, so young children are likely to be most familiar with the processes of contagion and contamination. The ‘rules’ that children know about the causes of illness will therefore tend to relate to processes of infection, such as not washing hands before eating.

Infection has been conceived in a number of ways, from basic to more sophisticated models. These are the associational model, the physical model, the biological model and differentiated-biological model of infection (Kalish, 1999). The most basic conception of infection is entitled ‘associational infection’, where associations are made between entities which function similarly to the principles of sympathetic magic, for example proximity (Rozin & Nemeroff, 1990). A physical model of infection proposes that the transfer of infection is based on the transfer of material particles. Biological infection takes this idea further, where agents of infection are understood to be living entities, which infect and act on other living things. A differentiated-biological model of infection postulates that the agents of infection are understood to be distinct types of species with unique attributes. In this case, infection is a more sophisticated description of a set of related but distinct processes (Springer, 1999).
Much research has claimed that pre-school-aged children think about infection in associational terms. For example, young children tend to view all illnesses as contagious (Kister & Patterson, 1980), believing that an illness will be passed from one person to another owing to the two people being spatially close together. However, more recent research has challenged the idea that young children think about infection in purely associational terms. For example, other researchers have shown that children limit their judgements of contagion (Kalish, 1996a; Keil, 1992, 1994; Siegal, 1988; Siegal et al., 1990) and involve some idea of an intermediate mechanism (Kalish, 1996b). Most recent research, however, suggests that by the end of the pre-school years children have a physical rather than associational view of infection. The evidence therefore suggests that young children think about contagion and contamination in more than associational terms, and that they understand the physical nature of infection. However, adults possess an integrated model of infection, which forms a coherent model of illness causation. The modern western understanding and coherent model of infection is associated with our understanding of the action of germs. When reasoning about illness, children have been shown to focus on how an illness was caused when judging contagion (Kalish, 1996a). Young children do see germs as a mechanism of infection (Kalish, 1995). They understand that germs function like poisons, as physical agents of contamination (Kalish, 1999). However, the physical model that children have been shown to demonstrate does differ from an adult-like common-sense biological understanding. A biological conception of infection requires additional knowledge beyond a simple understanding of germs. For example, it requires the knowledge that infection is not static and contamination can spread within the host and that agents and hosts are living things. However, it appears that young children do not have a particularly ‘biological’ understanding and existing evidence seems to suggest that young children may hold a physical model but not a biological model of infection (Kalish, 1999).

Inevitably, children’s understanding of contagion and contamination has become a focus of researchers, as a consequence of children citing these processes as the causes of illness. Even though there is still debate about the exact model of infection
that children hold, research suggests that infection plays a key role in children’s understanding of illness. For example, researchers have argued that, at some point in their development, all children think that illnesses are contagious (e.g., Bibace & Walsh, 1980, 1981; Brewster, 1982; Hergenrather & Rabinowitz, 1991; Nagy, 1951; Perrin & Gerrity, 1981) and that infection is the only underlying causal mechanism. Once children have grasped that germs and infection are likely as causal processes underlying illness, they tend to over-extend this conception. It is often young school-aged children who have been found to do this (Kister & Patterson, 1980). By early adolescence children seem to have given up this view in favour of the notion that there may be a variety of causes for illness (Bibace & Walsh, 1980; Hergenrather & Rabinowitz, 1991).

Other researchers have investigated children’s experience of illness, exploring whether there is an association between personal experience of illness and children’s knowledge and understanding of illness. These researchers have suggested that age differences in knowledge of illness are due to an increasing availability of information about health and illness in general, as children grow older (Bird & Podmore, 1990; Dimigen & Ferguson, 1993). However, the degree and direction of the influence that experience of illness has on children’s understanding of illness is unclear. For example, some research has suggested that exposure to disease and medical treatment results in a greater understanding of illness related concepts (Bibace & Walsh, 1981; Feldman & Varni, 1984; Rubovits & Siegel, 1994). Others have proposed that the understanding that ill children have of the causes of illness develops in a similar fashion to that of healthy children (Eiser, 1985), and that illness type and length of hospitalisation do not affect the level of understanding of the child (Brewster, 1982). Furthermore, some studies have reported that children demonstrate a less sophisticated understanding where they have experience of illness compared to children without illness experience (Eiser, Town & Tripp, 1988; Nagera, 1978; Perrin, Sayer & Willett, 1991; Shagena, Sandler & Perrin, 1988; Simeonsson, Buckley & Monson, 1979). In support of these findings Berry et al. (1993) found that a number of the children suffering from juvenile rheumatoid arthritis in their study maintained misconceptions about their condition. This was in
spite of the information that was given to them. The importance of the role of
experience of illness in the formation of children’s conceptions of health and illness
still lacks clarity with inconsistencies in the findings reported in the literature.
Nevertheless, research indicates that children do have considerable knowledge and
understanding of physical illness at an early age and that this knowledge and
understanding progresses with their cognitive development.

2.7 Leventhal as a Conceptual Framework

Within the adult literature it has consistently been found that in adulthood,
representations of illness can be divided into five major components namely:
identity, causes, timeline, consequences and curability. Leventhal et al. (1980, 1984)
utilised schema principles in order to investigate perceptions and theories concerning
illness. This stemmed from the understanding that illness is stored in memory in the
form of a schema. A schema refers to the organisation of knowledge and
interconnecting objects, actions and events.

Leventhal et al. (1980, 1984) used open-ended questions with adult patients
diagnosed with hypertension. They found that patients tended to look for symptoms
in order to obtain a concrete representation of the ‘illness’ condition, and that more
intense symptoms were associated with a more severe illness. In addition, perceived
timeline of illness was found to be associated with perceived causation, so that where
stress was believed to be the cause for hypertension, this lead to the illness being
perceived as acute, and recoverable from, once the stress was removed. In contrast,
if the cause of the hypertension was thought to be due to a family history, then
hypertension was perceived to be a chronic illness.

As a result of such questions, four components arose that reflected how individuals
represent specific illnesses. These were:

1) Identity – the label given to an illness, which was associated with knowledge
about the illness, including symptoms.
2) Causes – factors involved in the development of the illness.

3) Timeline – the perceived duration of the illness course and whether it was acute or chronic.

4) Consequences – effects during the course of the illness and afterwards.

Lau and Hartman (1983) investigated college students’ understanding of minor illness, where participants were asked to recall their last illness and describe why they thought they had become ill and how they recovered. Support was found for Leventhal et al.’s four components, but an additional component was identified, namely curability. This five-component model has provided an effective conceptual framework for examining adult understanding of illness and has been extensively used (e.g., Bishop, Briede, Cavazos, Grotzinger & McMahon, 1987; Lau, Bernard & Hartman, 1989; Leventhal, Diefenbach & Leventhal, 1992; Meyers, Leventhal & Guttman, 1985; Taylor, Lichtman & Wood, 1984; Turk, Rudy & Salovey, 1986).

Although this model has not been widely researched within the context of children’s thinking about physical illness, it has proved to be useful with children. The majority of the research utilising this model with children has examined one or more of the dimensions in isolation, for example identity and/or cause of illness. Research indicates that young children have considerable knowledge about the identities of various forms of illness (Bird & Podmore, 1990). As far as causality is concerned, children as young as the pre-school years have been shown to display knowledge of contagion and contamination (Siegal, 1988). Young children tend to provide contagion explanations of the causes of disease, with older children demonstrating a broader understanding of the factors that cause illness (Hergenrather & Rabinowitz, 1991). Overall, researchers examining various dimensions from Leventhal’s framework have concluded that children’s knowledge and understanding of disease becomes more accurate with age (Sigelman, Maddock, Epstein & Carpenter, 1993).

Only two studies have investigated children’s thinking about illness utilising all five dimensions (Goldman, Whithney-Saltiel, Granger & Robin, 1991; Patterson, Moss-Morris & Butler, 1999). Patterson et al. (1999) investigated age, verbal intelligence,
socio-economic status and personal experience and children’s conceptions of colds and asthma. They interviewed 182 children aged between 7 and 14 years, comparing the concepts of colds and asthma in children with and without asthma. They found that children’s conceptualisations of colds and asthma changed from a simple reasoning to a more sophisticated abstract understanding with age. Verbal intelligence, measured by the Wechsler Intelligence Scale for Children – Third Edition (WISC-III, Wechsler, 1991) and socio-economic status, measured by parental income, were also found to be significant predictors of children’s ability to conceptualise these illnesses. Furthermore, they found that when age, verbal intelligence and socio-economic status were controlled for, children with asthma had more sophisticated conceptualisations than children who did not have asthma. Children with asthma experience also demonstrated different understandings of the different dimensions in the Leventhal framework. Children with asthma demonstrated more knowledge and understanding of the causes, timeline and the control/curability of asthma than children without asthma, with only marginally more understanding about the identity component. There was no association of asthma experience and children's thinking about the consequences and prevention of asthma however. These two dimensions may be more complex and abstract, and it is only when children develop the ability for more abstract reasoning that they are able to apply their personal illness experience. On the other hand, emotional factors may interfere with learning about these two dimensions; full awareness of the severity of the illness may be emotionally threatening (Eiser, 1991). However, all children may have more knowledge and understanding about the consequences of asthma as the consequences of having asthma are fairly salient for all children. The authors conclude that the findings of this study provide support for the influence of illness experience on knowledge and understanding of illness.

Goldman et al. (1991) interviewed 27 healthy pre-school children, aged 4 to 6, about their conceptions of common illness (cold/fever). They found that children understand illness in terms of the five components of the Leventhal model (identity, cause, consequence, timeline and cure). The children were found to provide magical or phenomenalistic explanations for the cause of illness. They tended to cite
medicine or a doctor as the cure. The children also believed that cold/fever would have a short timeline and they tended to give 'somatic profiles' for consequences, for example, feeling bad or having a hot forehead. Interestingly, in contrast to Perrin and Gerrity (1981) who found that kindergarten children could not describe the general symptomatology defining an illness, the pre-school children were found to distinguish between fever and colds giving each illness its own 'identity'. Children therefore, even at pre-school age, show an understanding of the different components put forward by Leventhal et al. (1980, 1984) and Lau and Hartman (1983). Although these two studies suffer from methodological limitations, such as a small sample size and limited age range in the Goldman et al. (1999) study, and the use by both studies of an open-ended interviewing technique, raising the possibility of an underestimation of children's knowledge, they do suggest that Leventhal's model provides a valuable framework for the investigation of children's knowledge and understanding of physical illness, which may therefore also prove useful in the investigation of children conceptions of mental illness.

2.8 Adult Conceptions of Mental Illness

There is relatively little research that has investigated children's conceptions of mental illness. In contrast, however, there is a large body of empirical work that has investigated adult conceptions and stereotypes towards mental illness (e.g., Appleby & Wessely, 1988; Borinstein, 1992; Hall et al., 1993; Levey & Howells, 1994; Link & Cullen, 1986; Nunally, 1961; Rabkin, 1974). This considerable amount of research provides a useful reference for the investigation of children's conceptions about mental illness. Therefore this review will first briefly consider the adult literature about conceptions of mental illness and then turn to the research that has been conducted into children's thinking about this concept.

A review of the early literature, conducted by Rabkin (1974), led to the conclusion that the label of 'mental illness' resulted in a negative and rejecting response by society, and an irreversible diminished standing and stigma within the community. In general, findings of research conducted with adults reveal that both the general
public, and a substantial minority of professional people, have rejecting attitudes towards those who suffer from mental illness (Weiss, 1985). Furthermore, more rejecting attitudes of the general public towards the mentally ill have been found to be associated with increased age and lower levels of education (Brockman & D'Arcy, 1978; Trute, Tefft & Segall, 1989).

Personal experience has also been shown to play a part in attitudes held towards the mentally ill. For example, Keane (1991) investigated the effect of an eight-week psychiatric nursing course on attitudes towards the mentally ill, and found a positive change in attitudes towards those who suffer with a mental disorder. Personal experience of mental illness raises an important issue owing to the de-institutionalisation of psychiatric patients since the 1960s, which has lead to an increase in the number of individuals with mental health problems living within the community. This increase in contact with the mentally ill for the general public should lead to a decrease in negative attitudes towards this group as the stereotypical relationship is transformed into a personal one (Amir, 1969). However, prejudice does still exist and has been reported to be stronger towards people showing deviant behaviours, for example psychiatric groups, than towards ethnic and religious groups (Lester, 1992).

Attitudes can be assessed in terms of 'social distance'. Social distance has been used as a proxy for behavioural discrimination, and has been used in research into attitudes towards mental illness (e.g., Link, Cullen, Frank & Wozniak, 1987; Penn, et al., 1999, Penn et al., 1994). Social distance reflects the self-report by an individual about the extent to which he or she is willing to engage in social relationships with individuals with mental health problems. Social relationships can include activities such as renting the person a room, hiring the person as a babysitter, dating them or working with them. Research using social distance has found that the general public are unwilling to associate with the mentally ill, especially if hospitalisation has been reported (Phillips, 1966). One study using this method found that 34% of participants had socially restrictive attitudes towards this group of people (Brockington, Hall, Levings & Murphy, 1993). Similarly, Hall et al. (1993) reported
that 59% of participants in their study would be prepared to work alongside a person with a mental illness, 11% would be prepared to have a close relationship with an individual with mental health problems and only 6% would marry a person who was mentally ill.

Nunally (1961) conducted an extensive investigation regarding adult attitudes towards, and perceptions of, mental illness and concluded that the stigma attached to the mentally ill does not stem from misinformation but a lack of information about mental health problems. The research also confirmed that a 'negative halo' exists around those who are mentally ill leading to an association with things that are 'bad'. Indeed, Monahan (1992) argues that the belief that a mental disorder predisposes an individual to violence is found by different cultures throughout history. According to Trute et al. (1989), these types of perceptions about the potential dangerousness of the mentally ill lead to rejecting attitudes towards this group of individuals. In addition, these negative attitudes, and the fear that follows, results in a desire to exclude those who suffer from a mental illness from residential neighbourhoods (Brockington et al., 1993).

Other research has investigated the role that the mass media plays in forming attitudes towards mental disorder and has found that television, films and newspapers routinely depict those who have mental health problems in stigmatising ways (Dieffenbach, 1997; Gerbner, 1995; Wahl, 1995; Wahl & Roth, 1982). For example, one study found that over 70% of the time, where an individual with a mental illness appeared in a television programme, that individual was depicted as violent (Signorielli, 1989). Furthermore, the violence of the mentally ill individuals portrayed was often more graphic than that of individuals without a mental illness (Defleur & Dennis, 1981). These negative depictions of the mentally ill can influence the way that people view individuals with psychiatric disorders (Philo et al., 1994; Thornton & Wahl, 1996; Wahl & Lefkowits, 1989).
It seems therefore that, although the concept of mental illness has changed over the last 30 years, the adult population still view the mentally ill as intolerable, dangerous and unpredictable (Segal, 1978).

2.9 Children’s Conceptions of Mental Illness

As already discussed, although a large body of research can be found in terms of adult attitudes towards mental illness, in comparison there is relatively little work that has investigated children’s attitudes towards, and perceptions of those who are mentally ill. This is perhaps surprising considering that these are future adults, and the investigation of the knowledge and attitudes of children may inform us of how to combat the commonly found negative and rejecting response of adults towards the mentally ill.

Studies that have looked at children’s conceptions of mental illness have investigated children’s knowledge and understanding of what a mental illness is, and what children know and understand about cause and treatment (e.g., Bailey, 1999; Poster, 1992; Roberts, Beidleman & Wurtele, 1981). Other researchers have examined the developmental aspect of children’s knowledge and understanding (e.g., Marsden & Kalter, 1976; Spitzer & Cameron, 1995; Weiss, 1986, 1994), with some investigating children’s attitudes towards the mentally ill (e.g., Poster et al, 1986; Wilkins & Velicer, 1980). Research methodology has varied and involved the use of vignettes (Coie & Pennington, 1976; Kalter & Marsden, 1977), with a few studies utilising other means (Poster, Betz, Mckenna & Mossar, 1986; Weiss, 1986, 1994). Overall, findings indicate that children view the mentally ill as deviant, unattractive and show an unwillingness to associate with them (e.g., Poster et al., 1986; Roberts, Johnson & Beidleman, 1984; Wilkins & Velicer, 1980). It seems that the conceptions of children of the mentally ill mirror those found in adults.

2.9.1 Children’s knowledge of mental illness

A number of studies have investigated children’s knowledge and understanding of mental illness, exploring children’s ability to identify and classify deviant
behaviours. Researchers have typically focused on children’s ability to recognise disturbed behaviour in their peers. For example, Marsden and Kalter (1976) used vignettes and an open-ended interviewing technique. The vignettes presented to children described the behaviour of boys with varying degrees of disturbance. Vignettes described a ‘normal’ child, a child with a school phobia, a child with a passive-aggressive character disorder and a psychotic or borderline psychotic child. They found that fourth grade children (age 9 to 10) and sixth grade children (age 11 to 12) could discriminate the behaviour of the ‘normal’ child from that of the emotionally disturbed children. The children were also able to distinguish among the degrees of severity of the deviant behaviours. Furthermore, their perceptions of deviant behaviour were found not to be related to the empathy that the children had for the characters in the vignettes, and not to be related to intelligence scores. Similarly in another study, children from the fourth grade (age 9 to 10 years) and upwards were also noted to be able to distinguish between normal and disturbed behaviours, although first graders (children aged 6 to 7), had difficulty in identifying deviant behaviours (Coie & Pennington, 1976). Novak (1974) also examined children’s reactions to disturbed behaviours in their peers. He asked 326 fourth, fifth and sixth grade children (aged 9 to 12) to read a series of descriptions of their peers. The vignettes described the following behavioural disorders: depressed, phobic, immature, aggressive and schizoid. Children were also presented with a description of a ‘normal’ child. Children were asked to rate the characters on attractiveness, social distance and perceived similarity of the character to themselves. Results indicated that the children rated the ‘normal’ child significantly more positively on all three measures compared to their ratings of the children with behavioural disorders, indicating that the children differentiated the behaviour from the ‘normal’ child and that children show an unwillingness to associate with the characters with deviant behaviours.

Other researchers have investigated what children know about the characteristics and causes of mental illness. For example, Roberts et al., (1981) investigated children’s knowledge of mild and severe medical and psychological problems using an open-ended interviewing technique. Vignettes were presented to 34 fifth and sixth grade
children, aged 9 to 13. Vignettes described imaginary peers with sniffles and coughing (mild medical problems), missing school and staying in hospital (severe medical problems), screaming and kicking other children (mild psychological disturbance) and believing in monsters from outer space (severe psychological problems). Following the vignettes, children were asked what they thought was wrong with the characters and what they thought had caused the illness. Overall, the psychological disorders were seen as being caused by distortions of reality or innate aggressive tendencies. Children also thought that the mild psychological disorder was caused by family maltreatment, and that the severe psychological disorder was caused by too much media exposure. Another study investigating children’s knowledge of the characteristics and causes of mental illness, explored children’s thinking about the characteristics and causes of psychological disturbance in children as well as adults (Poster, 1992). One hundred and sixty eight children from the third to the sixth grade, aged 8 to 12, were presented with vignettes describing the symptoms of three adults and three children with depression, anxiety and schizophrenia. The children were then asked about the diagnostic labels and the causes of the disorders. Poster found that only 27% of the children assigned a mental illness label, such as ‘crazy’, ‘depressed’ or ‘phobic’, to the characters. Furthermore, the children’s responses varied according to the type of mental illness presented in the vignette. For example, the children were more likely to assign psychiatric labels to the character with schizophrenia and attribute external causes compared to the other mental illness diagnoses. No analyses were presented for the effects of age or gender of the characters in the vignettes. However, children did distinguish the character with schizophrenia from the other mental illness diagnoses.

Bailey (1999) further investigated the understanding of the causes and consequences of mental illness in a group of 106 11- to 17-year-olds, through the use of open-ended questions. The most frequently stated causes included stress (41%), genetics (27%) and bad experiences in childhood (26%). The most common consequences cited were that people who are mentally ill would have to go to mental hospitals (23%), nursing homes (8%) and would lose control of their behaviour (7%). The young people also thought that a person with a mental disorder should be treated in a
hospital (46%), by a doctor (22%) or by a psychiatrist (19%). These individuals therefore demonstrated an understanding of causes and consequences of psychological disturbance.

Some of the research into children’s knowledge of mental illness has been hampered by the use of small sample sizes (e.g., Coie & Pennington, 1976; Marsden & Kalter, 1976). However it does appear that children do recognise deviance in the behaviours of their peers from the age of 9 to 10. Children also appear to be able to distinguish between different types of psychological disorder and demonstrate some knowledge of the causes and consequences of mental illness (Bailey, 1999; Poster, 1992; Roberts et al., 1981).

2.9.2 Children’s attitudes towards mental illness

A number of studies have investigated children’s attitudes towards the mentally ill, exploring how children appraise the mentally ill and how they react to them. For example, in the study by Roberts et al. (1984) already described, the attitudes of 9- to 13-year-olds towards imaginary peers with mild and severe medical and psychological problems were investigated. The children were asked to rate each of the characters in terms of their attractiveness as a playmate. The study found that children rated all characters as relatively unattractive; however, the character with the mild psychological disturbance was found to be the most unattractive, followed by the character with severe psychological disturbance. These results are not surprising however, as the child with the mild psychological problems was depicted as showing aggressive behaviour towards other children. In another study, 20 children from grades three to six, aged 8 to 12, were presented with concepts ‘person’, ‘crippled’, ‘retarded’ and ‘crazy’ and asked to describe what each person would be like (Wilkins & Velicer, 1980). Results indicated that the ‘crazy’ person was rated less positively and less understandable than the other categories, with half of the children attributing dangerous behaviours to the ‘crazy’ person.

Some research has used other means in order to examine children’s attitudes towards mental illness. For example, Poster et al. (1986) conducted a study involving
children’s figure drawings and stories to gain descriptive data on children’s attitudes towards the mentally ill. The study involved 168 children in the third to sixth grade, aged 8 to 12 years. Firstly, children were asked to draw a picture of a person doing something and to write a brief story about the picture. Children were then presented with six vignettes describing the problematic behaviours of both children and adults with anxiety disorder, schizophrenia or depression. The vignettes were followed by a series of questions inquiring about children’s thinking about the behaviour of the characters exhibited in the vignettes. Following this, children were asked to draw a picture of a ‘crazy’ person doing something, and again to write a short story about what their character was doing. Results indicated no differences between the children’s drawings of a ‘normal’ person and a ‘crazy’ person. However, differences were found in the stories that children wrote about their pictures. Four themes were identified in the stories about their drawings of the ‘crazy’ person that few children mentioned in their stories about their drawings of a ‘normal’ person. Forty percent of children displayed the first theme of inappropriate behaviours, which included the ‘crazy’ person standing on their head and flying like superman. The second theme of suicidal behaviour included a person jumping off a building, shooting themselves with a gun or walking out into the road to be hit by a vehicle, and was exhibited by 28% of children as a characteristic of a ‘crazy’ person. Fourteen percent of children exhibited a third theme of hostility/aggression; examples provided in the drawings and stories within this theme included family violence, sexual violence and criminal violence. Finally, the fourth theme of self-abusive behaviours such as drinking alcohol, smoking cigarettes and taking drugs was displayed by 13% of children as behavioural characteristics of a ‘crazy’ person. It appears that although children may not attribute differences in physical characteristics to individuals with mental disorders, they do attribute a variety of negative types of behavioural characteristics to the mentally ill.

Another study investigated the social representations of mental illness in children and adults through their drawings (de Rosa, 1987). In two studies, 720 children, aged 5 to 16, and adults were asked to draw a human figure (test A), a ‘madman’ (test B), and a normal person but as a ‘madman’ would draw him or her (test C) (de Rosa,
De Rosa hypothesised that having to produce a drawing as a 'madman' would, might stimulate projective phenomena so that drawings were expected to show stereotyped images of the mentally ill characterised as 'magic-fantastic representations' (De Rosa, 1987). She postulated that these could be positive (jester, clown) or negative (devil), or characterised by representations of illness (sick person, physically disabled, in a state of hallucination) or as deviant (criminal, drug addict). Test A produced stereotyped images in only 9.3% of cases. The dominant stereotype produced for test B by 73.4% of children was one of deviance. In drawings of people produced 'as a madman' would (test C), the dominant stereotype was a 'magic-fantastic' one, produced by 22.8% of children, while 14% produced a deviant representation and 12.2% a medical one. De Rosa (1987) concludes by stating that the stereotypes produced by children and adults in their drawings correspond to conceptions found within society and throughout history. However, de Rosa's studies have certain limitations. It is unclear whether inter-rater reliability was tested regarding the analysis of the drawings produced, if this was not the case then the interpretation of the drawings of children and adults by de Rosa is problematic because of the subjective nature. It appears that prior exploration of what the word 'madman' means to adults and children was also neglected, so that the variety of representations produced is not surprising. Overall, results of these studies remain questionable because of the methodology utilised by de Rosa.

Overall, research into children’s attitudes towards mental illness indicates that children perceive the mentally ill in a negative way, show an unwillingness to associate with them and attribute antisocial, aggressive and even dangerous behaviours to them (Poster et al., 1986; Roberts et al., 1984; Wilkins & Velicer, 1980).

### 2.9.3 Developmental progression in children’s knowledge and attitudes towards mental illness

Some researchers have investigated age differences in children’s conceptions of mental illness. For example, Wilkins and Velicer (1980) in their study found no differences in the attitudes of third and six grade children (8 to 12 years), in that they
shared similar negative attitudes towards people who are ‘crazy’. Most other research however, has found significant age differences in children’s conceptions of mental illness.

One study explored age differences in how children of school age define and characterise the mentally ill, and what they understand about cause and treatment (Spitzer & Cameron, 1995). Ninety children from grades one to seven, aged 6 to 13, were presented with three vignettes describing peers with ‘normal’ behaviour, an antisocial character disorder or psychotic or borderline psychotic behaviour, taken from Marsden and Kalter (1976). Following the vignettes, children were asked a series of questions about definitions, causality and treatment, including whether they thought that the person was ‘crazy’ or ‘normal’. Children’s definition of mental disorder varied greatly when questioned about the terms ‘mental illness’ and ‘crazy’. In fact, none of the 6- to 7-year-olds that were questioned were familiar with the term ‘mental illness’. The majority described it as a very severe form of physical illness, indicating that the word ‘mental’ was interpreted as an indication of seriousness. This definition of mental illness as a severe physical illness was still prevalent in the responses of children of 9 to 10 years of age; however connections with the brain or head did begin to emerge. It was not until the age of 12 to 13 that the definition of mental illness as a severe physical illness was much less prevalent, with definitions of mental illness as a problem with thinking (mind/brain) and craziness becoming more common.

The word ‘crazy’ on the other hand produced definitions similar to the adult concept of mental illness, although there was some confusion in terms of the underlying pathological processes. Similarly, first grade children (aged 6 to 7) knew very little about the causes or treatment of mental illness, for example they responded that mental illness was caused by wanting to be accepted by others or by imitating others, and that crazy people should receive medical treatment or be sent to jail. However, children in the seventh grade, aged 12 to 13, demonstrated an increased understanding of causes and treatment, most frequently stating that mental illness was caused by traumatic events in childhood and that the person who was mentally
ill would need psychiatric help or hospitalisation. Overall therefore, a developmental trend in children's understanding of the definition, cause and treatment of mental disorder was found. This developmental trend was not found however for the characteristics of the mentally ill; for example, children of all ages, when questioned about the behavioural characteristics of the mentally ill, described them as acting strange, being weird or acting violent.

Weiss (1985) also investigated whether there was a developmental trend in children's attitudes towards those who suffer from mental illness. Children from grades two, four, six and eight (aged 7 to 14 years) completed the Opinions About Mental Illness Scale (Cohen & Struening, 1959). Results indicated that with increasing age, children take a less authoritarian attitude towards those with mental illness, view the mentally ill as more like themselves, are more likely to view mental illness as different from other types of illness, and perceive the mentally ill as less of a threat to society. Overall, children's attitudes towards mental illness changed in a positive direction between grades two and four, between the ages of 7 and 10, and then became relatively stable between grades six and eight, between the ages of 11 to 14. However, the Opinions About Mental Illness Scale has been criticised for being too complex (Lawton, 1964) and incomplete (Baker & Schulberg, 1967). In addition, the study assumes that children as young as 7 years of age have a comprehensive understanding of what mental illness is, when subsequent research has shown this not to be the case.

In another study, Weiss (1986) carried out a developmental analysis of children's attitudes towards the mentally ill in comparison to other stigmatised groups. The attitudes of 577 children were measured using a projective measure of social distance. Children ranged from kindergarten (5 years old) to the eighth grade (14 years old). In this case children were asked to draw a simple stick figure representing themselves at a distance from the 'other person' at which they would feel most comfortable. Seven different types of people were presented, namely: 'convict', 'mentally retarded person', 'normal person', 'mentally ill person', 'crazy person', 'physically handicapped person', and 'emotionally disturbed person'.
Results indicated that children drew themselves furthest from the ‘convict’ and ‘crazy person’ and closest to the ‘normal’ person and ‘physically handicapped’ person. Thus, four distinct groups were identified by Weiss: 1) normal, 2) physically handicapped, 3) mentally ill, mentally retarded, and emotionally disturbed, and 4) convict and crazy (from the most to the least preferred). Children’s attitudes towards these groups were evident at kindergarten, by the age of 5, and were similar to children in the eighth grade (13 to 14 years of age). Furthermore, between the sixth and eighth grade (11 to 14 years), ‘crazy’ person replaced ‘convict’ as the least preferred individual. Although children from all the age groups studied associated ‘crazy’ people with fear and distrust and perceived them as a threat, this was particularly true for older children (11 to 14 years of age).

In an eight-year longitudinal follow up to this study, Weiss (1994) examined 34 of the children who had been in kindergarten (5- to 6-year-olds) from the original study who were now in the eighth grade (13 and 14 years of age). Attitudes were measured using the paper-and-pencil projective figure placement test as eight years earlier. Results were similar to those obtained by Weiss (1986), with ‘convict’ and ‘crazy’ person producing the greatest social distance, and ‘crazy’ person replacing ‘convict’, as the least preferred by the eighth grade (13 to 14 years of age). Social distance scores significantly changed in only one of the stigmatised groups, ‘mentally retarded’ persons, in that they were more acceptable. Weiss concludes that these results indicate that the children’s attitudes towards the deviant groups presented had developed and become relatively stable early on in childhood. The results also seem to indicate an increase in negative attitudes towards the ‘crazy’ person with age. However, the presentation of terms such as ‘mentally ill’ and ‘emotionally disturbed’ to describe the individuals by Weiss (1986, 1994) assumes that children understand what these terms mean. In fact, it has been noted by other authors that children have difficulty in understanding terms such as ‘mentally ill’ or ‘emotionally disturbed’ (Poster et al., 1986; Spitzer & Cameron, 1995). The differences in children’s attitudes towards these different groups therefore may be due to a lack of understanding of such terms by the children and not a result of the actual attitudes that children hold towards these different deviant groups. This may also explain the
differentiation in attitudes towards the 'mentally ill' and 'crazy', as children have been found to be more familiar with the term 'crazy' (Poster et al., 1986).

Other studies that have investigated children's attitudes towards mental illness have also found age differences. For example, Royal and Roberts (1987) explored age differences in children's attitudes towards 20 disabilities, including mental illness. One hundred and fifty children from grades three to twelve (8 to 18 years of age), and 25 college students were presented with descriptions of each disability and asked to rate each one in terms of visibility, severity, acceptability and familiarity. Students consistently rated blindness, cancer, paraplegia and mental illness as the most severe disabilities. Mental illness and 'mental retardation' were rated as the least acceptable disabilities by all students. Students also became more accepting of the disabilities with age, with one exception, namely mental illness, whereby students showed more negativity with age. Similarly, another study investigated age differences in children's knowledge of the nature, causes and prognosis of 'blindness', 'deafness', 'orthopaedic disabilities', 'mental retardation' and 'psychological disturbance' (Conant & Budoff, 1983). Results indicated that, compared to older children, younger children had the least knowledge about 'psychological disturbance', followed by 'mental retardation'. The authors conclude that these differences reflect an inability of younger children to grasp the abstract and invisible nature of 'mental disabilities'.

Furthermore, Dollinger, Thelen and Walsh (1980) explored how children and young people categorise different types of psychological disturbance. They asked 1051 10-to 18-year-olds about the sorts of problems that clinical psychologists would treat. The children's responses were divided into five categories: external, internal, social labels and other. Results showed that with age, children were more likely to respond with 'internal' psychological problems, rather than overt behaviours and less likely to cite social problems. It appears that children's conceptualisations of psychological problems progresses from external to internal, with older children able to appreciate the importance of thoughts and feelings in psychological well-being.
Overall therefore, a developmental trend in children’s knowledge of, and attitudes towards mental illness has been found (e.g., Conant & Budoff, 1983; Dollinger et al., 1980; Royal & Roberts, 1987; Spitzer & Cameron, 1995; Weiss, 1985). It appears that younger children do not have a clear understanding of what mental illness is and that their knowledge becomes more sophisticated with age (Wahl, 2002). Similarly, children’s attitudes towards the mentally ill appear to become more negative with age (Royal & Roberts, 1987; Weiss, 1986; 1994).

2.9.4 Gender and children’s conceptions of mental illness

In terms of the role of participant gender in children’s conceptions of mental illness, conflicting results have been obtained, with some researchers finding no effect of gender (Coie & Pennington, 1976; Novak, 1974), while others report its existence. For example, Marsden and Kalter (1976) noted that girls, in comparison to boys, tended to normalise the psychotic character in the vignettes and perceive the behaviour as creative or the product of an imaginative mind. They also noted that boys and girls showed differences in the value they assigned to specific behaviours when evaluating characters. Ross and Ashok (1983) carried out a study that investigated adolescents’ attitudes towards mental disorder in their peers and found greater social acceptance of the mentally ill by female respondents compared to male respondents. Girls indicated a greater belief in social causative factors, and showed a stronger preference for psychosocial treatment compared to boys. Ross and Ashok hypothesise that the greater acceptance of the mentally ill by girls was due to the importance that they place on the psychosocial factors of mental disorder, leading to an increased concern that such groups should not become socially isolated. While it is not evident in all studies, there do appear to be differences in the responses given by boys and girls when questioned about psychological disturbance.

2.10 Methodological Limitations of Existing Research into Children’s Conceptions of Mental Illness

Overall, research into children’s thinking about those who suffer from mental disorder has found that children view the mentally ill as different, unattractive and
show an unwillingness to associate with them, a reaction that is now well recognised within the literature regarding adult attitudes towards mental illness. However, there have been problems with the approaches and methods used. The methodological limitations of existing research have left many questions unanswered.

First, there is the need to establish the appropriate terminology for children when examining their thinking in this area. The majority of research conducted into children’s conceptions of mental disorder has failed to investigate how children refer to the mentally ill and what they understand about the terminology used. In fact, a number of studies conducted (e.g., Bailey, 1999; Poster, et al., 1986; Spitzer & Cameron, 1995; Weiss, 1986, 1994) have highlighted the importance of establishing what children understand by mental illness, in particular the language that they use to talk about this phenomenon, as children appear to derive different meanings according to the terminology used. For example, young people have been found to be familiar with a number of terms used in association with the mentally ill such as ‘retarded’ (19%), ‘psychopath’ (17%), ‘mental’ (10%), ‘crazy’ (10%) and ‘lunatic’ (9%) (Bailey, 1999). Other research that has specifically examined children’s understanding of the definition of mental illness has found that children do have different types of understanding about the different terms (Poster et al., 1986; Spitzer & Cameron, 1995). For example, young children have been found to be less familiar with the terms ‘emotionally disturbed’, ‘mentally ill’, or ‘mentally disturbed’ as they are with the term ‘crazy’ (Poster et al., 1986). Furthermore, ‘mental illness’ is often defined as a severe physical illness, with definitions of the term ‘crazy’ resembling the definitions that adults hold (Spitzer & Cameron, 1995). It is therefore important to establish the terminology required in order to maintain face validity.

Second, the majority of the research conducted into children’s knowledge of and attitudes towards mental illness has adopted the stage approach to cognitive development. This approach neglects individual differences, failing to acknowledge individual gains in understanding that might occur from particular experiences in a child’s life. The ‘theory’ approach to cognitive development, which addresses
cognitive development from a domain-specific standpoint, has not yet been applied extensively to investigate children's understanding of mental illness.

Third, there is a need to find new methodologies for investigating children's thinking about mental illness. The literature reveals that a variety of different methods have been used. The majority of researchers have utilised vignettes, with a few using drawings and story production techniques. McMeniman (1951) stressed the importance of using drawings in order to determine the attitudes of young children, by tapping information that they may not readily be able to verbalise. In addition, some authors state that such measures are easy to administer, especially in respect to children, and this form of measurement allows for children whose test-taking abilities are not amenable to traditional questionnaire scales. However, others disagree, stating that the interpretation of drawings and stories is subjective, and instead argue that vignettes allow participants to react in a way that is comparable to behavioural reactions to concrete situations, but within circumstances that allow greater experimental control (Brockman, D'Arcy & Edmonds, 1979).

Finally, whether or not there are gender differences in children's thinking needs further elaboration. Research conducted using child participants has found conflicting results in terms of the effect of gender and attitudes towards mental illness. Some research has highlighted an effect of gender (Marsden & Kalter, 1976; Ross & Ashok, 1983), while other studies do not report gender effects (Coie & Pennington, 1976; Novak, 1974). Further research is therefore needed in order to clarify this confusion.

2.11 The Present Research

Thus, previous research which has examined children's conceptions of mental illness exhibits various limitations, perhaps the most significant of which is the failure to ascertain the most appropriate terminology to use for referring to mental illness when working with children. Furthermore, none of the previous studies have used a naïve theory perspective, and while some research has utilised Leventhal's framework to
investigate children’s thinking about physical illness, his model has not yet been utilised in research into children’s conceptions of mental illness. The present research therefore aimed to establish an appropriate terminology regarding mental illness that children can understand, and to investigate the development of children’s conceptions of mental illness from a novel theoretical perspective, that of the naïve theory approach, using a novel conceptual framework, that of Leventhal.

Thus, the present research was designed to examine developmental trends in the representations of mental illness in children aged 5 to 11, and to address the theoretical and methodological limitations of existing research, as follows:

The first methodological problem addressed by the present research was the issue of language. It is evident that much of the previous work (e.g., Ross & Ashok, 1983; Weiss, 1986; 1994) has utilised a wide range of terms to refer to the mentally ill without knowing the significance of such terms to children. This undermines the face validity of these studies. As a result, the first study conducted took the form of a series of focus groups, in order to ascertain the appropriate terminology to use with 5- to 11-year-old children. The design of the subsequent studies in the present research was then guided by the results of these focus groups.

Second, the research also investigated children’s conceptions of mental illness from a novel conceptual framework utilising Leventhal’s five-dimensional model of illness understanding. Children were presented with the ‘identity’ component of the model through the use of vignettes and then questioned about the remaining components (causes, consequences, curability and timeline). This gave structure to the research and enabled a more systematic approach to the investigation of children’s knowledge and understanding of mental illness.

Third, much of the research which has been conducted into children’s understanding of physical illness and mental illness has adopted the stage approach to cognitive development. The present research instead adopted a ‘naïve theory’ approach to investigate children’s thinking about mental as well as physical illness from a
domain-specific viewpoint. This is also a novel approach in the investigation of children’s conceptions of mental illness. More specifically, the research aimed to examine the following: 1) children’s ontological distinctions by comparing children’s thinking about mental illness with their thinking about physical illness in order to explore their ability to differentiate between these two broad types of illnesses, and to explore the similarities and the differences in their thinking within these two domains; 2) the coherence of children’s thinking about mental illnesses; 3) their ability to construct causal-explanatory accounts of the causes and consequences of mental illness. Thus, the research investigated the development of children’s naïve theory of mental illness.

Fourth, much research conducted into children’s understanding of mental as well as physical illness has tended to use open-ended interviewing techniques. Findings may therefore not represent a full picture of young children’s understanding owing to problems of verbal reporting, where children are unable to access their knowledge or fully articulate their understanding. This may lead to an underestimation of children’s thinking. The present research addressed methodological problems of open-ended interviewing, by utilising a semi-structured interview technique incorporating card selection tasks instead. In order to minimise the problems of unassisted verbal reporting, the children selected their responses to the interview questions from a series of cards displaying a wide range of possible responses. The content of the cards had been generated on the basis of the children’s own responses to vignettes and questions in the focus group study, thus ensuring that the words available were likely to reflect the children’s own understanding.

Fifth, the present research also explored differences in boys’ and girls’ knowledge and understanding of mental health problems, in order to clarify whether or not there are gender differences in children’s conceptions of mental illness.

Finally, in the fifth study, the research utilised an appropriate terminology and methodology to investigate children’s emotional responses to mental illness, in order to examine children’s attitudes towards mental health problems.
2.12 Outline of the Present Research

The chapters that follow relate to each of the studies that were conducted for this thesis in order to tackle the limitations of previous research and address questions that remained unanswered.

*Study 1* (Chapter 3) took the form of a series of focus groups to investigate what children know and understand about the terminology used to describe mental illness and the mentally ill.

*Study 2* (Chapter 4) utilised Leventhal’s five-dimensional model of illness understanding to investigate what children know and understand about the causes, consequences, curability and timeline of four different types of mental illness.

*Study 3* (Chapter 5) adopted a naïve theory approach to investigate children’s conceptions of mental illness. This study focused on what children know and understand about the causes and consequences of mental versus physical illness diagnoses. The study compared children’s thinking about mental and physical illnesses, examined the coherence of their answers, and the causal-explanatory frameworks that they used.

*Study 4* (Chapter 6) also adopted a naïve theory approach but investigated the remaining components of the Leventhal model. Thus, the study focused on what children know and understand about the curability and timeline of mental and physical illness, again comparing children’s thinking about mental and physical illnesses, investigating whether children hold coherent naïve theories, and which causal-explanatory frameworks they adopt.

*Study 5* (Chapter 7) investigated the emotional aspects of children’s representations of mental illness. The study examined children’s perception of social distance, affect, empathy and social functioning for different mental illness diagnoses.
Thus, the present research extended previous research by addressing methodological limitations of existing work by developing an appropriate terminology and methodology, and tackled theoretical problems by using a naïve theory perspective and Leventhal’s conceptual framework to examine developmental trends in children’s thinking about mental illness. Furthermore, the research also examined children’s attitudes and emotional responses to mental illness, but utilised a methodology suitable for children of primary school age. More specifically, the studies comprising this thesis extended previous work by addressing the following research questions:

1) What do children know and understand about the different terms used to refer to mental illness and the mentally ill, and what is the appropriate terminology to use with children?

2) What do children know and understand about the causes, consequences, curability and timeline of different types of mental illness, and are there developmental trends in their knowledge and understanding of these components in relation to mental illness?

3) Do children reason about mental illness as a distinct domain, are they coherent in the answers that they give, do they construct causal-explanatory understandings of mental illness, and are there developmental trends in children’s reasoning about mental illness?

4) Having established an appropriate terminology for children, what attitudes do children hold towards those who are mentally ill?

5) Do boys and girls have different conceptions of mental illness?

6) Is experience of mental illness related to children’s conceptions of mental health problems?
CHAPTER 3

Study 1

How Do Children Talk about Mental Illness?

3.1 Introduction

The preceding review of the literature on children's conceptions of mental illness has revealed a number of methodological limitations. As we have seen, one crucial problem results from a general failure to establish a reliable set of words describing mental illness, which are comprehensible to young children. The majority of research has neglected to inquire about how children refer to the mentally ill and what they understand about the terminology used in relation to mental illness. Empirical work that has been carried out has utilised terms such as 'mental illness', 'mentally ill', 'mental disorder' and 'emotionally disturbed', without establishing the significance of such words to children.

In fact, the very small body of research that has investigated children's understandings of the definition of mental illness has revealed that children do have different understandings of the different terms. For example, children have been found to comprehend the term 'mental illness' as a severe physical illness (Spitzer & Cameron, 1995). It was therefore important for the present research to initially establish the type of language appropriate for child participants, in order to maintain face validity and thus tackle the linguistic problems of earlier empirical work. It was for this reason that a series of focus groups were conducted with children of primary school age in order to ascertain how children refer to the mentally ill and what they understand about the terminology used to describe those who suffer from mental illness.

The issue of how the focus groups should be conducted was an important one. How should the topic of mental illness be approached with children of primary school age? In particular, what words should be used? Would it be more useful to describe
different types of mental illness to the children, or should vignettes be used instead? Mental illness is a broad concept in itself and is referred to by using many different terms and in many different ways. For example, general terms such as mental disorder and mental illness might be used, or more specific terms using the diagnosis names such as depression or schizophrenia might be utilised. General terms used to refer to mental illness or those who suffer from mental illness might include the following:

<table>
<thead>
<tr>
<th>Mental illness</th>
<th>Off their head</th>
<th>Deviant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mentally ill</td>
<td>Lost the plot</td>
<td>Different</td>
</tr>
<tr>
<td>Mental</td>
<td>Mental disorder</td>
<td>Schizo</td>
</tr>
<tr>
<td>Crazy</td>
<td>Mentally disordered</td>
<td>Bad people</td>
</tr>
<tr>
<td>Mad</td>
<td>Ill/illness</td>
<td>Scary</td>
</tr>
<tr>
<td>Madness</td>
<td>Violent/dangerous</td>
<td>Weird/weirdo</td>
</tr>
<tr>
<td>Madman</td>
<td>Criminal</td>
<td></td>
</tr>
</tbody>
</table>

It was judged that there are three important aspects to examine in children’s terminology about mental illness. First, the focus groups needed to probe the children’s understanding of mental illness in general. The aim was to ascertain what children understood by mental illness as a general concept and what it meant to them, including the language they themselves used. Second, the focus groups examined what children knew about the specific diagnostic labels used to denote the different types of mental illness. Finally, the focus groups investigated what children understand about the behaviour of someone actually diagnosed with a named mental illness, including the cause of mental illness, the consequences of being diagnosed with a mental illness and what the future may hold for someone with mental health problems.

In order to examine these various strands of thinking, two series of focus groups were conducted, Series A and Series B. The first (Series A) examined mental illness from both general and specific viewpoints. First, children were asked about the general terms used to describe those who suffer from mental illness and they were
then questioned about the specific diagnostic labels. Series B on the other hand, investigated children's understanding of the behaviours of individuals diagnosed with different types of mental illness. Children were presented with a description of each of the different mental illnesses, without using the diagnostic label. However, both of the series of focus groups asked questions about how the person would act, the possible cause of the condition, whether the children thought the person could get better, and, if so, how long it might take.

With reference to the list of general terms used to refer to mental illness or to those who suffer from mental illness, it is possible to divide the words into different categories. Firstly, the terms may be divided into those that represent a condition that is temporary and treatable, for example the term 'ill' or 'illness'. Secondly, other terms represent more long-term or permanent conditions that are not necessarily treatable, for example 'mad' or 'madness'. Finally, the list contains adjectives that describe individuals with mental illness, for example 'crazy', 'deviant', 'scary' or 'weird'. In order to incorporate all of these categories of words, children were asked about the general terms 'mentally ill', 'mad' and 'crazy' in Series A, and children were questioned about the behaviours of the individuals described in the vignettes in Series B.

The specific mental illness diagnoses that were included in both series of focus groups were taken from the mental illnesses focused on by the Stigma Campaign run by the Royal College of Psychiatrists (1998-2003). As discussed in Chapter 1, this campaign aimed to increase public and professional understanding of different mental health problems, and to reduce stigma and discrimination towards this group of people. The campaign targeted a number of mental health problems, which included: depression, anxiety, schizophrenia, Alzheimer's disease and dementia, alcohol and other drug misuse, and anorexia and bulimia. These diagnoses were therefore included in both series of focus groups.

In order to provide structure to the focus groups, the questions that the children were asked were based on the Leventhal illness framework described in Chapter 2. This
A five-component model proposes that individuals represent illness in terms of identity, cause, consequence, timeline and curability. Children were given the 'identity' component either in the vignettes or through the use of the general terms or specific diagnoses and then questioned about the remaining components of the model. Children were given the 'identity' component of the illness framework in order to provide a starting point for investigating their understanding of mental illness and to test their understanding of the different diagnostic labels.

Overall, six focus groups were carried out, with three focus groups in Series A and three focus groups in Series B. Thus, each series was divided into three age groups, a 'young' group (Years 1 and 2), a 'middle' group (Years 3 and 4) and an 'old' group (Years 5 and 6). Six children participated in each of the groups, which were seen separately. A total of 36 children took part in the focus group study (18 in Series A and 18 in Series B) (see Table 3.1). There were equal numbers of boys and girls in each of the age groups for each of the series.

Table 3.1: Numbers of children who took part in the focus groups by age group (standard deviations in brackets)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Series A</th>
<th>Series B</th>
<th>Total</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>6.83 (0.41)</td>
<td>6.83 (0.41)</td>
<td>6.83 (0.39)</td>
<td>12</td>
</tr>
<tr>
<td>Middle</td>
<td>8.67 (0.52)</td>
<td>8.83 (0.41)</td>
<td>8.75 (0.45)</td>
<td>12</td>
</tr>
<tr>
<td>Old</td>
<td>10.50 (0.55)</td>
<td>10.67 (0.52)</td>
<td>10.58 (0.52)</td>
<td>12</td>
</tr>
</tbody>
</table>

Children were recruited from St Mary’s Immaculate Roman Catholic Primary School in Warwick, Warwickshire. Children were selected by their teacher, whereby children with a range of abilities were chosen.
3.2 Focus Group Series A

3.2.1 Method
The first three focus groups (Series A) questioned children about individuals who were described as 'crazy', 'mad' or 'mentally ill'. Children were asked for example, how the person would act, what they would do, what happens etc. The children were also asked about specific diagnoses for example, what it means if someone has depression, schizophrenia, dementia or an eating disorder.

The facilitator first introduced herself to the children and explained that she would ask some questions to find out what they thought. The children were informed that there were no right or wrong answers to the questions and that no one would know who they were from the answers that they gave.

Questions that the children were then asked to respond to were as follows:

'If I said that someone was CRAZY:
1. How would they act? (behaviour)
   What would they do? (behaviour)
2. What happens if someone is crazy? (consequences)
3. What makes them become crazy? (causes)
4. How long will it take for them to get better? (timeline)
5. Can they get better? (curability)
   Do they get better on their own, or do they need help to get better? (curability)

These questions were then repeated for the remaining terms ‘mad’ and ‘mentally ill’. The three terms were presented in a random order for each of the focus groups to control for order effects. Following this, children were asked whether the three terms ‘crazy’, ‘mad’ and ‘mentally ill’ were the words that they would use to describe these people, where they had ever seen these sorts of people and whether they know anyone who was mentally ill, crazy or mad.
Once children had been questioned about the three different terms, they were then asked whether they knew what it meant to have:

- Depression
- Schizophrenia
- Alzheimer's disease or dementia
- An eating disorder
- An addiction to alcohol and drugs
- Problems with anxiety

The focus groups were audio-recorded. See Appendix 1 for details of the interview schedules for Series A for each of the focus groups.

### 3.2.2 Results

The recordings were then transcribed and examined, to look for any recurring themes or trends, particularly any relating to age. As only one focus group per age group was conducted, statistical analyses were not performed.

#### 3.2.2.1 Children's responses to general terms – 'crazy'

With reference to behaviour, all three groups of children tended to describe crazy people as acting stupid, out of control, wrecking things, being over the top, wild and different (see Appendix 1, 1.5.1 for transcript).

With reference to causes, 'old' children tended to respond that 'something might have happened to them', 'they were born like it' or 'they have problems'. 'Young' and 'middle' children however, tended to respond that the person was drunk or 'on drugs'.

For consequences, the 'young' and 'middle' age group children tended to respond that the person would do silly things, fall over, pull people's hair or 'just go mental'. 'Old' children tended to think that a person who is 'crazy' would go to a mental
hospital, that people would need to try to understand them and how they feel so that they ‘can be calmed down and stopped’.

With reference to curability and timeline, ‘young’ children tended to respond that the person would have to go to the doctor and have an injection, and that the person can only sometimes get better. ‘Middle’ and ‘old’ children on the other hand tended to respond that that the person would need help and support from relatives and health professionals such as nurses and psychiatrists in order to get better. ‘Young’ and ‘middle’ children tended to provide a large number of timelines ranging from half an hour, to a day, a week and 100 years. Children from the ‘old’ age group however, tended to respond that if the person was ‘really, really ill’ then it would take ‘quite a long time for them to get better’.

3.2.2.2 Children’s responses to general terms – ‘mad’

When asked about behaviour, ‘young’ children tended to describe the person’s behaviour as more serious than the behaviour of someone who is crazy. ‘Middle’ and ‘old’ children however, tended to respond that the person who is mad would ‘act the same as someone who is crazy’ (see Appendix 1, 1.5.2 for transcript).

With reference to causes, ‘young’ children suggested that the person might ‘bang their head’, ‘copy their friend’ or they might just ‘go wacko’. ‘Old’ and ‘middle’ age group children on the other hand suggested that a person would become ‘mad’ if someone annoyed them or laughed at them.

For consequences, ‘young’ children tended to reply that the person would ‘throw themselves out of a window’, or ‘trip themselves up and bump into everything’. ‘Old’ and ‘middle’ children on the other hand tended to respond that the person would be stupid, fall down the stairs and bang their head or that the person would need to be calmed down.

When questioned about timeline and curability, ‘young’ children tended to respond that the person would not necessarily get better and that the person would have to go
and see a doctor. They did not know how long it would take someone who is ‘mad’
to get better. ‘Middle’ and ‘old’ children however, tended to offer timelines of one
or two days, suggesting that the person would need to see a psychiatrist.

3.2.2.3 Children’s responses to general terms – ‘mentally ill’
With reference to behaviour, ‘young’ children tended to respond that mentally ill
people were ‘really, really horrible’, lazy, couldn’t open their eyes, want to stay in
bed all the time and had to ‘take 100 tablets a day’. ‘Middle’ children also tended to
respond that the mentally ill would stay in bed and have to buy tablets, but they also
tended to describe them as ‘walking around funny’ and being ‘stupid’ and ‘hyper’.
‘Old’ children however, tended to respond that mentally ill people would have
memory loss and would not be able to understand when someone was talking to
them. ‘Old’ children also tended to think that mentally ill individuals do not
understand what is right from wrong and so do not know when they are ‘doing bad
things’ (see Appendix 1, 1.5.3 for transcript).

When questioned about causes, ‘young’ children tended to respond that the person
had caught it from their friend, had fallen down the stairs or been hit on the head and
developed amnesia. ‘Middle’ children tended to refer to drug use, although they also
suggested that if a close friend died that it might make someone ‘lose it’. ‘Old’
children on the other hand, suggested that people were born mentally ill, that it was
the result of taking drugs or having an accident.

For consequences, ‘young’ and ‘middle’ children appeared not to know about the
consequences of someone being ‘mentally ill’. ‘Old’ children on the other hand
tended to respond that the person ‘might not care or remember you’ and that the
person might not recognise anything.

With reference to curability and timeline, ‘middle’ and ‘old’ children seemed to
agree that people who are mentally ill might not get better, that it depended on the
quantity of drugs taken and that if they were to get better that they would have to ‘go
to hospital and stay there for a while’. ‘Young’ children on the other hand seemed
not to know whether someone who was 'mentally ill' could get better and how long it would take.

3.2.2.4 Where have you seen these sorts of people?
Children appeared mainly to have seen such individuals on television, with some suggesting a television programme named 'Bad Girls', which is a series that is set in a women's prison. Others replied that that these sorts of people could be found in London, or in 'town'.

3.2.2.5 Do you know anyone who is crazy, mad or mentally ill?
Apart from one girl in the 'old' age group, who had a cousin who had mental health problems and one of the children in the 'young' age group who stated that he had attention deficit hyperactivity disorder (ADHD), there was very limited contact with mental illness. None of the other children referred to individuals that they knew or family members who suffered from mental health problems.

3.2.2.6 Children's responses to specific diagnoses
In terms of the different diagnoses given to mental disorder, children from the 'young' age group showed very little understanding of any of the labels given, for example responding that schizophrenia is when you have chicken pox. They did however have some concept of an addiction to alcohol and drugs. The 'middle' age group children knew about what it meant to have an eating disorder and to have an addiction to alcohol and drugs. They also seemed to have some concept of the word 'depression', although the concept seemed to be more related to feeling sad, thus neglecting the severity of the condition. It was not until children were 10-11 (the 'old' age group) that they had more of an understanding of the different diagnostic labels. Children in the 'old' age group had quite clear concepts of depression, Alzheimer's disease, eating disorders and an addiction to alcohol and drugs. However, none of the children had any concept of schizophrenia, which is interesting considering that this group of individuals tend to make the headlines (see Appendix 1, 1.5.4 for transcript).
3.3 Focus Group Series B

3.3.1 Method

Series B consisted of three focus groups comprised of a combination of vignettes and questions. Children were divided into ‘young’, ‘middle’ and ‘old’ age groups as in Series A. For each of the focus groups, a vignette was first read aloud to the children, and then this was followed by a series of questions about the person described in the vignette. Children were asked about various aspects including the possible consequences for the person in the vignette, what caused the person to become like this and whether the children thought that the person was crazy, mad or mentally ill.

As in Series A, the facilitator first introduced herself and then explained that she would tell the children about a particular person and ask them some questions about that person. Children were informed that there were no right or wrong answers and that their answers would remain anonymous. Once all of the children were happy with the procedure, the facilitator read aloud the first vignette describing the symptoms of a mental illness (depression, anorexia nervosa, schizophrenia, obsessive compulsive disorder, panic disorder or dementia (Alzheimer’s type)); no diagnostic label was used. Having read aloud the vignette, children were then asked a series of questions about the person in the vignette. Questions were as follows:

1. What do you think will happen to this person? (consequences)
2. What made this person be like this? (cause)
3. How long will it take for this person to get better? (timeline)
4. Can they get better? (curability)
   - Do they get better on their own, or do they need help to get better? (curability)
5. Do you think that this person is mentally ill? (terminology/description)
   - Are they crazy? (terminology/description)
   - Do you think that they are mad? (terminology/description)

Children in each of the age groups received all of the vignettes (depression, anorexia nervosa, schizophrenia, obsessive compulsive disorder, panic disorder and dementia
The vignettes were devised according to the Diagnostic and Statistical Manual, Fourth Edition (DSM IV) (American Psychiatric Association, 1994) (see Figure 3.1), and were read out in a random order so that children in each of the focus groups were presented with a different order of mental illness diagnosis.

As stated above, children were not presented with the diagnostic labels for the mental illnesses, only the symptoms describing each mental health problem.

See Appendix 1 for details of the interview schedule for Series B.

### 3.3.2 Results

As in the case of the Series A focus groups, the group discussions in Series B were recorded and transcribed to identify recurring themes and differences between age groups.

#### 3.3.2.1 Children’s responses to causes

With reference to depression (see Appendix 1, 1.5.5.1 for transcript), ‘old’ children tended to think that the principal character might have become depressed because of bullying or because she was having trouble at work.

With reference to a diagnosis of anorexia nervosa (see Appendix 1, 1.5.5.2 for transcript), ‘young’ children tended to respond that the principal character had developed anorexia because they did not eat properly. ‘Middle’ children on the other hand tended to respond that the principal character with anorexia might have been bullied for being overweight in the past.

Similarly, ‘old’ children also tended to respond that the person with anorexia might have been teased about being overweight in the past, however they tended to reply that the person may therefore have gone on a diet and subsequently taken the diet too far. ‘Old’ children also suggested that the person with anorexia might have seen something on television, for example a thin celebrity and were trying to look like that person.
Figure 3.1: Vignettes presented to children

**Depression:**
This person feels sad all of the time and doesn’t like to do the things that they usually like to do anymore. They feel as if they have no energy and feel tired most of the time. In general they think badly of themselves and feel that they aren’t worth anything and blame themselves when things go wrong. They also find it hard to sleep.

**Anorexia Nervosa:**
This person has lost a lot of weight and because of this their life is now in danger. They are frightened of putting on weight and even though they are very thin, they still say that they are fat and need to lose more weight.

**Schizophrenia:**
This person jumbles their words and sometimes doesn’t make sense. They believe things that aren’t really true and hear voices that aren’t really there. They find it hard to look after themselves on their own, and have to be told to wash, brush their teeth and comb their hair. And they aren’t interested in doing the things that they used to like doing anymore.

**Obsessive Compulsive Disorder:**
This person keeps on having thoughts about there being germs everywhere. They think that germs are on everything that they touch and so they keep on washing their hands to get rid of the germs. If they can’t wash their hands then they get very upset because they think that the germs will make them get ill and they will die. They seem to spend almost all of their time washing their hands.

**Panic Disorder:**
This person keeps on having panic attacks, this is when their heart beats very quickly and they start to shake. They feel like they can’t breathe and think that they are going to have a heart attack and die. After they’ve had a panic attack, they worry about when they will have another one and this has stopped them from doing things that they want to do.

**Dementia (Alzheimer’s Type):**
This person finds it hard to remember things and to learn new information. They find it hard to get themselves washed and dressed in the morning and they also need help to eat, so someone has to feed them. They don’t recognise their family anymore and they need to be looked after all the time.
With reference to panic disorder, 'young' children tended to reply that the person developed panic disorder because they were overweight. 'Middle' children on the other hand, tended to respond that the person with panic disorder might have panic attacks because of worries at school. Similarly, 'old' children suggested that panic attacks might be because of anxieties that the person has.

With reference to obsessive-compulsive disorder (see Appendix 1, 1.5.5.3 for transcript), 'young' children tended to reply that the person developed obsessive-compulsive disorder because they were scared. Children in the 'old' group however, tended to attribute the obsessive-compulsive symptoms of the person in the vignette to worries or something that has happened to the person in the past such as a relative dying.

With reference to a diagnosis of dementia, 'middle' children tended to respond that the person with dementia might have had a bad accident that had caused brain damage, or that it was the way that she had been born. Similarly, 'old' children tended to reply that dementia was caused by the person having been 'hit on the head', that the principal character had a medical problem or had brain damage. Furthermore, 'old' children agreed that dementia is usually something that happens to old people.

3.3.2.2 Children's responses to consequences

With reference to depression (see Appendix 1, 1.5.5.1 for transcript), 'old' children tended to think that the individual with depression might deliberately injure herself. For anorexia nervosa (see Appendix 1, 1.5.5.2 for transcript), 'young', 'middle' and 'old' children all tended to respond that the principal character with anorexia might die. For a diagnosis of obsessive-compulsive disorder (see Appendix 1, 1.5.5.3 for transcript), one 'young' child responded that this person would develop worms that would grow out of their fingers, which the other children in the focus group agreed with. 'Young' children also tended to reply that the person with schizophrenia would have bad teeth and nits.
3.3.2.3 Children’s responses to curability and timeline

With reference to depression (see Appendix 1, 1.5.5.1 for transcript), ‘young’ children tended to respond that it would take the person with depression an hour to get better. ‘Old’ children however, suggested that in order for the person with depression to get better, she would need therapy and professional help. For anorexia nervosa (see Appendix 1, 1.5.5.2 for transcript), ‘young’ children tended to respond that it would take the person 15 minutes to recover. ‘Middle’ children on the other hand tended to reply that the person with anorexia would need ‘a lot of help and support to get better’. ‘Old’ children however, tended to respond that the person with anorexia nervosa would need to go to hospital to get better and might have to be fed intravenously, and that she would need help and support in order to recover. With reference to panic disorder, ‘young’ children tended to think that the individual with panic disorder would take either two years or 100 years to recover.

3.3.2.4 Is this person crazy, mad or mentally ill?

When questioned about depression, ‘old’ children tended to describe this person as ‘mental in the head’. ‘Young’ children tended to identify the person with anorexia nervosa as ‘a little bit mentally ill’. ‘Old’ children however, tended to not see the person with anorexia as mentally ill, but as someone who was obsessed and needed help. For panic disorder, ‘middle’ children tended to think of this person as physically ill rather than mentally ill. Similarly, ‘old’ children tended to respond that the person with panic disorder was not mentally ill but would need help to overcome her panic attacks, perhaps from a hypnotherapist. With reference to dementia, ‘middle’ children tended to respond that this person was mentally ill, but not crazy or mad.

It appeared for ‘old’ children that the rational for whether someone was mentally ill was whether children thought that the person had been born with the condition or not, and whether they thought that the illness was the person’s fault. If the person had not been born with the condition then they were not mentally ill.
3.4 Discussion

From Chapter 2, it is evident that the majority of research investigating children’s thinking about mental illness has not investigated what children understand about the terminology used to refer to mental health problems. Previous work has presented children with a range of terms, for example ‘mentally ill’, ‘emotionally disturbed’ and ‘crazy’ (Weiss, 1986; 1994), without knowledge of how children understand such words. The focus groups conducted within this study therefore aimed to establish a reliable set of comprehensible words for children regarding mental illness. They also examined children’s understanding of the terminology about mental illness from three important aspects: 1) mental illness as a general concept; 2) specific diagnostic labels used to refer to mental illness diagnoses; and 3) the behaviour of individuals with mental health problems, including causes, consequences, curability and timeline.

Although no statistical analyses were conducted owing to the small numbers of children that took part, children did have some understanding about mental illness. They also appeared to know about the behaviour of the mentally ill, including causes, consequences, curability and timeline. Furthermore, their knowledge and understanding of mental illness seemed to increase with age. The children demonstrated different understandings of the different general terms presented (‘crazy’, ‘mad’ and ‘mentally ill’), supporting a small body of research that has investigated children’s understanding of the definition of mental illness (e.g., Poster et al., 1986; Spitzer & Cameron, 1995). Children also showed different understandings of the different specific diagnoses presented, highlighting the importance of the current study.

In order to investigate children’s knowledge and understanding of the general terminology used to refer to mental illness, in the first series of focus groups children were initially asked about the behaviour of someone who is ‘crazy’, ‘mad’ or ‘mentally ill’. ‘Young’ children conceptualised these words in terms of differing degrees of severity, with ‘crazy’ being at one end of the spectrum, through ‘mad’ to
mentally ill at the other and most severe end. For example, the ‘crazy’ person was described as out of control, wild and different. This response was provided by all children to describe the behaviour of a ‘crazy’ person. However, ‘young’ children described the behaviour of a ‘mad’ person as more serious than the behaviour of a ‘crazy’ person, and described the ‘mentally ill’ individual as ‘really, really horrible’, and their behaviour as much more severe than either someone who is ‘crazy’ or ‘mad’. For example, they suggested that a mentally ill person might have to take 100 tablets a day or not be able to get out of bed. It appears that ‘young’ children make a distinction between these general terms, perceiving mental illness as the most severe. This may be because they separate the words ‘mental’ and ‘illness’, and use the word ‘illness’ to make assumptions based on some sort of sickness, children may interpret the word ‘mental’ as an indication that the sickness is serious (Spitzer & Cameron, 1995), leading them to believe that the term ‘mental illness’ is the most severe of the three terms presented.

In contrast, although ‘middle’ and ‘old’ children described the ‘crazy’ person as out of control, wild and different, as ‘young’ children did, they differed on their descriptions of ‘mad’ and ‘mentally ill’ compared to ‘young’ children. They did not perceive the three different terms in differing degrees of severity; for example, ‘middle’ and ‘old’ children described that a person who is ‘mad’ would act in a similar way to someone who is ‘crazy’. They also tended to confuse the word ‘mad’ with ‘mentally ill’ on some occasions and ‘angry’ on others. Furthermore, children from the ‘middle’ age group demonstrated a similar understanding of the term ‘mentally ill’ to children from the ‘young’ age group, tending to respond that the person would have to take tablets, would ‘walk around funny’ and would be ‘stupid’ and ‘hyper’. However, ‘old’ children demonstrated the most differentiated understanding of the different general terms. For example, when questioned about the term ‘mentally ill’ they tended to refer to an inability to comprehend speech and mental deficiencies such as memory loss. This shows a more sophisticated understanding compared to ‘young’ and ‘middle’ children.
Children were also questioned about causes, consequences, curability and timeline in relation to the general terms ‘crazy’, ‘mad’ and ‘mentally ill’ in the first series of focus groups. Similar age differences were found; older children tended to have more of an understanding of the causes, consequences, curability and timeline of the different general terms. For example, when questioned about the term ‘crazy’, ‘old’ children tended to respond that something might have happened to the person in the past, that she would need to go to a mental hospital and could get better if she went to see a psychiatrist. ‘Young’ children on the other hand tended to provide physical causes such as the person being drunk or on drugs, and describe behaviours for consequences of someone being ‘crazy’, such as falling over or pulling people’s hair. ‘Young’ children also showed less of an understanding of the length of time it would take someone who is ‘crazy’ to get better providing a wide range of timelines from half a day to 100 years.

With reference to the term ‘mad’, ‘young’ children provided physical responses, for example that the person would hurt themselves by jumping out of a window or bang their head and that they might not get better and would have to go to hospital. The responses of ‘middle’ and ‘old’ children reflected the confusion of the word ‘mad’ with meaning ‘angry’ in some cases and ‘mentally ill’ in others. For example, they tended to respond that the cause of someone being ‘mad’ was that someone may have annoyed them and that the consequences were that the person might fall down the stairs and bang their head and that they would need to be calmed down. This was also true when questioned about timeline, where ‘middle’ and ‘old’ children responded that that it would take two days for the person to recover but that they might need to see a psychiatrist.

For the term ‘mentally ill’ ‘young’ and ‘middle’ children referred to physical causes such as contagion and drug use. In comparison ‘old’ children tended to suggest that the person had been born with it or mental illness was the consequence of taking drugs or having an accident. Similarly, ‘young’ and ‘middle’ children tended to provide medicalised consequences such as having to take tablets. ‘Old’ children however tended to refer to mental deficiencies such as memory loss or an inability to
comprehend speech. Furthermore, ‘old’ and ‘middle’ children understood that a person who is mentally ill may not recover and that if recovery was possible, that it may take some time. Overall, children’s responses to the term ‘mentally ill’ were more medicalised compared to their responses to the terms ‘crazy’ and ‘mad’, suggesting that children may in fact use the word ‘illness’ as a guide indicating sickness and the word ‘mental’ to infer that the sickness was serious in nature.

The results of the second series of focus groups, whereby children were asked whether they thought that each of the individuals described in the vignettes was ‘crazy’, ‘mad’ or ‘mentally ill’, confirmed that children lack a clear understanding of the meanings of these general terms. Children of all age groups appeared to find it difficult to decide if the person was ‘crazy’, ‘mad’ or ‘mentally ill’ based on the behaviour of the individuals in the vignettes. For example, ‘middle’ children perceived the individual with dementia as ‘mentally ill’, but not ‘crazy’ or ‘mad’. Interestingly, children in the ‘old’ age group appeared to define an individual as ‘mentally ill’ where the individual had either been born with the condition or the mental illness was perceived to be that person’s fault. Although children appear to show an increase in their knowledge and understanding of these general terms with age, there is still a marked lack of a clear understanding regarding the terms ‘crazy’, ‘mad’ and ‘mentally ill’.

Children’s understanding of specific diagnostic labels also appears to vary according to their age. For example ‘young’ children showed very little understanding of the labels presented, and only seemed to have knowledge about addiction to alcohol and drugs. ‘Middle’ children on the other hand, showed knowledge of addiction to alcohol and drugs, eating disorders and depression, while ‘old’ children demonstrated a greater understanding of the diagnostic labels; they had clear concepts of addiction to alcohol and drugs, eating disorders, depression and Alzheimer’s disease. However, it was notable that children in the ‘old’ group still lacked knowledge about schizophrenia, which is interesting as it is often individuals with this diagnostic label that form the basis of the negative stereotypes of mental illness found in adults. Adult stereotypes have been linked to media reporting of the
mentally ill (Borenstein, 1992; Maclean, 1969), in particular mentally disordered offenders (Shain & Phillips, 1991) and individuals with schizophrenia (Wahl & Lefkowits, 1989); children may not be exposed to media reports of this kind and so not be influenced in the same way as adults.

The second series of focus groups presented children with a description of the behaviour of an individual with the various different types of mental illness, however no diagnostic label was given. Children were questioned about the causes, consequences, curability and timeline of the individuals in the vignettes. ‘Young’ children showed the least understanding of the characters in the vignettes compared to ‘middle’ and ‘old’ children. They tended to provide nonsensical answers for consequences and causes and inaccurate responses for timeline and curability. For example ‘young’ age group children were likely to respond that the person with obsessive-compulsive disorder would develop worms that would grow out of their fingers, that panic disorder had been caused by the person in the vignette being overweight and that it would take 15 minutes to recover from anorexia nervosa. ‘Middle’ age group children on the other hand, showed an understanding of the causes and consequences of some of the mental illnesses presented in the vignettes. For example, they tended to attribute panic attacks to worries that the person had at school, and dementia to brain damage because of a head injury or having been born with the condition. They lacked knowledge about timeline however, but understood that the people in the vignettes would need help and support in order to recover. ‘Middle’ children showed the most knowledge of anorexia nervosa, whereby they thought that the person may have been bullied in the past for being overweight, that the person might die and that the person would need help and support to get better. They did not, however, demonstrate accurate knowledge of the other mental illness diagnoses (depression, obsessive-compulsive disorder and schizophrenia).

‘Old’ children had the most sophisticated knowledge and understanding of the mental illness diagnoses. They showed an understanding of the causes and consequences of the greatest number of the mental illnesses presented. ‘Old’ children showed knowledge of depression, anorexia nervosa, obsessive-compulsive
disorder, panic attacks and dementia. For example for causes, they understood that obsessive-compulsive disorder and panic disorder were anxiety-induced. For consequences, they responded that the person with depression might injure herself and that she would need therapy and professional help, and that the person with anorexia nervosa might have to be admitted to hospital and be force-fed intravenously. With reference to timeline and curability, ‘old’ children also demonstrated the most sophisticated understanding. They offered more long-term timelines compared to ‘young’ children indicating that they understood the seriousness of these mental health problems. For example, they thought it would take the person with depression a year to recover, and that the person would need therapy and professional help. Similarly, they thought that the person with panic disorder would take two years to get better and would need to see a hypnotherapist, while the person with obsessive-compulsive disorder would take a long time to recover and would need help and support.

All children lacked a clear understanding of the mental illness diagnosis schizophrenia, which may be owing to the behaviours described in the vignette, whereby the person finds it difficult to look after herself and has to be told to wash, brush their teeth and comb their hair. Although these are included as accepted DSM IV criteria for the diagnosis of schizophrenia, as this is abnormal behaviour for an adult, these behaviours are perhaps not as surprising or abnormal to a child, who may frequently have to be told to wash, brush their teeth and comb their hair in the morning before school. This is supported by the responses of the ‘young’ children who, when asked about what would happen to the person in the vignette, thought that the person with schizophrenia would develop bad teeth and knots and nits in their hair. This may, in part, explain the lack of understanding of schizophrenia as a mental illness diagnosis demonstrated by children.

3.5 Conclusion

Children did appear to have some knowledge and understanding of mental health problems. The children demonstrated knowledge about causes, consequences,
curability and timeline, including the behaviour of the mentally ill, which seemed to increase with age. Overall, children did not hold accurate conceptions of the different general terms used to describe individuals with mental health problems that were presented. For example, children had knowledge of the term 'crazy' but children seemed to lack a clear understanding of the terms 'mad' and 'mentally ill'. In particular, the confusion of the term 'mad' with 'mentally ill' on some occasions and 'angry' on others highlights the importance of establishing the terminology to use with children in order to maintain face validity. Although some children also lacked knowledge relating to the specific mental illness diagnoses, the use of vignettes, presenting children with descriptions of the behaviours of individuals with different mental illness diagnoses enabled children of all age groups to respond to the questions about causes, consequences, curability and timeline. It appears, therefore, that it would be most beneficial for future research to utilise a combination of diagnostic labels and vignettes describing the behavioural symptoms of the mental illnesses, rather than utilising general terms such as 'crazy', 'mad' and 'mentally ill' that relate to individuals with mental health problems.
CHAPTER 4

Study 2
Children’s Knowledge and Understanding of Mental Illness:
An Exploratory Study

4.1 Introduction

Chapter 2 highlighted that previous research that has been conducted into children’s conceptions of mental illness is problematic in the approaches and methods used. The preceding study took the form of a series of focus groups in order to investigate what children know and understand about the terminology used in relation to mental illness. The focus groups revealed that children have different understandings of various terms, and that their understanding develops with age, including their understanding of the different diagnostic labels. Therefore these results provided a good grounding for further exploration of children’s knowledge and understanding of mental illness using the terminology appropriate for young children, while addressing additional problems with existing research.

As we have seen in Chapter 2, some of the limitations of earlier studies relate to the use of a Piagetian perspective, such as a domain-general stance emphasising a universal developmental progression and neglecting individual differences, and problems of verbal reporting. Therefore this study utilised an alternative approach and methodology. It employed the five-dimensional illness-understanding framework, and rejected the open-ended interviewing techniques favoured by studies within the Piagetian approach.

The methodology utilised in the present study to examine children’s conceptions of mental illness employed a series of vignettes. The ‘identity’ factor of the illness framework was embedded within the vignettes. This allowed participants to be provided with identical and accurate information about the different mental illness
diagnoses and thus avoided the problems highlighted in the focus group study, caused by children’s confusion over the terms ‘crazy’, ‘mad’ and ‘mentally ill’. Furthermore, the children in the focus group study had shown some understanding of the different diagnostic labels, and therefore vignettes describing mental illnesses using their diagnostic labels were employed in this second study. Children were then questioned about the remaining components of the illness framework, namely causes, consequences, curability and timeline and presented with a series of cards from which they had to choose their response. The responses on the cards had been generated from the large number of responses from children in the focus group study, which were analysed and categorised. This meant that children were presented with responses generated by other children of their own age. Thus the use of this semi-structured interview technique, based on the vignettes and the response cards, avoided the possible limitations caused by the verbal reporting of earlier studies.

A repeated measures design, offering vignettes about four distinct conditions, was used in order to control for individual differences in understanding; there may be variability across children and a between-subjects design might have obscured any patterns in the data. These conditions, depression, schizophrenia, anorexia nervosa and dementia, were selected from the seven mental illnesses used in the focus group study, and in the Royal College of Psychiatrists Stigma Campaign (1998-2003). It appeared, however, that the younger children in the focus group study could not cope with seven vignettes owing to their more limited attentional focus. As a result, only four mental illness diagnoses were presented to the children in the present study. The choice of the mental illness diagnoses investigated was largely dictated by the need to control for confounding effects of age and gender in the principal characters, and therefore the vignettes described an adult female. With respect to gender, a greater number of females tend to suffer from depression, anorexia nervosa and dementia (Alzheimer’s type) than males (American Psychiatric Association, 1995), and although the gender difference for schizophrenia is less clear, owing to estimates being confounded by problematic definition, it is thought that males and females are affected in roughly equal numbers. With respect to age, children and adolescents tend to suffer from different types of mental health problem compared to adults. For
example, although children can suffer from depression, anorexia nervosa is quite rare in children and more commonly found in adolescents, although the earliest reported case of anorexia nervosa was in a child of seven (Fox & Joughin, 2002). The onset of schizophrenia typically occurs between the late teens and mid-30s. Onset of schizophrenia during childhood is rare and children and adolescents do not suffer from dementia (Alzheimer’s type). This is most commonly found in adults over 65 years of age, with just a few cases developing before the age of 50. An adult, female principal character was therefore described in the vignettes.

Children were divided into three age groups, as in the focus group study: a ‘young’ group of children from school Years 1 and 2 (5-7 years of age), a ‘middle’ group of children from Years 3 and 4 (8-9 years of age) and an ‘old’ group of children from Years 5 and 6 (10-11 years of age). Children from reception class did not take part in the study owing to cognitive limitations governing their standard of literacy and the attentional focus needed for the study. Each of the principal characters in the vignettes was given a name. Four different names for the characters were used, with each child receiving all four names. This was to avoid confusion, so that it was made clear to the children that the vignettes were describing different individuals. In order to control for order effects, the order of presentation of the vignettes, the choice cards and the name of the female depicted in the vignettes were randomised for each individual child. Finally, ‘nonsense’ items were added to the choice cards, i.e., things that could in no way be the cause or the consequence of the mental illness in question. This was to monitor whether children were actually thinking about the range of choices; no children should choose these nonsense options (see Figure 4.2 for the nonsense items presented to children).

Chapter 2 also highlighted that the role of experience of illness in the formation of children’s conceptions of physical illness still lacks clarity and there is inconsistency in the findings reported in the literature. For example, some research has suggested that children’s experience of illness results in a greater understanding (Bibace & Walsh, 1981; Feldman & Varni, 1984; Rubovits & Siegel, 1994), while others have reported less sophisticated understanding where they have experience of illness.
compared to children without illness experience (Eiser et al., 1988; Nagera, 1978; Perrin et al., 1991; Shagena et al., 1988; Simeonsson et al., 1979). The present study therefore investigated whether experience of mental illness was related to children’s responses to the causes, consequences, curability and timeline of the different mental illness diagnoses presented, in order to clarify the confusion within the existing literature.

Similarly, the literature review revealed that conflicting results have been obtained with respect to the effect of gender on children’s knowledge and understanding of mental illness. Some researchers find no effect of gender (Coie & Pennington, 1976; Novak, 1974), while others report its existence. The present study therefore also investigated whether children’s responses to the causes, consequences, curability and timeline of mental illness varied as a function of their gender.

The present study therefore addressed a number of the methodological and theoretical problems with existing research discussed in Chapter 2. First, the design of the present study was guided by the results of the focus groups, in order to tackle the linguistic problems of earlier work, and to maintain face validity. Second, the study investigated children’s conceptions of mental illness from a novel conceptual perspective, through the use of the five-dimensional model of adult illness understanding put forward by Leventhal et al. Children were presented with the ‘identity’ part of the framework, for four different mental illnesses, and the study then examined whether children’s knowledge and understanding of the remaining components (causes, consequences, curability and timeline) of different types of mental illness was related to the child’s age, gender and experience of mental illness. Third, the study utilised a semi-structured interview technique and card selection tasks to address methodological problems of open-ended interviewing. The children selected their responses to the questions from a series of cards displaying a wide range of possible responses, to minimise the problems of unassisted verbal reporting. The cards had been generated on the basis of other children’s responses to vignettes and questions in the focus group study, thus ensuring that the words chosen were likely to reflect the children’s own understanding. In addition to developmental
trends, gender differences in understanding and experience of mental illness were investigated in order to try and clarify the mixed results that have been obtained by existing research.

4.2 Method

4.2.1 Design

One of the independent variables was embedded in the details of the information presented to the children in the vignettes. This was whether the principal character had a diagnosis of depression, schizophrenia, anorexia nervosa or dementia (Alzheimer’s type). This gave rise to four conditions: adult female with depression, adult female with schizophrenia, adult female with anorexia nervosa and adult female with dementia. A female was depicted in each of the vignettes in order to control for effects of gender of the principal character. The other independent variables were age and gender of the children who took part in the study. The dependent variables were: a) cause, the reasons why an illness develops; b) consequences, occurrences as a result of an illness; c) timeline, the duration of an illness; and d) curability, whether an illness is recoverable from. These were measured by children’s responses to a series of questions relating to these illness components, for example what initiated the development of the mental illness, what would happen to the principal character, how long it would take the principal character to get better, and whether they could get better. The study therefore employed a 3 (age) x 2 (gender) x 4 (mental illness) mixed design.

The aim of the study was to explore what children know and understand about the causes, consequences, curability and timeline of four different types of mental illness, and to investigate whether children’s knowledge and understanding of different types of mental illness is related to their age, gender and experience of mental illness.
4.2.2 Participants

Children were recruited from three different schools. These were Hart Hill Primary School in Luton, Bedfordshire; St Mary's Immaculate Roman Catholic Primary School in Warwick, Warwickshire; and Our Lady's Roman Catholic Primary School in Princethorpe, also in Warwickshire. In order to recruit children from these schools, a meeting was set up with each Head Teacher in order to discuss ethical issues in relation to the children taking part. The study procedure was discussed in detail with the Head Teacher, including discussion of issues relating to confidentiality and consent. With reference to confidentiality, it was explained that this would be maintained, whereby children who took part in the research would remain anonymous and that the answers that they gave would be confidential.

With respect to consent, obtaining consent from children regarding research participation can be rather more complicated than when conducting research with adult populations, as there are a number of issues that need to be taken into account. First, the issue of informed consent, and whether children can truly give informed consent, or whether it is enough for the child to give assent, whereby the child shows some form of agreement to participate, but does not necessarily comprehend the full significance of the research necessary to give informed consent. Second, when conducting research with children, the issue of parental consent arises, and whether it is needed, or whether it is sufficient for those who act in loco parentis, such as teachers, to give consent. Third, the issue of additional consent of class teachers is also required, as the impact of the children participating in the research may arise within their classroom, for example, children may have questions about some of the issues that have arisen in the study. Furthermore, there is the possibility that questioning children of primary school age about mental health problems may cause distress, in particular if they have experience of friends or relatives with mental health problems. It may also be distressing for them to realise that people can suffer from mental illness. However, the studies provide knowledge about mental health problems in a non-threatening manner, with a view to increase the children’s understanding. Nevertheless, it is therefore important for the class teacher to know the procedure of the study, including the issues to be discussed.
In the present study therefore the Head Teacher made the decision as to whether parental consent was required. If the Head Teacher deemed it necessary, a letter was sent out to parents by the school, which they were asked to sign and return to the child’s teacher (see Appendix 2 for a copy of the letter sent to parents). Before commencing an interview children were asked whether they wanted to take part and given the option of withdrawing from the study at any time. Furthermore, the researcher was sensitive to whether children appeared uncomfortable with taking part.

Overall, a total of 89 children took part. Children were divided into three groups; a ‘young’ group, which comprised of 29 children from Years 1 and 2, a ‘middle’ group of 30 children from Years 3 and 4 and an ‘old’ group of 30 children from Years 5 and 6. The study aimed for approximately equal numbers of pupils across each school year and approximately equal numbers of boys and girls (46 boys, 43 girls) (see Table 4.1).

4.2.3 Materials

The materials that were presented to each child consisted of three parts. The first part comprised a series of introductory questions, the second a vignette describing a principal character diagnosed with depression, schizophrenia, anorexia nervosa or dementia, and the third a series of questions designed to investigate four illness components (cause, consequence, timeline and curability) (see Appendix 2 for full details of the semi-structured interview schedule).

The introductory questions examined experience of mental illness, by probing the children’s possible contacts with the mental illnesses. They were: ‘do you know someone with .......... (depression, schizophrenia, anorexia nervosa, or dementia), if so, whom?’ and ‘have you been told about .......... (depression, schizophrenia, anorexia nervosa, or dementia), if so, by whom?’ This would also help to focus the child’s attention on the mental illness in question.
Table 4.1: Numbers of children who took part in the study by age group and gender

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Gender</th>
<th>N</th>
<th>Mean Age</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young (Years 1+2)</td>
<td>Girls</td>
<td>15</td>
<td>6.47</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>14</td>
<td>6.43</td>
<td>0.65</td>
</tr>
<tr>
<td>Middle (Years 3+4)</td>
<td>Girls</td>
<td>15</td>
<td>8.47</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>15</td>
<td>8.47</td>
<td>0.64</td>
</tr>
<tr>
<td>Old (Years 5+6)</td>
<td>Girls</td>
<td>13</td>
<td>10.46</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>17</td>
<td>10.53</td>
<td>0.51</td>
</tr>
</tbody>
</table>

The vignettes presented to each child provided information about a principal character diagnosed with a mental illness describing the symptoms experienced. The researcher devised the vignettes presented; symptoms were described according to the DSM IV (American Psychiatric Association, 1995). Children received all four versions of the vignettes. These varied according to independent variable manipulation, namely diagnosis. Vignettes were as follows: adult female with depression, adult female with schizophrenia, adult female with anorexia nervosa, adult female with dementia (Alzheimer’s type) (see Figure 4.1).

The third part of the study comprised of a series of ‘choice’ cards in order to inquire about four illness components (cause, consequence, timeline and curability). Overall, 38 ‘choice’ cards were used, which children had the option of accepting or rejecting (see Figure 4.2). There were seven timeline/curability cards ranging from ‘1 day’ to ‘never’. Sixteen cards presented actions and situations that may initiate the development of the mental illness, these included ‘catching it from someone’ and ‘being born like it’. Finally, fifteen consequences cards provided possible outcomes of mental illness, for example ‘see a psychiatrist’ and ‘do silly things’.
**Figure 4.1: Vignettes presented to children**

**Depression:**
This is about a woman called* ...... She has got Depression. This means that she feels sad all of the time and doesn't like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn't worth anything and blames herself when things go wrong. She also finds it hard to sleep.

**Schizophrenia:**
This is about a woman called* ...... She has got Schizophrenia. This means that she jumbles her words and sometimes doesn't make sense. She believes things that aren't really true and hears voices that aren't really there. These are called delusions and hallucinations. She finds it hard to look after herself on her own, and has to be told to wash, brush her teeth and comb her hair. She isn't interested in doing things that she used to like doing anymore.

**Anorexia Nervosa:**
This is about a woman called* ...... She has got Anorexia Nervosa. This means that she has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

**Dementia (Alzheimer's Type):**
This is about a woman called* ...... She has got Dementia. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn't recognize her family anymore and needs to be looked after all the time.

*The names Jane, Sarah, Ann and Mary were chosen at random by the researcher in order to control for effects as a result of the name given to the principal character in the vignette and to make it clear that each vignette described a different individual.

The cards that were presented to the children each measured 12cm in length and 6cm in width. Words contained on the cards were typed in capital letters in a clear bold
black font. Results were documented on record sheets in order to allow efficient notation (see Appendix 2 for a copy of the recording sheet utilised).

In addition, there were 7 cards that were not presented to the children but utilised by the experimenter to determine the order of presentation of mental illness type; depression, schizophrenia, anorexia nervosa and dementia (Alzheimer's type) and the order of questioning relating to the illness components; timeline/curability, cause and consequence.

4.2.4 Procedure
Card presentation was randomly ordered to control possible order effects, and effects of fatigue; the order of the four cards relating to mental illness diagnosis (depression, schizophrenia, anorexia nervosa and dementia), the four associated factors being assessed (timeline, curability, cause, consequence), and the 'choice' cards of the child. All cards were therefore shuffled by the researcher prior to the commencement of each interview allowing for each child to be presented with a new, randomly ordered set of cards.

Children were interviewed individually in order to avoid dominance effects from other more confident children. Each child was then informed that he/she would be presented with a number of vignettes describing a person diagnosed with a mental disorder and the symptoms experienced, and that this would be followed by a series of questions concerning the person described in the vignette. Children were also assured of anonymity and informed that the majority of questions would allow more than one answer, so children were able to choose whichever cards they felt to be right. It was pointed out that there were no right or wrong answers.

The order of presentation of mental illness and illness component cards was determined randomly as described above. Once determined, each section of the interview began with a series of introductory questions, the reason for which was to examine children's experience of the mental illness conditions and to focus the child's attention to each particular mental illness.
Figure 4.2: Choice cards presented the children

<table>
<thead>
<tr>
<th>Timeline/Curability:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 day</td>
<td>6 months</td>
<td>1 year</td>
</tr>
<tr>
<td>1 week</td>
<td></td>
<td>Never</td>
</tr>
<tr>
<td>2 weeks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 month</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Causes:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>She banged her head</td>
<td>She had an accident</td>
<td></td>
</tr>
<tr>
<td>She took drugs</td>
<td>She caught it from someone</td>
<td></td>
</tr>
<tr>
<td>She drank too much alcohol</td>
<td>She worries too much about things</td>
<td></td>
</tr>
<tr>
<td>Someone she was close to has died</td>
<td>She doesn’t eat properly</td>
<td></td>
</tr>
<tr>
<td>Something happened to her in the past</td>
<td>She saw something on television</td>
<td></td>
</tr>
<tr>
<td>She was born like it</td>
<td>She has no friends</td>
<td></td>
</tr>
<tr>
<td>She was being bullied</td>
<td>Someone in her family is like it</td>
<td></td>
</tr>
<tr>
<td>She has brain damage</td>
<td>She ate too many sweets*</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consequences:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>She will go to a mental hospital</td>
<td>She will have to go to hospital</td>
<td></td>
</tr>
<tr>
<td>She will knock things over</td>
<td>She will stay in bed</td>
<td></td>
</tr>
<tr>
<td>She will do silly things</td>
<td>She will lose her friends</td>
<td></td>
</tr>
<tr>
<td>She will draw on the wall</td>
<td>She will need help and support from her relatives</td>
<td></td>
</tr>
<tr>
<td>She will die</td>
<td>She will see a psychiatrist</td>
<td></td>
</tr>
<tr>
<td>She will see a doctor</td>
<td>She will go to hospital and have surgery</td>
<td></td>
</tr>
<tr>
<td>She will have therapy</td>
<td>She will go shopping*</td>
<td></td>
</tr>
<tr>
<td>She will have to take some tablets</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Nonsense items included.

All answers were documented on a recording sheet. Having asked the introductory questions, children were then read a vignette describing an adult female diagnosed with the first mental illness (depression, schizophrenia, anorexia nervosa or dementia) and the symptoms that they experience. Children were then presented
with a series of questions inquiring about the cause, consequence, timeline and curability of the mental illness presented in the vignette. Again the order of the illness component cards was random.

Cause was inquired about by asking 'how did this person get .......... (depression, schizophrenia, anorexia nervosa, or dementia)’? The first cause card was then shown to the child and read aloud. The child was instructed to say whether they thought that it might have caused the person to get the particular mental illness by answering 'yes' or 'no'. Cards that were accepted were placed upright in front of the child, and rejected cards put aside. Once all of the cause cards had been accepted or rejected, the child was reminded of what they had chosen and each accepted card pointed to and read aloud again. Children were asked which of the cards was the most likely one. The chosen card was then recorded. Choosing cards in this way was judged to be less daunting for the children than looking at the cards altogether.

The consequence section inquired ‘what will happen to this person because they have .......... (depression, schizophrenia, anorexia nervosa, or dementia)?’ and again a similar procedure was undertaken as the cause section in order to obtain the most likely consequence for each of the mental illness diagnoses.

The cards for the timeline and curability section were all placed upright in front of the child in order of length. The child was then asked 'how long do you think it will take this person to get better?' Although curability and timeline are presented as two distinct components of the adult illness-understanding framework, operationally they were treated together in the present study. As a result, children were presented with seven cards ranging from 'less than 1 month' to 'never'. All cards were placed upright in front of the child in order of length and the child encouraged to choose just one card. This process was repeated for each of the mental illness diagnoses. Any child who was noted to have difficulties with reading was given assistance when judged necessary.
4.3 Results

Children’s responses to causes and consequences were first analysed using hi log linear analysis to examine whether age, gender and experience of mental illness were associated with their responses. These data were also analysed using correspondence analysis to further investigate age and gender trends, in order to obtain a more holistic view. Correspondence analysis was employed in order to avoid the risk of making a Type I Error where multiple tests are carried out. Correspondence analysis avoids this by enabling a single multivariate analysis to investigate how sets of categorical data relate to each other, instead of having to perform multiple single tests. Children’s responses to curability and timeline were analysed using hi log linear analysis to assess whether categories of responses were associated with age, gender and experience of mental illness.

4.3.1 Causes and consequences (hi log linear analysis)

There were no significant associations with the children’s personal experience of mental illness for causes or consequences so only results with respect to age and gender are reported here.

4.3.1.1 Causes associated with age group

Significant effects associated with age were found for depression, schizophrenia, anorexia nervosa and dementia (see Tables 4.2-4.5 for details). With reference to depression (see Table 4.2), children from the ‘young’ age group were more likely to choose ‘no friends’ compared to children from the ‘middle’ age group. For anorexia nervosa (see Table 4.3), ‘young’ children were more likely to choose ‘took drugs’ compared to ‘old’ children, while ‘old’ children were more likely to choose ‘she doesn’t eat properly’ as the cause for anorexia nervosa compared to ‘young’ children. With reference to schizophrenia (see Table 4.4), children from the ‘old’ age group were more likely to choose ‘took drugs’ compared to children from the ‘middle’ age group, while children from the ‘middle’ age group were more likely to choose ‘had an accident’ as the cause of schizophrenia compared to ‘young’ and ‘old’ children. For a diagnosis of dementia (see Table 4.5), ‘young’ children were more likely than
‘old’ children to choose brain damage, while ‘old’ children were more likely to respond that the principal character with dementia had been born with it than ‘young’ children.

4.3.1.2 Consequences associated with age group

Significant effects associated with age were found for schizophrenia, anorexia nervosa and dementia (see Tables 4.6-4.8 for details), but not for depression (see Table 4.9). With reference to schizophrenia (see Table 4.6), ‘middle’ children were more likely to respond that the principal character would lose her friends compared to ‘young’ and ‘old’ children. ‘Young’ children however were more likely to respond that the principal character would have to take tablets compared to ‘middle’ and ‘old’ children. ‘Old’ children on the other hand thought it more likely that the principal character with schizophrenia would have to see a psychiatrist than ‘young’ children. For anorexia nervosa (see Table 4.7), ‘old’ children thought it more likely than ‘young’ children that the principal character would need to go and see a doctor, while ‘young’ children thought it more likely than ‘old’ children that the principal character would need to have an operation. For dementia (see Table 4.8), ‘middle’ children were more likely to choose ‘will die’ as a consequence compared to ‘old’ children. No significant associations of age were found for depression, however the frequencies show that older children tended to chose ‘help and support’ and ‘see a psychiatrist’ compared to younger children, who tended to choose ‘take tablets’ (see Table 4.9).

4.3.1.3 Causes associated with gender

Significant effects associated with gender were found for depression and schizophrenia (see Tables 4.10-4.11 for details). For depression (see Table 4.10), girls were more likely to choose ‘worries about things too much’ compared to boys. With reference to schizophrenia (see Table 4.11), girls were more likely to choose ‘something happened in the past’ than boys.
4.3.1.4 Consequences associated with gender

Significant effects associated with gender were found for schizophrenia and dementia (see Tables 4.12-4.13 for details). For a diagnosis of schizophrenia (see Table 4.12), girls were more likely than boys to choose 'help and support' and 'see a psychiatrist', whereas boys were more likely to choose 'lose her friends' as a consequence compared to girls. For dementia (see Table 4.13), girls were more likely to choose 'go to a mental hospital' compared to boys, whereas boys were more likely to choose 'do silly things' than girls as consequences.

4.3.2 Causes and consequences (correspondence analysis)

Correspondence analyses were conducted in order to obtain a more holistic view of the patterns of linked responses concerning causes and consequences of each of the mental illnesses. The correspondence analysis examined trends according to age and gender. Experience was not included in the correspondence analysis as the hi log linear analysis had revealed no significant associations of experience of mental illness with causes or consequences. Children’s responses were first analysed for age differences, followed by an analysis of differences according to age and gender.

Correspondence analysis is a multi-dimensional method for analysing categorical data (Hammond, 1993). Correspondence analysis provides a pictorial representation of the relationship between groups of participants and the responses that are most closely associated with those groups through the use of well-established geometric principles. A graphical representation is produced that represents the degree of association between a particular group of participants and a particular response. Thus, those responses that are most exclusively associated with particular age groups and gender can be revealed using this method. This enables a detailed explanation of children’s understanding of categories, in this case causes and consequences of different mental illness diagnoses, with respect to the children’s age and gender. The first dimension is the horizontal, so that the most discriminating responses for dimension one are found to the extreme left and extreme right of each plot. Dimension two is the vertical and the most discriminating responses on this dimension are found to the extreme top and bottom of the plot. However, only one of the analyses produced a second dimension (see Figure 4.12).
Table 4.2: Cause for depression analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Something happened in the past</th>
<th>Drank too much alcohol</th>
<th>Born like it</th>
<th>Took drugs</th>
<th>Being bullied</th>
<th>Brain damage</th>
<th>Someone close to died</th>
<th>Caught it</th>
<th>Had an accident</th>
<th>No friends</th>
<th>Worries too much</th>
<th>Saw something on TV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>Middle</td>
<td>7</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Old</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>9</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>1</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>4</td>
<td>21</td>
<td>2</td>
<td>3</td>
<td>13</td>
<td>9</td>
<td>3</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (30) = 49.94$ p $< 0.05$

Post hoc $\chi^2$ tests: (1) No friends Young vs Middle sig: $z^1 (1) = 2.3$, p $< 0.01$

No other paired comparisons significant.

---

$^1$ Fisher exact probability tests were conducted instead of chi-square tests when expected frequencies were too low to permit a chi-square test.
Table 4.3: Cause for anorexia nervosa analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>S-thing happened in the past</th>
<th>Drank too much alcohol</th>
<th>Born like it</th>
<th>Banged head</th>
<th>Took drugs</th>
<th>Brain damage</th>
<th>S-one close to died</th>
<th>Caught it</th>
<th>Doesn’t eat properly</th>
<th>Had an accident</th>
<th>Worries too much</th>
<th>S-one in family like it</th>
<th>Saw s-thing on TV</th>
<th>Ate too many sweets</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td>Young</td>
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<td>1</td>
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<td>8</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>Middle</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>16</td>
<td>1</td>
<td>0</td>
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</tr>
<tr>
<td>Old</td>
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<td>0</td>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>9</td>
<td>2</td>
<td>4</td>
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<td>47</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (30) = 62.86, p < 0.01$

Post hoc $\chi^2$ tests:

1. Took drugs
   Young vs Old sig: $z (1) = 2.2, p < 0.05$

2. Doesn’t eat properly
   Old vs Young sig: $\chi^2 (1) = 12.3, p < 0.01$

No other paired comparisons significant.
Table 4.4: Cause for schizophrenia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>S-thing happened in the past</th>
<th>Drank too much alcohol</th>
<th>Born head</th>
<th>Banged head</th>
<th>Took drugs</th>
<th>Being bullied</th>
<th>Brain damage</th>
<th>S-one close to died</th>
<th>Caught it</th>
<th>Had an accident</th>
<th>No friends</th>
<th>Worries too much</th>
<th>S-one in family like it</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>6</td>
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<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Middle</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>30</td>
</tr>
<tr>
<td>Old</td>
<td>5</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>5</td>
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<td>10</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
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<td>14</td>
<td>6</td>
<td>8</td>
<td>2</td>
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<td>2</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (30)= 49.81, p < 0.05$

Post hoc $\chi^2$ tests:
1. Took drugs
2. Had an accident

Old vs Middle sig: $z (1)= 1.9, p < 0.05$
Middle vs Young sig: $z (1)= 1.8, p < 0.05$
Middle vs Old sig: $z (1)= 1.9, p < 0.05$

No other paired comparisons significant.
Table 4.5: Cause for dementia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Something happened in the past</th>
<th>Born like it</th>
<th>Banged head</th>
<th>Took drugs</th>
<th>Brain damage</th>
<th>S-one close to died</th>
<th>Caught it</th>
<th>Doesn’t eat properly</th>
<th>Had an accident</th>
<th>No friends</th>
<th>Saw something on TV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>7</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>12</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Middle</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>Old</td>
<td>3</td>
<td>9</td>
<td>8</td>
<td>1</td>
<td>4</td>
<td>1</td>
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<td>3</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (30) = 44.91$, $p < 0.05$

Post hoc $\chi^2$ tests:
1) Born like it  
   Old vs Young sig: $z (1) = 2.4$, $p < 0.01$
2) Brain Damage  
   Young vs Old sig: $\chi^2 (1) = 4.5$, $p < 0.05$

No other paired comparisons significant.
Table 4.6: Consequence for schizophrenia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Do silly things</th>
<th>Will die</th>
<th>Knock things over</th>
<th>Draw on the wall</th>
<th>Go to a mental hospital</th>
<th>Lose her friends</th>
<th>Go to hospital</th>
<th>Help and support</th>
<th>Stay in bed</th>
<th>Take tablets</th>
<th>Have therapy</th>
<th>See a doctor</th>
<th>See a psychiatrist</th>
<th>Have an operation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>7</td>
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<td>4</td>
<td>29</td>
</tr>
<tr>
<td>Middle</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>2</td>
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<td>30</td>
</tr>
<tr>
<td>Old</td>
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<td>0</td>
<td>0</td>
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<td>3</td>
<td>3</td>
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<td>0</td>
<td>3</td>
<td>2</td>
<td>7</td>
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</tr>
<tr>
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<td>11</td>
<td>5</td>
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<td>3</td>
<td>4</td>
<td>11</td>
<td>7</td>
<td>89</td>
<td></td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (28) = 67.41, p < 0.01$

Post hoc $\chi^2$ tests:
1. Lose friends
   - Middle vs Young sig: $z (1) = 1.8, p < 0.05$
   - Middle vs Old sig: $z (1) = 1.9, p < 0.05$
2. Take tablets
   - Young vs Middle sig: $z (1) = 1.9, p < 0.05$
   - Young vs Old sig: $z (1) = 1.9, p < 0.05$
3. See a psychiatrist
   - Old vs Young sig: $z (1) = 1.8, p < 0.05$

No other paired comparisons significant.
<table>
<thead>
<tr>
<th>Age Group</th>
<th>Do silly things</th>
<th>Will die</th>
<th>Knock things over</th>
<th>Draw on the wall</th>
<th>Go to a mental hospital</th>
<th>Go to hospital</th>
<th>Help and support</th>
<th>Stay in bed</th>
<th>Take tablets</th>
<th>Have therapy</th>
<th>See a doctor</th>
<th>Go shopping</th>
<th>See a psychiatrist</th>
<th>Have an operation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
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<td>5</td>
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<td>5</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>4</td>
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<td>5</td>
</tr>
<tr>
<td>Middle</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Old</td>
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<td>12</td>
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<td>0</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
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<td>11</td>
<td>4</td>
<td>1</td>
<td>2</td>
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<td>3</td>
<td>25</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (28) = 49.18$, $p < 0.01$

Post hoc $\chi^2$ tests:
1. See a doctor
   - Old vs Young sig: $\chi^2 (1) = 3.9$, $p < 0.05$
2. Have an operation
   - Young vs Old sig: $z (1) = 1.9$, $p < 0.05$

No other paired comparisons significant.
Table 4.8: Consequence for dementia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Do silly things</th>
<th>Will die</th>
<th>Knock things over</th>
<th>Go to a mental hospital</th>
<th>Lose her friends</th>
<th>Go to hospital</th>
<th>Help and support</th>
<th>Stay in bed</th>
<th>Take tablets</th>
<th>Have therapy</th>
<th>See a doctor</th>
<th>Go shopping</th>
<th>See a psychiatrist</th>
<th>Have an operation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
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<td>2</td>
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<td>3</td>
<td>2</td>
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<td>0</td>
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<td>5</td>
</tr>
<tr>
<td>Middle</td>
<td>4</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>4</td>
<td>0</td>
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<td>0</td>
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<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Old</td>
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<td>0</td>
<td>6</td>
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<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
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<td>9</td>
<td>1</td>
<td>11</td>
<td>2</td>
<td>11</td>
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<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (28) = 45.55$, $p < 0.05$

Post hoc $\chi^2$ tests: (1) Will die

Middle vs Old sig: $z (1) = 1.9$, $p < 0.05$

No other paired comparisons significant.
Table 4.9: Consequence for depression analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Do silly things</th>
<th>Will die</th>
<th>Knock things over</th>
<th>Draw on the wall</th>
<th>Go to a mental hospital</th>
<th>Lose her friends</th>
<th>Go to hospital</th>
<th>Help and support</th>
<th>Stay in bed</th>
<th>Take tablets</th>
<th>See a doctor</th>
<th>Go shopping</th>
<th>See a psychiatrist</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>Middle</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>5</td>
<td>30</td>
</tr>
<tr>
<td>Old</td>
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<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>11</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
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<td>5</td>
<td>4</td>
<td>8</td>
<td>7</td>
<td>9</td>
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<td>2</td>
<td>12</td>
<td>8</td>
<td>2</td>
<td>10</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear effect of age not significant
Table 4.10: Cause for depression analysed by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>S-thing happened in the past</th>
<th>Drank too much alcohol</th>
<th>Born like it</th>
<th>Took drugs</th>
<th>Being bullied</th>
<th>Brain damage</th>
<th>S-one close to died</th>
<th>Caught it</th>
<th>Had an accident</th>
<th>No friends</th>
<th>Worries too much</th>
<th>Saw s-thing on TV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>7</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Boys</td>
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<td>3</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
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<td>5</td>
<td>8</td>
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<td>4</td>
<td>21</td>
<td>2</td>
<td>3</td>
<td>13</td>
<td>9</td>
<td>3</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of gender: $\chi^2 (15) = 27.12, p < 0.05$

Post hoc $\chi^2$ tests: (1) Worries too much Girls vs Boys sig: $z (1) = 2.2, p < 0.05$

No other paired comparisons significant.

Table 4.11: Cause for schizophrenia analysed by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>S-thing happened in the past</th>
<th>Drank too much alcohol</th>
<th>Born like it</th>
<th>Banged head</th>
<th>Took drugs</th>
<th>Being bullied</th>
<th>Brain damage</th>
<th>S-one close to died</th>
<th>Caught it</th>
<th>Had an accident</th>
<th>No friends</th>
<th>Worries too much</th>
<th>S-one in family like it</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>10</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>10</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>Boys</td>
<td>3</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>17</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>2</td>
<td>14</td>
<td>6</td>
<td>8</td>
<td>2</td>
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<td>3</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of gender: $\chi^2 (15) = 26.82, p < 0.05$

Post hoc $\chi^2$ tests: (1) S-thing happened in the past Girls vs Boys sig: $\chi^2 (1) = 3.7, p < 0.1$

No other paired comparisons significant.
**Table 4.12:** Consequence for schizophrenia analysed by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Do silly things</th>
<th>Will die</th>
<th>Knock things over</th>
<th>Draw on the wall</th>
<th>Go to a mental hospital</th>
<th>Lose her friends</th>
<th>Go to hospital</th>
<th>Help and support</th>
<th>Stay in bed</th>
<th>Take tablets</th>
<th>Have therapy</th>
<th>See a doctor</th>
<th>See a psychiatrist</th>
<th>Have an operation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>12</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>9</td>
<td>3</td>
<td>43</td>
</tr>
<tr>
<td>Boys</td>
<td>10</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>11</td>
<td>5</td>
<td>5</td>
<td>14</td>
<td>1</td>
<td>5</td>
<td>3</td>
<td>4</td>
<td>11</td>
<td>7</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of gender: $\chi^2 (14) = 41.55, p < 0.01$

Post hoc $\chi^2$ tests:
1. Lose friends: Boys vs Girls sig: $z (1) = 1.8, p < 0.05$
2. Help and support: Girls vs Boys sig: $\chi^2 (1) = 7.6, p < 0.01$
3. See a psychiatrist: Girls vs Boys sig: $\chi^2 (1) = 4.2, p < 0.05$

No other paired comparisons significant.

**Table 4.13:** Consequence for dementia analysed by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Do silly things</th>
<th>Will die</th>
<th>Knock things over</th>
<th>Go to a mental hospital</th>
<th>Lose her friends</th>
<th>Go to hospital</th>
<th>Help and support</th>
<th>Stay in bed</th>
<th>Take tablets</th>
<th>Have therapy</th>
<th>See a doctor</th>
<th>Go shopping</th>
<th>See a psychiatrist</th>
<th>Have an operation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td>8</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Boys</td>
<td>11</td>
<td>5</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>5</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>9</td>
<td>1</td>
<td>11</td>
<td>2</td>
<td>11</td>
<td>15</td>
<td>2</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>10</td>
<td>89</td>
</tr>
</tbody>
</table>

Log linear significant effect of gender: $\chi^2 (14) = 28.70, p < 0.05$

Post hoc $\chi^2$ tests:
1. Do silly things: Boys vs Girls sig: $\chi^2 (1) = 7.1, p < 0.01$
2. Go to a mental hospital: Girls vs Boys sig: $\chi^2 (1) = 4.2, p < 0.05$

No other paired comparisons significant.
Responses found clustered between the groups are non-discriminating and are 'made' or 'not made' by similar numbers of children in all groups. Points on the graphs that are not labeled represent these non-discriminating items.

In order to avoid low frequency responses biasing the analyses, cards were only included in the analysis if at least 20% of children in one age group had chosen them. This led to the omission for example, of the ‘she banged her head’ card in the analysis of the cause of depression as only 10.3% of children from the ‘young’ age group, 6.7% from the ‘middle’ age group and 6.7% from the ‘old’ age group chose the card as a probable cause for depression. Again, for the consequences of anorexia nervosa, the card ‘she will draw on the wall’ was omitted as only 6.9% of children from the ‘young’ age group, 6.7% from the ‘middle’ age group and 0% from the ‘old’ age group selected the card as a probable consequence of being diagnosed with anorexia nervosa.

4.3.2.1 Causes associated with age group

Responses across age groups were distinct for depression, anorexia nervosa and dementia (see Figures 4.3-4.5). For schizophrenia however, the correspondence analysis gave a non-significant result indicating that children’s responses lacked distinctiveness across age groups.

For depression (see Figure 4.3), ‘young’ children were more likely to understand the disorder as being caused by brain damage or by catching it from someone. In comparison ‘middle’ and ‘old’ children were more likely to attribute depression to being bullied, someone dying or related to drugs. With reference to anorexia nervosa (see Figure 4.4), ‘young’ children were more likely to respond that it could be caused by having brain damage, catching it from someone or having no friends, whereas ‘old’ children were more likely to attribute anorexia nervosa to worrying about things too much and being bullied. For a diagnosis of dementia (see Figure 4.5), ‘young’ children were more likely to say that the person caught it from someone or that something happened in the past, whereas ‘old’ children were more likely to reply that the person had had an accident or had been born with it. For schizophrenia,
children’s responses were not distinct as a function of age. Children were most likely to attribute schizophrenia to having brain damage, something happening in the past, or being born like it (see Table 4.4).

4.3.2.2 Consequences associated with age group
Responses across age groups were distinct for depression, schizophrenia, anorexia nervosa and dementia (see Figures 4.6-4.9). ‘Young’ children were more likely to respond that someone with depression (see Figure 4.6) would have to have an operation and would draw on the wall, whereas ‘old’ children were more likely to believe that the principal character would need help and support from relatives and have therapy. With reference to schizophrenia (see Figure 4.7), ‘old’ children were more likely to think that the principal character would knock things over, need to have therapy and see a psychiatrist. ‘Middle’ children however, were more likely to say that the principal character would go to hospital, have an operation and lose her friends. ‘Old’ children were more likely to respond that a person with anorexia nervosa (see Figure 4.8) might die and would do silly things, whereas ‘middle’ and ‘young’ children were more likely to think that the principal character would knock things over, stay in bed and go to a mental hospital. For a diagnosis of dementia (see Figure 4.9), ‘old’ children were more likely to think that the principal character would do silly things, knock things over, need to see a doctor and stay in bed, whereas ‘young’ children were more likely to believe that the person would have to have an operation and see a psychiatrist.

4.3.2.3 Causes associated with age group and gender
Responses associated with gender were distinct for depression and dementia (see Figures 4.10-4.11), indicating that boys and girls gave different responses in respect to the causes of depression and dementia. For schizophrenia and anorexia nervosa however, the correspondence analyses gave a non-significant result indicating that responses lacked distinctiveness according to gender. Girls and boys attributed different causes to depression (see Figure 4.10). ‘Young’ girls were more likely to understand depression as being caused by having no friends, whereas ‘middle’ boys were more likely to attribute depression to being related to drugs. For dementia (see
Figure 4.11), girls from all age groups and ‘old’ boys were more likely to think it was the result of an accident or an injury to the head, while ‘middle’ and ‘young’ boys were more likely to think it related to drugs or a past event. Boys and girls were not distinct in their responses to the causes of schizophrenia or anorexia nervosa. For schizophrenia, they believed that something had happened in the past, that the principal character had brain damage, or been born like it (see Table 4.11). Boys and girls attributed anorexia nervosa to something having happened to the principal character in the past.

4.3.2.4 Consequences according to age group and gender

Responses associated with gender were distinct for anorexia nervosa (see Figure 4.12). For depression, schizophrenia and dementia however, the correspondence analyses indicated that responses lacked distinctiveness according to gender. A two-dimensional solution was found in the analysis for anorexia nervosa (see Figure 4.12). The first dimension distinguished the thinking of ‘young’ boys from ‘old’ boys; ‘young’ boys were more likely to think that the principal character would stay in bed, whereas the ‘old’ boys were more likely to believe that she would do silly things. The second dimension revealed that the ‘old’ and ‘middle’ girls were distinct in their thinking about the consequences of anorexia nervosa. They were more likely to believe that the principal character would need to have therapy, compared to ‘young’ and ‘middle’ boys, who were more likely to believe that the principal character would have to have an operation, do silly things and go to a mental hospital.

Boys and girls were not distinct in their responses to the consequences of depression, schizophrenia or dementia. For depression they thought that the principal character would lose their friends and have to see a psychiatrist. For schizophrenia, they believed that the principal character would have to go to a mental hospital, do silly things, need help and support and see a psychiatrist (see Table 4.12). For dementia, boys and girls believed that the principal character would have to go to hospital, would do silly things, would go to a mental hospital and would need help and support from her relatives (see Table 4.13).
Figure 4.3: Responses concerning the causes of depression across age groups

Dimension 1: inertia = 74.00%, $\chi^2 = 40.51$, df = 13, p < 0.01
Figure 4.4: Responses concerning the causes of anorexia nervosa across age groups

R3

C2
Middle Group

R4

R8

R1
C1
Young Group

R2
R11 Worries too much
C3
Old Group
R5 Being bullied

R10
Has no friends

R6 Brain damage

R7 Caught it from someone

Dimension 1: inertia = 87.92%, $\chi^2 = 32.66$, df = 13, p < 0.01
**Figure 4.5:** Responses concerning the causes of dementia across age groups

Dimension 1: inertia = 89.49%, $\chi^2 = 18.76$, df = 10, p < 0.05
Figure 4.6: Responses concerning the consequences of depression across age groups

R10  Have therapy

C3  Old group
R12  R5
R7  Need help and support from relatives
R1  R9

C1  Young group
R3  Draw on the wall
R13  Have an operation

C2  Middle group
R2  R4
R6

Dimension 1: inertia = 81.25%, $\chi^2 = 30.92$, df = 14, p < 0.05
**Figure 4.7:** Responses concerning the consequences of schizophrenia across age groups

<table>
<thead>
<tr>
<th>R1</th>
<th>Have an operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Young Group</td>
</tr>
<tr>
<td>R2</td>
<td></td>
</tr>
<tr>
<td>R3</td>
<td></td>
</tr>
<tr>
<td>R4</td>
<td>Lose her friends</td>
</tr>
<tr>
<td>C2</td>
<td>Middle Group</td>
</tr>
<tr>
<td>R5</td>
<td>Go to hospital</td>
</tr>
<tr>
<td>R6</td>
<td></td>
</tr>
<tr>
<td>R7</td>
<td></td>
</tr>
<tr>
<td>R8</td>
<td></td>
</tr>
<tr>
<td>R9</td>
<td>Have therapy</td>
</tr>
<tr>
<td>R10</td>
<td></td>
</tr>
</tbody>
</table>

**Dimension 1:** inertia = 79.04%, \(\chi^2 = 38.48\), df = 13, p < 0.01
Figure 4.8: Responses concerning the consequences of anorexia nervosa across age groups

Dimension 1: inertia = 62.74%, \( \chi^2 = 26.00 \), df = 13, p < 0.05
Figure 4.9: Responses concerning the consequences of dementia across age groups

Old group

R1: Do silly things

R2: See a psychiatrist

R3: Knock things over

R4: Middle group

R5: See a doctor

R6: Stay in bed

R7: Have an operation

R8: Dimension 1: inertia = 76.72%, $\chi^2 = 27.35$, df = 14, $p < 0.05$
Figure 4.10: Responses concerning the causes of depression according to age group and gender

Dimension 1: inertia = 42.97%, $\chi^2 = 22.42$, df = 13, p < 0.05
Figure 4.11: Responses concerning the causes of dementia according to age group and gender

Dimension 1: inertia = 61.30%, $\chi^2 = 27.36$, df = 12, p < 0.01
Figure 4.12: Responses concerning the consequences of anorexia nervosa according to age group and gender

- **R1**: Do silly things
- **R3**: Go to a mental hospital
- **R7**: Have an operation
- **R9**: C6
- **R4**: Have therapy
- **C2**: Young Girls
- **C5**: Old Boys
- **C3**: Middle Boys
- **C1**: Young Boys

Dimension 1: inertia = 47.81%, $\chi^2 = 34.48$, df = 15, p < 0.01
Dimension 2: inertia = 32.41%, $\chi^2 = 23.01$, df = 13, p < 0.05
4.3.3 Timeline and curability

Results for curability and timeline were analysed using hi log linear analysis to assess whether categories of response were significantly associated with the children’s age, gender or experience of someone with a mental illness diagnosis. For the purpose of analysis, the seven curability/timeline categories were collapsed into four. This reflected the pattern of choices as children did not choose all categories and illnesses lasting less than one month are temporary in nature. Children’s responses to ‘1 day’, ‘1 week’, ‘2 weeks’ and ‘1 month’ were pooled into one category entitled ‘less than 1 month’. The four categories for the purpose of analysis were therefore ‘less than 1 month’, ‘6 months’, ‘1 year’ and ‘never’.

There were no significant associations with either gender or experience of a person with a mental illness for any of the analyses for curability and timeline, therefore only responses with respect to age are reported here. Significant effects associated with age were found for depression, schizophrenia and dementia (see Tables 4.14-4.16 for details), but not for anorexia nervosa (see Table 4.17).

With respect to depression (see Table 4.14), children from the ‘middle’ age group were more likely to choose ‘less than 1 month’ as a recovery time for depression compared to children from the ‘old’ age group, while ‘old’ children were more likely to choose ‘1 year’ than ‘young’ children.

Table 4.14: Timeline for depression analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>6 months</th>
<th>1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>9</td>
<td>7</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Middle</td>
<td>12</td>
<td>5</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Old</td>
<td>4</td>
<td>12</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>24</td>
<td>29</td>
<td>11</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (6)= 23.57, p < 0.01$

Post hoc $\chi^2$ tests:

1. Less than 1 month vs Middle vs Old: $\chi^2 (1)= 4.18, p < 0.05$
2. 1 year Old vs Young: $\chi^2 (1)= 4.58, p < 0.05$

No other paired comparisons significant.
For the principal character diagnosed with schizophrenia (see Table 4.15), children from the ‘middle’ age group were more likely to choose ‘less than 1 month’ as a recovery time than children from the ‘old’ age group. ‘Old’ children chose ‘never’ more frequently than children from both the ‘young’ age group and children from the ‘middle’ age group.

Table 4.15: Timeline for schizophrenia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>6 months</th>
<th>1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>5</td>
<td>4</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Middle</td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Old</td>
<td>1</td>
<td>2</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>11</td>
<td>25</td>
<td>38</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (6)= 15.46, p < 0.05$

Post hoc $\chi^2$ tests:

1. Less than 1 month
   - Middle vs Old sig: $\chi^2 (1)= 5.88, p < 0.05$
2. Never
   - Old vs Middle sig: $\chi^2 (1)= 6.13, p < 0.05$
   - Old vs Young sig: $\chi^2 (1)= 6.67, p < 0.01$

No other paired comparisons significant.

In the case of a diagnosis of dementia (see Table 4.16), it was found that children in the ‘young’ age group were more likely to choose a recovery time of ‘less than 1 month’ when compared to children from the ‘old’ age group. Children from the ‘old’ age group were more likely to state that the principal character diagnosed with dementia would never get better compared to children from the ‘middle’ age group, and to children from the ‘young’ age group.

As far as anorexia nervosa was concerned, although there were no significant differences associated with age, the frequencies indicated that ‘old’ children tended to choose ‘1 year’ as a recovery time, with ‘young’ and ‘middle’ children more likely to choose ‘less than 1 month’ than ‘old’ children (see Table 4.17).
### Table 4.16: Timeline for dementia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>6 months</th>
<th>1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>Middle</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>Old</td>
<td>2</td>
<td>0</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>18</strong></td>
<td><strong>9</strong></td>
<td><strong>21</strong></td>
<td><strong>41</strong></td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (6) = 20.75, p < 0.01$

Post hoc $\chi^2$ tests:
1. Less than 1 month vs Young vs Old sig: $\chi^2 (1) = 4.28, p < 0.05$
2. Never Old vs Young sig: $\chi^2 (1) = 10.58, p < 0.01$
   Old vs Middle sig: $\chi^2 (1) = 6.73, p < 0.01$

No other paired comparisons significant.

### Table 4.17: Timeline for anorexia nervosa analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>6 months</th>
<th>1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>8</td>
<td>6</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Middle</td>
<td>10</td>
<td>6</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Old</td>
<td>2</td>
<td>7</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>19</strong></td>
<td><strong>28</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

#### 4.4 Discussion

The use of the five-dimensional model of adult illness understanding allowed the investigation of children’s conceptions of mental illness from a novel perspective. The study provided children with the ‘identity’ part of the framework of four mental illnesses presented in vignettes and then explored whether children’s thinking about the remaining components of the model, namely causes, consequences, curability and timeline, was associated with the child’s age, gender and experience of mental illness, through the use of a card selection task. Overall, the study found an increase with age in children’s comprehension of all five dimensions examined. Children’s knowledge and understanding of the causes, consequences, curability and timeline...
for each of the four mental illnesses explored did develop with age. Previous research has found that young children have considerable knowledge and understanding about health and physical illness (Bird & Podmore, 1990) and that their thinking about physical illness becomes more accurate and differentiated with age (Sigelman et al., 1993). It also appears that children have considerable knowledge and understanding about mental illness, which becomes more sophisticated and accurate with age. However, there was no relationship between experience of mental illness and children’s responses, and mixed results were found for gender.

With reference to causes, older children tended to provide more accurate responses compared to younger children. For example, 77% of ‘old’ children responded that anorexia nervosa was caused by the principal character not eating properly, compared to only 28% of ‘young’ children, with 21% of ‘young’ children responding that anorexia nervosa was caused by drugs (none of the children in the ‘old’ age group responded with this cause). There also appeared to a predominance of younger children providing physical/medical responses compared to older children. For example, 41% of ‘young’ children responded that dementia was caused by brain damage, compared to 13% of ‘old’ children. Furthermore, the responses of older children, suggested that they understood that ill health can be caused by both internal and external agents. For example, 30% of ‘old’ children responded that the principal character had been born with the condition, while 27% of ‘old’ children chose ‘she banged her head’. Older children have also been found to demonstrate a broader understanding of the factors that cause physical illness (Hergenrather & Rabinowitz, 1991).

For the consequences of the mental illness diagnoses, children also demonstrated an increased knowledge and understanding with age. Older children were distinct in their responses compared to younger children. Younger children tended to provide medicalised consequences for the four mental illness diagnoses, for example, 17% of ‘young’ children responded that the principal character with dementia would need to have an operation, compared to 7% of ‘old’ children. Similarly, 14% of ‘young’
children chose ‘she will die’, compared to 0% of ‘old’ children. In comparison, older children provided more sophisticated responses, with 23% of ‘old’ children stating, for example, that the principal character diagnosed with schizophrenia would need to see a psychiatrist; in comparison only 3% of ‘young’ children chose this consequence for schizophrenia. It appeared that older children were able to understand that there may be alternative consequences to those put forward by the medical model. Older children have also been found to demonstrate a more developed and sophisticated understanding of the concepts associated with the consequences of physical illness (Rubovits & Siegel, 1994).

Similar age-related differences were found for the curability and timeline components of the illness framework. Younger children tended to provide shorter recovery times than older children, with older children demonstrating a much more accurate knowledge and understanding of the curability and timeline of the mental illness diagnoses than younger children. For example, younger children were more likely to respond that it would take less than one month for the principal characters with depression, schizophrenia and dementia to get better, whereas older children tended to think that it would take the principal character with depression one year to get better and thought that the principal characters with schizophrenia and dementia would never get better.

Only a very small minority of children chose the nonsense items included in the ‘choice’ cards, indicating that the majority of the children were actually thinking about the range of choices available. For causes, only two children chose ‘ate too many sweets’, which was for the diagnosis of anorexia nervosa. Similarly, for consequences only two children chose ‘she will go shopping’ for depression, anorexia nervosa and dementia. The general rejection of these items would suggest that the children were actively engaging with the task, thus strengthening the validity of the approach.

In addition to the age-related differences that were found, results indicated an order of acquisition of the dimensions (causes, consequences, curability and timeline).
Although there was an overall increase in knowledge and understanding in the causes, consequences, curability and timeline of mental illness with age, older children demonstrated a less clear understanding of the consequences of mental illness compared to the other components (causes, timeline and curability). This would suggest that children first attain an understanding of the causes of mental illness, and that their comprehension of the consequences develops later. Some research has suggested children's thinking about more complex and abstract concepts of illness such as consequences or prevention, develop more slowly than children's thinking about more concrete concepts such as cause or symptoms (Rosenthal, Waters & Glaun, 1995; Schmidt & Weinshaupt, 1990). Therefore children develop the ability to reason about consequences only when they develop the ability for more abstract reasoning; thus children acquire knowledge and understanding of consequences at a later date to knowledge and understanding about causes.

Although children demonstrated clear age differences in their knowledge and understanding of the causes, consequences, curability and timeline of mental illness, the picture was not so clear with respect to gender. Mixed results were obtained for the different illness components (causes, consequences, curability and timeline). No differences were found between boys and girls in their responses to the curability and timeline of the mental illness diagnoses. Differences were found however, between the responses of boys and girls to the causes and consequences of the different types of mental illness, where girls were more likely to provide responses of a more sympathetic nature and showed greater social acceptance compared to boys. Previous research has also provided conflicting results in terms of whether boys and girls have different knowledge and understanding of mental illness. For example, girls have been found to be more compassionate in their thinking about mental illness, not wanting those who suffer from mental health problems to become socially isolated (Ross & Ashok, 1983). The findings of the present study are consistent with their work; for example, girls tended to attribute depression to having no friends, whereas boys tended to think that it was more likely caused by drugs. Similarly, girls were more likely to think that the principal character with anorexia nervosa would need to have therapy, whereas boys tended to think that it was more
likely that the person would have to have an operation and go to a mental hospital. It appeared that girls were more compassionate towards the principal characters than boys. However, more research is needed in order to make any firm conclusions.

With respect to personal experience and children's knowledge and understanding of mental illness, no relationship was found for any of the components of the Leventhal model. Eiser (1985) also found no association of experience and children's understanding of the causes of physical illness. In fact, very few children in the present study reported knowing someone with a mental illness or having experience of mental illness. This is interesting when prevalence figures are reported indicating that as high as 1 in 4 people suffer from mental disorder (Royal College of Psychiatrists, 1998-2003). This raises the possibility that children may have in fact come into contact with individuals with mental health problems, but been unaware owing to people not wanting to talk about the issue of mental illness because of the stigma that this label generates.

The data suggest that the adult illness framework provides a useful model for the investigation of children's thinking about mental health problems. Children are able to conceptualise mental illness in terms of causes, consequences, curability and timeline. They also demonstrate a developmental shift in their thinking about mental illness, however the findings of the present study do not provide support for the Piagetian approach. Young children were not vague, magical and illogical in their thinking about mental illness, but provided clear, logical answers possibly based on what they knew and understood about the causes, consequences, curability and timeline of common physical illnesses. Children may gain experience of common childhood illnesses such as colds, chicken pox and influenza early on in life, shaping the development of their illness understanding; that illnesses are contagious, cured by the medical profession and recoverable from in a relatively short period of time. When a child encounters a novel illness type, they may attempt to make sense of that illness using these well-established criteria. Children would therefore regard newly encountered illnesses as infectious, readily transmittable, treated by the medical profession (Brown, Nassau & Barone, 1990; Kister & Patterson, 1980) and relatively
short-lived. The results of the present study suggest that older children no longer rely on this medical model of reasoning. They have acquired more knowledge and understanding of mental illness and have developed a more sophisticated and detailed knowledge system within this domain. This enables them to consider alternative causes, consequences, curability and timelines than those put forward by the medical model.

4.5 Conclusion

The limitations of the present study stem mainly from its exploratory nature, leaving a number of research questions unanswered. For example, there was no investigation of linked responses between the components of the Leventhal model. There was also no comparison made between children's knowledge and understanding of physical illness and their thinking about mental illness. Furthermore, the study had a relatively small sample size. Nevertheless, the present study highlighted a number of issues relevant to future research. Firstly, the study demonstrated that the five-component model of adult illness understanding provides a useful conceptual framework within which to investigate children's thinking about mental illness. Secondly, the study established an appropriate language and methodology to utilise when investigating children's thinking about mental illness. With reference to language, a combination of diagnostic labels and vignettes describing behavioural symptoms of the mental health problems and not general terms was used to refer to mental illness. With reference to methodology, a semi-structured interview incorporating vignettes and a card selection task was used, where cards were generated by children's own responses in a previous focus group study. Thirdly, the study highlighted developmental trends in children's thinking about mental illness, with younger children tending to use a medical model in order to respond about the causes, consequences, curability and timeline of mental health problems. Older children on the other hand demonstrated a more sophisticated and accurate knowledge and understanding of mental illness. Finally, the study highlighted the relative unimportance of gender and personal experience of mental illness on children's responses to the causes, consequences, curability and timeline.
The next study therefore utilised similar language and adopted a similar methodology to the present study, namely, a semi-structured interview utilising vignettes and a card selection task. However, it narrowed down the number of response cards presented to the children. The cards presented to the children were based on the results of the present study. The next study also utilised the five-dimensional model of adult illness understanding, but focused upon only two dimensions of the model, namely causes and consequences, and aimed to ‘tighten’ the theoretical approach, by exploring children’s thinking about mental illness as well as physical illness from a naïve theory approach. The study further explored the differences between boys’ and girls’ conceptions towards mental disorder, owing to the mixed results obtained in the present study.
CHAPTER 5

Study 3

Children’s Knowledge and Understanding of the Causes and Consequences of Mental Illness: A Naïve Theory Approach

5.1 Introduction

The previous study highlighted developmental trends in children’s knowledge and understanding of mental illness, whereby their knowledge and understanding becomes more sophisticated and accurate with age. Younger children tended to use a medical model in order to respond about the causes, consequences, curability and timeline of mental illness, while older children did not. The study also established an appropriate language and methodology for the investigation of children’s thinking about mental illness and highlighted a relative unimportance of gender and personal experience of mental illness on children’s responses. Furthermore, the study demonstrated that the five-component model of adult-illness understanding provides a useful conceptual framework for the investigation of children’s knowledge and understanding of mental illness. However, the study was exploratory and it was evident that further exploration was needed into how children reason about mental illness.

The present study therefore, firstly, adopted a new theoretical approach, the naïve theory approach (Wellman & Gelman, 1992, 1998). This approach takes into account individual gains in knowledge and addresses cognitive development from a domain-specific standpoint. The naïve theory approach postulates that cognitive development advances through the formation and progressive refinement and/or replacement of naïve theories. A naïve theory underpins a child’s reasoning about a set of phenomena, in the present study how children reason about mental illness. Naïve theories entail ontological distinctions, coherence and a causal-explanatory framework (Wellman, 1990). In the present study ontological distinctions and coherence in children’s thinking about mental illness were investigated by using a
comparison between children’s thinking about the cause and effect of mental illness and their thinking about the cause and effect of physical illness. Differences in children’s reasoning about mental illness and their reasoning about physical illness would mark out the domain of mental illness, thus revealing an ontological distinction in their thinking. In order to examine children’s ability to construct coherent, causal-explanatory understandings about mental and physical illness, the cause and consequence components of Leventhal’s illness understanding framework utilised in the previous study were investigated in more detail. In-depth investigations of causes, consequences, curability and timeline in a single study may also have proved too demanding for the children, so curability and timeline were not examined in this study. The present study therefore investigated children’s response patterns concerning the causes and consequences of the different mental and physical illnesses. Where children produce logical and rational linked cause and consequence responses patterns, this would indicate coherence in children’s thinking, and an ability to construct causal-explanatory understandings.

Secondly, the study utilised a similar language and adopted a similar methodology to the previous study; a semi-structured interview technique incorporating a combination of diagnostic labels and vignettes describing behavioural symptoms of different types of mental illness, and a card selection task, whereby cards were generated by children’s own responses from previous work.

With respect to the vignettes, the illnesses examined were different from those in the previous study. Although the same vignettes presented to children in Study 2 were utilised again, it was not possible to retain all of the mental illness diagnoses presented. In the focus group study younger children had found it difficult to concentrate when presented with seven different types of mental illness diagnosis. In the present study, children were presented with both mental and physical illnesses, in order to examine ontological distinctions, which meant an increased number of vignettes. However, four mental and four physical illnesses would have taxed the attentional focus of the younger children. As children would be more familiar with the physical illnesses, it was decided that the younger children should be able to
retain their attention if presented with six vignettes in total, consisting of three mental and three physical illness diagnoses. Furthermore, the inclusion of the mental illness diagnosis schizophrenia had not proved particularly fruitful in the previous study, for any of the age groups, and it was decided to exclude this diagnosis from the present study. However, mental illness diagnoses of depression, anorexia nervosa and dementia had proved much more informative, and so were retained. The three physical illness diagnoses chosen, in order to provide comparison in children’s thinking about mental and physical illnesses, were the common cold, chicken pox and broken arm. As before, principal characters in the vignettes were given one of six names, with each child receiving all six names to make it clear that the vignettes were describing different individuals. The order of the names was randomised in order to control for order effects.

With respect to the causes and consequences presented to children in the present study (see Tables 5.1 and 5.2), these differed from those in the previous study, and were overall reduced in number. In order to ascertain which of the causes and consequences cards from Study 2 to include in the present study, cards were first divided into the five broad categories: psychological, physical/medical, contagion, contamination and immanent justice (see Tables 5.1 and 5.2). Some of the cards that were presented to children in the previous study fell into the same category, where this occurred, for example psychological, physical and physical/medical categories, a more general, single response card was chosen. The response cards presented in the present study either encompassed all cards in that category, or where responses varied within a category, the card presented in the present study was based on the frequency of children’s responses to the cards in that category. For example, with reference to a psychological response card, the psychological response cards presented to children in Study 2 all described causes that were to do with how the principal character thinks and feels about things, so ‘its to do with how she thinks and feels’ was presented as a response card in the present study. Similarly, for a physical/medical response card for consequences, the majority of children in Study 2 chose ‘she will have to go to hospital’ or ‘she will go to hospital and have surgery’ as physical/medical responses. Therefore the response card ‘she will need to have an
operation’ was presented to children in the present study, as going to hospital is a necessary part of having an operation.

Table 5.1: Development of causes cards presented to children in study three

<table>
<thead>
<tr>
<th>Causes Cards Study 2</th>
<th>Category</th>
<th>Causes Cards Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>She caught it from someone</td>
<td>Contagion</td>
<td>She caught it</td>
</tr>
<tr>
<td>She ate too many sweets</td>
<td>Contamination</td>
<td>She ate something bad</td>
</tr>
<tr>
<td>She was being bullied</td>
<td>Immanent justice</td>
<td>She was nasty to her friend</td>
</tr>
<tr>
<td>Someone she was close to has died</td>
<td>Psychological</td>
<td>It’s to do with how she thinks and feels</td>
</tr>
<tr>
<td>Something happened to her in the past</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She worries too much about things</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She saw something on television</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She has no friends</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She was born like it</td>
<td>Physical/medical</td>
<td>Something is wrong with her brain</td>
</tr>
<tr>
<td>She has brain damage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Someone in family is like it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She banged her head</td>
<td>Physical</td>
<td>She fell off her bike</td>
</tr>
<tr>
<td>She took drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She drank too much alcohol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She had an accident</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She doesn’t eat properly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Contagion and contamination were included as the younger children who participated in Study 2 tended to provide a contagion or contamination explanation for the causes of the mental illnesses. With reference to immanent justice, previous research has shown that young children tend to explain the causes and consequences of illness in terms of immanent justice (e.g., Cook, 1975; Kister & Patterson, 1980;
White, Elsom & Prawat, 1978), and so an immanent justice response for causes and consequences was also included. Furthermore, the inclusion of an immanent justice response to both cause and consequence in the present study was also used as a test for coherence in children's thinking about mental illness.

Table 5.2: Development of consequences cards presented to children in study three

<table>
<thead>
<tr>
<th>Consequences Cards Study 2</th>
<th>Category</th>
<th>Consequences Cards Study 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>She will see a doctor</td>
<td>Contamination/</td>
<td>She will need to see a doctor</td>
</tr>
<tr>
<td></td>
<td>contagion</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Immanent justice</td>
<td>She will need to be nice to her friend in the future</td>
</tr>
<tr>
<td>She will go to a mental hospital</td>
<td>Psychological</td>
<td>She will need to have therapy</td>
</tr>
<tr>
<td>She will knock things over</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will do silly things</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will draw on the wall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will have therapy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will see a psychiatrist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will lose her friends</td>
<td>Psychological</td>
<td>She will need help and support from her relatives</td>
</tr>
<tr>
<td>She will need help and support from her relatives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will die</td>
<td>Physical/medical</td>
<td>She will need to have an operation</td>
</tr>
<tr>
<td>She will have to take some tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will have to go to hospital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will go to hospital and have surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>She will stay in bed</td>
<td>Physical</td>
<td>She will need to stay at home</td>
</tr>
<tr>
<td>She will go shopping</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One of the limitations of Study 2 related to the relatively small sample size, whereby 89 children took part. In the present study therefore, power calculations were carried out in order to ascertain the number of children that were required to participate in
the study while retaining an acceptable level of power, to detect an appropriate effect size. The power of a study is the likelihood of detecting a significant difference when the null hypothesis is false; that is, there really is a difference associated with the independent variable. Discussions of power are usually concerned with the effect of varying sample size because N is easy to manipulate. A programme called Gpower (Erdfelder, Faul & Buchner, 1996) was utilised for the calculation. The following options were chosen: alpha = 0.05, 2-tailed chi-square test, and it was decided that a sample size of 117 would be appropriate enabling the identification of a medium effect size, with power at 0.9 (see Table 5.3 for results). Children were divided into the same three age groups as in the previous studies: a ‘young’ group of children from Year 2 (age 6-7 years), a ‘middle’ group of children from Year 4 (8-9 years) and an ‘old’ group of children from Year 6 (10-11 years).

Table 5.3: Power calculations

<table>
<thead>
<tr>
<th>Effect Size</th>
<th>Power 0.7</th>
<th>Power 0.8</th>
<th>Power 0.9</th>
<th>Power 0.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lambada</td>
<td>6.1800</td>
<td>7.8500</td>
<td>10.5100</td>
<td>13.0000</td>
</tr>
<tr>
<td>Critical $\chi^2$ (1)</td>
<td>3.8415</td>
<td>3.8415</td>
<td>3.8415</td>
<td>3.8415</td>
</tr>
<tr>
<td>Total sample</td>
<td>618</td>
<td>785</td>
<td>1051</td>
<td>1300</td>
</tr>
<tr>
<td>Actual power</td>
<td>0.7006</td>
<td>0.8001</td>
<td>0.9001</td>
<td>0.9501</td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lambada</td>
<td>6.2100</td>
<td>7.9200</td>
<td>10.5300</td>
<td>13.0500</td>
</tr>
<tr>
<td>Critical $\chi^2$ (1)</td>
<td>3.8415</td>
<td>3.8415</td>
<td>3.8415</td>
<td>3.8415</td>
</tr>
<tr>
<td>Total sample</td>
<td>69</td>
<td>88</td>
<td>117</td>
<td>145</td>
</tr>
<tr>
<td>Actual power</td>
<td>0.7026</td>
<td>0.8035</td>
<td>0.9006</td>
<td>0.9508</td>
</tr>
<tr>
<td>Large</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lambada</td>
<td>6.2500</td>
<td>8.0000</td>
<td>10.7500</td>
<td>13.0000</td>
</tr>
<tr>
<td>Critical $\chi^2$ (1)</td>
<td>3.8415</td>
<td>3.8415</td>
<td>3.8415</td>
<td>3.8415</td>
</tr>
<tr>
<td>Total sample</td>
<td>25</td>
<td>32</td>
<td>43</td>
<td>52</td>
</tr>
<tr>
<td>Actual power</td>
<td>0.7054</td>
<td>0.8074</td>
<td>0.9064</td>
<td>0.9501</td>
</tr>
</tbody>
</table>

The present study therefore built upon the findings of Studies 1 and 2, while addressing a number of theoretical and methodological problems with existing research. Firstly, Studies 1 and 2, importantly, established an appropriate language
and methodology to use when investigating children's thinking about mental health problems. In the present study therefore, with reference to language, a combination of diagnostic labels and vignettes describing behavioural symptoms of the mental illness diagnoses, and not general terms used to refer to mental illness, were utilised. This addressed linguistic problems of earlier research, maintaining face validity of the present study. With reference to methodology, the study again adopted a semi-structured interview technique, addressing methodological problems of open-ended interviewing. Further, as cards were generated from the focus group study (Study 1), where children of a similar age had generated a wide range of responses, this minimised the problems of unassisted verbal reporting and reflected the children's own understanding. Cards presented to children in the present study were developed from the cards presented to children in Study 2, however response cards were categorised and reduced in number.

Secondly, Study 2 demonstrated the utility of the five-dimensional model of illness understanding for investigating children's knowledge and understanding of mental illness. The present study focused upon two dimensions, namely causes and consequences, the most important components of children's understanding of illness. Furthermore, the study utilised these two components in order to investigate children's thinking about mental as well as physical illness from a novel perspective by adopting a 'naïve theory' approach to cognitive development, examining: 1) ontological distinctions, 2) coherence in children's thinking, and 3) children's causal-explanatory understandings. The study therefore aimed to examine children's ontological distinctions by comparing children's thinking about mental illness with their thinking about physical illnesses in order to explore their ability to differentiate between the two broad types of illnesses, thus marking out the particular domain of mental illness. The study also aimed to investigate the coherence of children's thinking about mental and physical illnesses and to examine whether children's explanatory frameworks were indicative of a naïve theory-like understanding.

Finally, the previous study (Study 2) highlighted mixed results for the effect of gender on children's responses to causes, consequences, curability and timeline of
mental illness. In the present study therefore children’s thinking about the causes and consequences of the different types of mental and physical illnesses was investigated for both developmental and gender trends.

5.2 Method

5.2.1 Design
The present study had three independent variables. The independent variable diagnosis was presented to the children in the vignettes; whether the principal character had a mental illness diagnosis of depression, anorexia nervosa, dementia (Alzheimer’s type), or a physical illness diagnosis of chicken pox, broken arm or common cold. Children were therefore presented with six vignettes: adult female with depression, adult female with anorexia nervosa and adult female with dementia, adult female with chicken pox, adult female with a broken arm and adult female with a common cold. A female was depicted in each of the vignettes, as in the previous study, in order to control for effects of gender of the principal character. The other two independent variables were age and gender of the participants. The dependent variables were: a) causes, the reasons why an illness develops, and b) consequences, occurrences as a result of an illness; these were measured by children’s responses to a card selection task inquiring, for example, what initiated the development of the mental or physical illness and what would happen to the principal character. Thus, the study employed a 3 (age) x 2 (gender) x 6 (mental/physical illness) mixed design.

The study aimed to examine children’s naïve theories of mental illness, by investigating the children’s ontological differentiation between mental and physical illness and their ability to construct coherent, causal-explanatory understandings about mental and physical illness, and whether children’s responses varied as a function of their age and gender.

5.2.2 Participants
Children were recruited from three different schools. These were, English Martyrs Catholic Primary School and St. Marie’s Catholic Junior School in Rugby,
Warwickshire and St. Patrick’s School in Leamington Spa, Warwickshire. The same ethical considerations were taken into account as with the previous study, for example meeting with the Head Teacher, confidentiality and consent (see Chapter 4, page 73). Overall, a total of 122 children took part. Children were divided into three groups; a ‘young’ group, which comprised of 40 children from Year 2, a ‘middle’ group of 40 children from Year 4 and an ‘old’ group of 42 children from Year 6. The study aimed for approximately equal numbers of pupils across each school year and approximately equal numbers of boys and girls (60 boys, 62 girls) (see Table 5.4).

Table 5.4: Mean age of the children who took part in the study by age group and gender

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Gender</th>
<th>N</th>
<th>Mean Age</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>Girls</td>
<td>21</td>
<td>6.86</td>
<td>0.48</td>
</tr>
<tr>
<td>(Year 2)</td>
<td>Boys</td>
<td>19</td>
<td>6.68</td>
<td>0.36</td>
</tr>
<tr>
<td>Middle</td>
<td>Girls</td>
<td>20</td>
<td>8.75</td>
<td>1.04</td>
</tr>
<tr>
<td>(Year 4)</td>
<td>Boys</td>
<td>20</td>
<td>9.35</td>
<td>0.44</td>
</tr>
<tr>
<td>Old</td>
<td>Girls</td>
<td>21</td>
<td>10.81</td>
<td>0.36</td>
</tr>
<tr>
<td>(Year 6)</td>
<td>Boys</td>
<td>21</td>
<td>10.86</td>
<td>0.40</td>
</tr>
</tbody>
</table>

5.2.3 Materials

The materials that were presented to each child consisted of two parts. The first part comprised a vignette describing a principal character diagnosed with a mental illness (depression, anorexia nervosa, dementia), or a physical illness (chicken pox, broken arm, common cold). The second part consisted of a card selection task incorporating a series of questions designed to investigate the child’s responses to the causes and consequences of the mental and physical illness diagnoses (see Appendix 3 for full details of the semi-structured interview schedule).
The vignettes presented to each participant provided information about a principal character diagnosed with a mental or physical illness describing the symptoms experienced. The researcher devised the vignettes presented; symptoms for mental illnesses, as in previous studies, were described according to the DSM IV (American Psychiatric Association, 1995). Physical illness symptoms were drafted with the assistance of a medical practitioner. Children received all six versions of the vignettes. These varied according to independent variable manipulation, namely diagnosis. Vignettes were as follows: adult female with depression, adult female with anorexia nervosa, adult female with dementia (Alzheimer’s type), adult female with chicken pox, adult female with a broken arm, adult female with a common cold (see Figure 5.1).

Vignettes were then followed by a card selection task, where children were asked to choose a ‘cause’ and ‘consequence’ for the mental or physical illness in question. There were six causes cards incorporating causes such as ‘she caught it’, ‘she ate something bad’ and ‘it’s to do with how she thinks and feels’ and six consequences cards including ‘see a doctor’, ‘have an operation’ and ‘need help and support from relatives’. Children therefore received a total number of 12 different causes and consequences cards (see Figure 5.2). Cards each measured 12cm in length and 6cm in width. Words contained on the cards were typed in capital letters in a clear bold black font.

In addition, there were six cards in order to determine the order of presentation of mental and physical illness type (depression, anorexia nervosa, dementia (Alzheimer’s type), chicken pox, broken arm and common cold), these cards were not presented to the children. Results were documented on a record sheet (see Appendix 3).
**Figure 5.1: Vignettes presented to children**

**Depression:**
This is about a woman called* ...... She has got Depression. This means that she feels sad all of the time and doesn’t like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn’t worth anything and blames herself when things go wrong. She also finds it hard to sleep.

**Anorexia Nervosa:**
This is about a woman called* ...... She has got Anorexia Nervosa. This means that she has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

**Dementia (Alzheimer’s Type):**
This is about a woman called* ...... She has got Dementia. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn’t recognise her family anymore and needs to be looked after all the time.

**Chicken Pox:**
This is about a woman called* ...... She has got Chicken Pox. This means that she doesn’t feel very well and isn’t very hungry. She is covered in a rash of red spots that have got crusts that will drop off. The rash is very itchy so she has to try not to scratch the spots.

**Broken Arm:**
This is about a woman called* ...... She has broken her arm. This means that her arm is swollen and bruised and it really hurts when she tries to wiggle her fingers.

**Common cold:**
This is about a woman called* ...... She has got a Cold. This means that she has a runny nose, a headache and a sore throat. She feels chilly but she has a temperature and she has a cough.

*The names Jane, Sarah, Ann, Mary, Susan and Rachel were chosen at random by the researcher in order to control for effects as a result of the name given to the principal character in the vignette and to make it clear that each vignette was describing an different person.*
Figure 5.2: Causes and consequences cards presented to children

<table>
<thead>
<tr>
<th>Causes:</th>
<th>Consequences:</th>
</tr>
</thead>
<tbody>
<tr>
<td>She caught it from someone</td>
<td>She will need to see a doctor</td>
</tr>
<tr>
<td>She ate something bad</td>
<td>She will have an operation</td>
</tr>
<tr>
<td>She was nasty to her friend</td>
<td>She will have therapy</td>
</tr>
<tr>
<td>It’s to do with how she thinks and feels</td>
<td>She will need help and support from her relatives</td>
</tr>
<tr>
<td>Something is wrong with her brain</td>
<td>She will always have to be nice to her friend in the future</td>
</tr>
<tr>
<td>She fell off her bike</td>
<td>She will have to stay at home</td>
</tr>
</tbody>
</table>

5.2.4 Procedure

The cards presented to children were randomly ordered in order to control for possible order effects; the order of the six cards relating to mental or physical illness diagnosis, and the 12 ‘choice’ cards of the child. All cards were therefore shuffled by the researcher prior to the commencement of each interview meaning that each child was presented with a new randomly ordered set of cards.

Children were interviewed individually in order to avoid the effects of more dominant and confident children. Each child was then informed that they would be presented with a number of vignettes describing a person diagnosed with a mental or physical illness and the symptoms experienced, and that this would be followed by a card selection task in relation to the person described in the vignette. Children were also assured that their responses would be anonymous and informed that they should choose whichever cards they felt to be right.

Having randomly ordered the mental and physical illness diagnoses, each section of the interview began with the participant being read a vignette describing an adult female diagnosed with the first mental or physical illness and the symptoms that they experience. Children were then presented with a series of cards inquiring about the cause and consequence of the mental or physical illness presented in the vignette.
Cause was inquired about by asking ‘how did this person get........... (depression, anorexia nervosa, dementia, cold, chicken pox, or a broken arm)?’ Cards were presented simultaneously, with each card being read aloud in order to make sure that the child understood what was written on each of the cards. Once the experimenter was sure that this was the case, the child was then asked to choose the most likely cause of the mental or physical illness of the person described in the vignette. The chosen card was retained and recorded. The child was then asked about the consequences of the mental or physical illness described in the vignette, ‘what will happen to this person because they have........... (depression, anorexia nervosa, dementia, cold, chicken pox, or a broken arm)?’, and the child again asked to choose the most likely consequence of the mental or physical illness in question.

This process was repeated for each of the mental and physical illness diagnoses. All answers were documented on a recording sheet. Any child who was noted to have difficulties with reading was given assistance when judged necessary.

5.3 Results

Children’s responses to causes and consequences were analysed using hi log linear analysis in order to assess whether categories of response were associated with either age or gender. Children’s response patterns to the causes and consequences of the different mental illness diagnoses were analysed using configural frequency analysis. Results of the configural frequency analysis were further analysed using a hi log linear technique in order to examine response patterns for age and gender trends.

5.3.1 Causes and consequences (hi log linear analysis)

5.3.1.1 Causes associated with age group and gender

No effect of gender for any of the mental or physical illness diagnoses was found. Significant effects of age were found for principal characters diagnosed with a mental illness, but not for principal characters diagnosed with a physical illness however. As a result it was decided that gender could be omitted from the model.
This left age group as the only remaining independent variable, and so a chi-square test was deemed more appropriate. The chi-square test confirmed the results of the log linear analysis showing significant effects of age for the mental illness diagnoses of depression, anorexia nervosa and dementia (see Tables 5.5-5.7 for details), but not for the physical illness diagnoses of broken arm, chicken pox and common cold (see Tables 5.8-5.10 for details).

Post-hoc analyses showed that for depression (see Table 5.5), ‘young’ children were more likely to choose ‘she caught it from someone’ compared to children from the ‘middle’ and ‘old’ age groups, while ‘middle’ and ‘old’ children were more likely to choose ‘it’s to do with how she thinks and feels’ than ‘young’ children.

Table 5.5: Cause of depression analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Caught it</th>
<th>Ate something bad</th>
<th>Nasty to friend</th>
<th>Thinks and feels</th>
<th>Something wrong with brain</th>
<th>Fell off her bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>14</td>
<td>0</td>
<td>8</td>
<td>16</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>1</td>
<td>1</td>
<td>6</td>
<td>30</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Old</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>33</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>1</td>
<td>18</td>
<td>79</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2(8) = 36.09$, $p < 0.01$
Post hoc tests:
(1) She caught it
   Young vs Old sig: $\chi^2(1) = 15.34$, $p < 0.01$
   Young vs Middle sig: $\chi^2(1) = 11.82$, $p < 0.01$
(2) Thinks and feels
   Old vs Young sig: $\chi^2(1) = 11.12$, $p < 0.01$
   Middle vs Young sig: $\chi^2(1) = 8.64$, $p < 0.01$
No other paired comparisons significant.

For anorexia nervosa (see Table 5.6), ‘old’ children were more likely to choose ‘its to do with how she thinks and feels’ than ‘middle’ and ‘young’ children. For dementia (see Table 5.7), ‘young’ children were more likely to choose ‘she caught it’ compared to ‘middle’ and ‘old’ children. ‘Middle’ and ‘old’ children were more likely to have chosen ‘something in wrong with her brain’ as the cause for dementia compared to ‘young’ children.
Table 5.6: Cause of anorexia nervosa analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Caught it</th>
<th>Ate something bad</th>
<th>Nasty to friend</th>
<th>Thinks and feels</th>
<th>Something wrong with brain</th>
<th>Fell off her bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>5</td>
<td>9</td>
<td>0</td>
<td>17</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>3</td>
<td>11</td>
<td>0</td>
<td>17</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Old</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>32</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Total 8 24 0 66 23 1

Log linear significant effect of age: $\chi^2 (8) = 17.17$, p < 0.05

Post hoc tests:
1. Thinks and feels Old vs Middle sig: $\chi^2 (1) = 8.32$, p < 0.01
   Old vs Young sig: $\chi^2 (1) = 8.32$, p < 0.01

No other paired comparisons significant.

Table 5.7: Cause of dementia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Caught it</th>
<th>Ate something bad</th>
<th>Nasty to friend</th>
<th>Thinks and feels</th>
<th>Something wrong with brain</th>
<th>Fell off her bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>16</td>
<td>2</td>
<td>0</td>
<td>7</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>36</td>
<td>2</td>
</tr>
<tr>
<td>Old</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>41</td>
<td>0</td>
</tr>
</tbody>
</table>

Total 17 3 0 8 92 2

Log linear significant effect of age: $\chi^2 (8) = 57.85$, p < 0.01

Post hoc tests:
1. Caught it Young vs Middle sig: $\chi^2 (1) = 17.58$, p < 0.01
   Young vs Old sig: $\chi^2 (1) = 15.43$, p < 0.01
2. Something wrong with brain Middle vs Young sig: $\chi^2 (1) = 21.64$, p < 0.01
   Old vs Young sig: $\chi^2 (1) = 31.48$, p < 0.01

No other paired comparisons significant.

For a diagnosis of chicken pox, children of all age groups tended to choose ‘she caught it’ as the cause (see Table 5.8). For broken arm, ‘young’, ‘middle’ and ‘old’ children tended to choose ‘she fell off her bike’ as the cause (see Table 5.9), and for common cold, children tended to choose ‘she caught it’ (see Table 5.10).
Table 5.8: Cause of chicken pox analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Caught it</th>
<th>Ate something bad</th>
<th>Something wrong with brain</th>
<th>Fell off her bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>36</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>34</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Old</td>
<td>40</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110</strong></td>
<td><strong>9</strong></td>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Table 5.9: Cause of broken arm analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Nasty to friend</th>
<th>Thinks and feels</th>
<th>Fell off her bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>0</td>
<td>1</td>
<td>39</td>
</tr>
<tr>
<td>Middle</td>
<td>1</td>
<td>0</td>
<td>39</td>
</tr>
<tr>
<td>Old</td>
<td>0</td>
<td>0</td>
<td>42</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
<td><strong>120</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Table 5.10: Cause of common cold analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Caught it</th>
<th>Nasty to friend</th>
<th>Thinks and feels</th>
<th>Something wrong with brain</th>
<th>Fell off her bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>38</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>37</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Old</td>
<td>42</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>117</strong></td>
<td><strong>1</strong></td>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant
5.3.1.2 Consequences associated with age group and gender

Significant age effects were found for the mental illness diagnoses depression, anorexia nervosa and dementia (see Tables 5.11-5.13), but not for the physical illness diagnoses of broken arm, chicken pox and common cold (see Tables 5.14-5.16). In addition, an effect of gender was noted for the consequences of depression (see Tables 5.17).

For depression (see Table 5.11), ‘middle’ and ‘old’ children were more likely to choose ‘she will need help and support from her relatives’ compared to ‘young’ children, who were more likely to choose ‘she will have to stay at home’ than ‘old’ children.

Table 5.11: Consequence of depression analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>See a doctor</th>
<th>Stay at home</th>
<th>Have an operation</th>
<th>Nice to friend in future</th>
<th>Help and support</th>
<th>Have therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Middle</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Old</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>10</td>
<td>5</td>
<td>17</td>
<td>46</td>
<td>22</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (10) = 34.40$, $p < 0.01$

Post hoc tests:

1. Help and support
   - Middle vs Young sig: $\chi^2 (1) = 11.40$, $p < 0.01$
   - Old vs Young sig: $\chi^2 (1) = 11.63$, $p < 0.01$

2. Stay at home
   - Young vs Old sig: $z (1) = 2.66$, $p < 0.01$

No other paired comparisons significant.

For anorexia nervosa (see Table 5.12), ‘old’ children were more likely to choose ‘she will have therapy’ compared to ‘young’ children. For dementia (see Table 5.13), ‘young’ children were more likely to choose ‘she will need to see a doctor’ compared to ‘middle’ and ‘old’ children. ‘Middle’ and ‘old’ children were more likely to choose ‘she will have therapy’ than ‘young’ children.
Table 5.12: Consequence of anorexia nervosa analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>See a doctor</th>
<th>Stay at home</th>
<th>Have an operation</th>
<th>Nice to friend in future</th>
<th>Help and support</th>
<th>Have therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>18</td>
<td>2</td>
<td>16</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>12</td>
<td>2</td>
<td>10</td>
<td>2</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Old</td>
<td>14</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>5</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>44</td>
<td>4</td>
<td>36</td>
<td>2</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (10)= 31.59, \ p < 0.01$
Post hoc tests: (1) Have therapy Old vs Young sig: $\chi^2 (1)= 12.48, \ p < 0.01$
No other paired comparisons significant.

Table 5.13: Consequence of dementia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>See a doctor</th>
<th>Stay at home</th>
<th>Have an operation</th>
<th>Nice to friend in future</th>
<th>Help and support</th>
<th>Have therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>20</td>
<td>5</td>
<td>8</td>
<td>0</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>7</td>
<td>4</td>
<td>13</td>
<td>1</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>Old</td>
<td>3</td>
<td>2</td>
<td>13</td>
<td>1</td>
<td>15</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>11</td>
<td>34</td>
<td>2</td>
<td>32</td>
<td>13</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (10)= 34.97, \ p < 0.01$
Post hoc tests: (1) See a doctor Young vs Middle sig: $\chi^2 (1)= 8.1, \ p < 0.01$
Young vs Old sig: $\chi^2 (1)= 16.6, \ p < 0.01$
(2) Have therapy Middle vs Young sig: $z (1)= 1.84, \ p < 0.05$
Old vs Young sig: $z (1)= 2.52, \ p < 0.01$
No other paired comparisons significant.

For a diagnosis of chicken pox, the majority of children chose ‘see a doctor’, although they also tended to choose ‘she will have to stay at home’ as a consequence (see Table 5.14). For the consequences of a broken arm, children tended to choose ‘she will need to see a doctor’ and ‘she will need to have an operation’ (see Table
5.15). With reference to common cold, children tended to choose ‘see a doctor’ and ‘she will have to stay at home’ for the consequences (see Table 5.16).

Table 5.14: Consequence of chicken pox analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>See a doctor</th>
<th>Stay at home</th>
<th>Have an operation</th>
<th>Nice to friend in future</th>
<th>Help and support</th>
<th>Have therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>20</td>
<td>16</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Middle</td>
<td>27</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Old</td>
<td>28</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>75</strong></td>
<td><strong>39</strong></td>
<td><strong>2</strong></td>
<td><strong>1</strong></td>
<td><strong>4</strong></td>
<td><strong>1</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Table 5.15: Consequence of broken arm analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>See a doctor</th>
<th>Stay at home</th>
<th>Have an operation</th>
<th>Nice to friend in future</th>
<th>Help and support</th>
<th>Have therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>15</td>
<td>4</td>
<td>17</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Middle</td>
<td>15</td>
<td>4</td>
<td>19</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Old</td>
<td>23</td>
<td>6</td>
<td>10</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53</strong></td>
<td><strong>14</strong></td>
<td><strong>46</strong></td>
<td><strong>1</strong></td>
<td><strong>5</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Gender differences were found only for a principal character diagnosis of depression. Boys were more likely to choose ‘she will have to stay at home’ as a consequence of depression than girls. Girls on the other hand, were more likely to choose ‘she will need help and support from her relatives’ compared to boys (see Table 5.17).
Table 5.16: Consequence of common cold analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>See a doctor</th>
<th>Stay at home</th>
<th>Nice to friend in future</th>
<th>Help and support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>25</td>
<td>12</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Middle</td>
<td>21</td>
<td>17</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Old</td>
<td>19</td>
<td>23</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>65</strong></td>
<td><strong>52</strong></td>
<td><strong>1</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Table 5.17: Consequence of depression analysed by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>See a doctor</th>
<th>Stay at home</th>
<th>Have an operation</th>
<th>Nice to friend in future</th>
<th>Help and support</th>
<th>Have therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>12</td>
<td>9</td>
<td>1</td>
<td>7</td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>Girls</td>
<td>10</td>
<td>1</td>
<td>4</td>
<td>10</td>
<td>29</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>10</strong></td>
<td><strong>5</strong></td>
<td><strong>17</strong></td>
<td><strong>46</strong></td>
<td><strong>22</strong></td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2(5) = 16.89$, $p < 0.01$

Post hoc tests:
(1) Stay at home Boys vs Girls sig: $z(1) = 2.35$, $p < 0.01$

(2) Help and support Girls vs Boys sig: $\chi^2(1) = 3.66$, $p < 0.1$

No other paired comparisons significant.

5.3.2 The coherence of causes and consequences (configural frequency analysis)

In order to investigate the coherence of children's response patterns to the causes and consequences of the different mental and physical illnesses, configural frequency analysis (CFA) was employed. CFA is a non-parametric, multivariate analysis of association. It identifies patterns of responses that are either over-represented (types) or under-represented (anti-types), based on a null hypothesis that the patterns are normally and randomly distributed (von-Eye, 1990). Each cause and consequence card was allocated a number from 1 to 6 (see Figure 5.3).
This gave rise to 36 possible response patterns (profiles) for each mental/physical illness. Each child was allocated a response pattern based on their choice of cause and consequence for each of the mental and physical illness diagnoses. For example, a child responding with ‘she caught from someone’ (cause) and ‘she will need to see a doctor’ (consequences) would be allocated a response pattern of ‘1, 1’. Similarly, a child stating that the principal character had ‘something wrong with her brain’ and would ‘need to have therapy’ would be allocated a response pattern of ‘5, 6’.

The data were then subjected to CFA in order to examine the causal-explanatory frameworks (i.e., the cause-consequence links), which underlay the children’s responses and to ascertain the frequencies of the various ‘types’ (pairs of causes and consequences). A number of ‘types’, which occurred significantly more frequently than would be expected by chance, were identified. More profiles were obtained for the mental illnesses: depression (4), anorexia nervosa (6) and dementia (5) than the physical illness diagnoses: chicken pox (2), common cold (2) and broken arm (3). Overall the different profiles obtained for each mental and physical illness highlighted commonality in the causes but variation in the consequences chosen (see Tables 5.18-5.19 for the profiles (types) identified for each of the mental and physical illness diagnoses. The first number in the ‘profile’ column denotes the cause and the second the consequence).
Table 5.18: Profiles identified for each of the mental illness diagnoses

<table>
<thead>
<tr>
<th>Mental Illness</th>
<th>Profile</th>
<th>Cause</th>
<th>Consequence</th>
<th>N</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>3, 4</td>
<td>Nasty to her friend</td>
<td>Nice to her friend in the future</td>
<td>12</td>
<td>4.68*</td>
</tr>
<tr>
<td></td>
<td>4, 1</td>
<td>How she thinks and feels</td>
<td>See a doctor</td>
<td>12</td>
<td>4.68*</td>
</tr>
<tr>
<td></td>
<td>4, 5</td>
<td>How she thinks and feels</td>
<td>Help and support from relatives</td>
<td>38</td>
<td>18.80*</td>
</tr>
<tr>
<td></td>
<td>4, 6</td>
<td>How she thinks and feels</td>
<td>Have therapy</td>
<td>19</td>
<td>8.48*</td>
</tr>
<tr>
<td>Anorexia</td>
<td>2, 1</td>
<td>She ate something bad</td>
<td>See a doctor</td>
<td>9</td>
<td>3.05*</td>
</tr>
<tr>
<td>Nervosa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2, 3</td>
<td>She ate something bad</td>
<td>Have an operation</td>
<td>9</td>
<td>3.05*</td>
</tr>
<tr>
<td></td>
<td>4, 1</td>
<td>How she thinks and feels</td>
<td>See a doctor</td>
<td>24</td>
<td>11.20*</td>
</tr>
<tr>
<td></td>
<td>4, 3</td>
<td>How she thinks and feels</td>
<td>Have an operation</td>
<td>18</td>
<td>7.94*</td>
</tr>
<tr>
<td></td>
<td>4, 5</td>
<td>How she thinks and feels</td>
<td>Help and support from her relatives</td>
<td>9</td>
<td>3.05*</td>
</tr>
<tr>
<td></td>
<td>4, 6</td>
<td>How she thinks and feels</td>
<td>Have therapy</td>
<td>12</td>
<td>4.68*</td>
</tr>
<tr>
<td>Dementia</td>
<td>1, 1</td>
<td>She caught it</td>
<td>See a doctor</td>
<td>9</td>
<td>3.05*</td>
</tr>
<tr>
<td></td>
<td>5, 1</td>
<td>S-thing is wrong with her brain</td>
<td>See a doctor</td>
<td>19</td>
<td>8.48*</td>
</tr>
<tr>
<td></td>
<td>5, 3</td>
<td>S-thing is wrong with her brain</td>
<td>Have an operation</td>
<td>28</td>
<td>13.37*</td>
</tr>
<tr>
<td></td>
<td>5, 5</td>
<td>S-thing is wrong with her brain</td>
<td>Help and support from her relatives</td>
<td>25</td>
<td>11.74*</td>
</tr>
<tr>
<td></td>
<td>5, 6</td>
<td>S-thing is wrong with her brain</td>
<td>Have therapy</td>
<td>13</td>
<td>5.22*</td>
</tr>
</tbody>
</table>

*Significant at Bonferroni-adjusted alpha of 0.0014

A hi log linear analysis was then conducted in order to investigate whether there was an association between the children’s response patterns (‘types’) and their age and gender. No significant association between children’s response patterns and their gender was found. However, a significant association between the children’s response patterns and their age was found for the mental illness diagnoses anorexia.
nervosa and dementia (see Tables 5.20-5.21). No significant association of response pattern and age was found for either depression or any of the physical illness diagnoses (broken arm, chicken pox, common cold).

Table 5.19: Profiles identified for each of the physical illness diagnoses

<table>
<thead>
<tr>
<th>Physical Illness</th>
<th>Profile</th>
<th>Cause</th>
<th>Consequence</th>
<th>N</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Broken Arm</td>
<td>6, 1</td>
<td>She fell off bike</td>
<td>See a doctor</td>
<td>55</td>
<td>26.95*</td>
</tr>
<tr>
<td></td>
<td>6, 2</td>
<td>She fell off bike</td>
<td>Stay at home</td>
<td>15</td>
<td>5.22*</td>
</tr>
<tr>
<td></td>
<td>6, 3</td>
<td>She fell off bike</td>
<td>Have an operation</td>
<td>46</td>
<td>23.15*</td>
</tr>
<tr>
<td>Chicken Pox</td>
<td>1, 1</td>
<td>She caught it</td>
<td>See a doctor</td>
<td>68</td>
<td>32.92*</td>
</tr>
<tr>
<td></td>
<td>1, 2</td>
<td>She caught it</td>
<td>Stay at home</td>
<td>36</td>
<td>24.78*</td>
</tr>
<tr>
<td>Common Cold</td>
<td>1, 1</td>
<td>She caught it</td>
<td>See a doctor</td>
<td>64</td>
<td>35.10*</td>
</tr>
<tr>
<td></td>
<td>1, 2</td>
<td>She caught it</td>
<td>Stay at home</td>
<td>49</td>
<td>17.72*</td>
</tr>
</tbody>
</table>

*Significant at Bonferroni-adjusted alpha of 0.0014

Post-hoc analysis showed that for anorexia nervosa ‘old’ children were more likely to choose the profile 4, 6 (cause: it’s to do with how she thinks and feels, consequence: she will need therapy) than ‘young’ and ‘middle’ children (see Table 5.20). For dementia, ‘young’ children were more likely to choose the profile 1,1 (cause: she caught it, consequence: she will need to see a doctor) than ‘middle’ and ‘old’ children, while ‘middle’ and ‘old’ children were more likely to chose the profile 5, 3 (cause: something is wrong with her brain, consequence: she will need an operation). ‘Middle’ and ‘old’ children were also more likely to have chosen profile 5, 5 (cause: something is wrong with her brain, consequence: she will need help and support from her relatives). ‘Young’ children were also more likely to chose the profile 5, 1 (cause: something is wrong with her brain, consequence: she will need to see a doctor) compared to ‘old’ children, while ‘old’ children were more likely to chose profile 5, 6 (cause: something is wrong with her brain, consequence: she will need therapy) than ‘young’ children (see Table 5.21).
Table 5.20: Profiles ('types') for anorexia nervosa analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Not choose 'type'</th>
<th>Profile (type) 1,1</th>
<th>Profile (type) 2,1</th>
<th>Profile (type) 2,3</th>
<th>Profile (type) 4,1</th>
<th>Profile (type) 4,3</th>
<th>Profile (type) 4,5</th>
<th>Profile (type) 4,6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>15</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Middle</td>
<td>19</td>
<td>3</td>
<td>4</td>
<td>8</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Old</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>7</td>
<td>5</td>
<td>11</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Total</td>
<td>41</td>
<td>9</td>
<td>9</td>
<td>24</td>
<td>18</td>
<td>9</td>
<td>12</td>
<td>122</td>
<td></td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (10)= 23.67, p < 0.01$

Post hoc tests:
(1) Profile 4,6 Old vs Young sig: $z (1)= 2.74, p < 0.01$
Old vs Middle sig: $z (1)= 2.00, p < 0.05$

No other paired comparisons significant.

Table 5.21: Profiles for dementia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Not choose 'type'</th>
<th>Profile (type) 1,1</th>
<th>Profile (type) 5,1</th>
<th>Profile (type) 5,3</th>
<th>Profile (type) 5,5</th>
<th>Profile (type) 5,6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>19</td>
<td>9</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>40</td>
</tr>
<tr>
<td>Middle</td>
<td>5</td>
<td>0</td>
<td>7</td>
<td>13</td>
<td>10</td>
<td>5</td>
<td>40</td>
</tr>
<tr>
<td>Old</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>13</td>
<td>14</td>
<td>8</td>
<td>42</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>9</td>
<td>19</td>
<td>28</td>
<td>25</td>
<td>13</td>
<td>122</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (8)= 53.98, p < 0.01$

Post hoc tests:
(1) Profile 1,1 Young vs Old sig: $z (1)= 3.97, p < 0.01$
Young vs Middle sig: $z (1)= 3.82, p < 0.01$
(2) Profile 5,3 Middle vs Young sig: $\chi^2 (1)= 3.80, p < 0.05$
Old vs Young sig: $\chi^2 (1)= 3.10, p < 0.05$
(3) Profile 5,5 Middle vs Young sig: $z (1)= 1.80, p < 0.05$
Old vs Young sig: $\chi^2 (1)= 5.70, p < 0.05$
(4) Profile 5,1 Young vs Old sig: $z (1)= 2.80, p < 0.01$
(5) Profile 5,6 Old vs Young sig: $z (1)= 1.80, p < 0.05$

No other paired comparisons significant.
5.4 Discussion

The present study investigated children's thinking about mental illness from a novel perspective, utilizing the naïve theory approach to cognitive development. The study therefore examined ontological distinctions by comparing children's thinking about mental and physical illnesses, in order to explore their ability to differentiate between the two. The study also investigated whether children were able to construct coherent causal-explanatory frameworks about mental and physical illness.

There was evidence of theory-like thinking in the children's responses. Firstly, the study found children developed an understanding of the ontological difference between physical illness and mental illness with age. Secondly, with respect to coherence, all the children, even the youngest, displayed coherent cause-consequence patterns in their thinking about physical illness. Finally, the patterns of paired causes and consequences produced by the children indicated that they were able to construct causal-explanatory understandings of mental and physical illness.

With respect to ontological distinctions, children's responses indicated an increasing understanding of the differences between mental and physical illness with age. In the case of the physical conditions, no age differences were found in children's choices of causes or consequences for any of the physical illnesses, suggesting that children's understanding of physical illness had been established in early childhood. For causes, 90% of the children chose contagion for chicken pox, 96% of children also chose 'she caught it' as the cause of a common cold, and 98% of children chose a bicycle accident as the cause for a broken arm. With respect to consequences, children tended to respond that the principal characters with chicken pox (62%), common cold (53%) and broken arm (43%) would need to see a doctor. They also tended to respond that the principal characters with common cold (43%) and chicken pox (32%) would need to stay at home, and that the principal character with a broken arm would need to have an operation (38%).

Age differences were found for children's responses to the causes and consequences
of the mental illness diagnoses however. Differences arose whereby younger children tended to respond with the same causes and consequences that they had for the physical illnesses, selecting contagion or contamination as the causes and providing ‘medicalised’ consequences. This suggests that these children were not differentiating between the two illness domains. For example for causes, 40% of ‘young’ children responded that the principal character had caught dementia, with 35% responding that depression was also caused by contagion. Similarly, for consequences 50% of ‘young’ children reported that the principal character diagnosed with dementia would need to see a doctor. Interestingly, some of the ‘young’ children did not provide similar responses for the two types of illness. For example, some ‘young’ children chose ‘it’s to do who how she thinks and feels’ as the cause of depression (40%) and anorexia nervosa (43%). For consequences however, very few children offered similar responses for the physical and mental illness diagnoses, with no ‘young’ children choosing ‘she will need to have therapy’ as a consequence of anorexia nervosa, and only 13% responding that the principal character with depression would need help and support from her family. Older children, however, did select different causes and consequences for the mental and physical illnesses. For example, for causes 79% of ‘old’ and 75% of ‘middle’ children chose ‘it’s to do with how she thinks and feels’ as the cause for depression, with 76% of ‘old’ children also choosing this cause for anorexia nervosa. For consequences, 31% of ‘old’ children responded that the principal character with anorexia nervosa would need to have therapy, with 50% of ‘old’ children responding that the principal character with depression would need help and support from her family.

With respect to the age differences found in children’s responses therefore, it appears that, for causes, what differs between younger and older children is that with age, there is a reduction in the number of children offering a contagion or contamination explanation. For consequences, younger children are more likely to provide ‘medicalised’ responses, similar to their responses to physical illness diagnoses.
Children’s responses about the causes and consequences of the physical illnesses displayed coherence and consensus in their thinking. For example, as already discussed, the majority choice for causes for both chicken pox and common cold was contagion, with ‘she fell off her bicycle’ the majority choice cause for broken arm. For consequences, the majority of children chose 'stay at home' or 'see a doctor' for both chicken pox and common cold and 'see a doctor' or 'have an operation' for broken arm. Children were less coherent and less consistent in their thinking about the mental illnesses however, which was particularly true in younger children. For example, for causes they provided a number of responses for dementia such as 'she caught it', 'something to do with her brain' and 'it's to do with how she thinks and feels'. Older children on the other hand agreed that dementia was 'to do with how she thinks and feels'. The lack of coherence and consistency was even more evident for the consequences of the mental illnesses, where younger children provided a greater variety of responses than older children.

Children showed evidence of a causal-explanatory framework for the physical illness conditions, in the small number of profiles and the patterns that they produced. For chicken pox and common cold, there were only two profiles, and three profiles for broken arm. The internal coherence of these profiles is an indication that the children's thinking was theory-like. No significant association of response pattern and age for any of the physical illnesses was found, further supporting the view that children's representations of these physical illnesses are formed in early childhood. In comparison, for the mental illnesses, children produced a greater number of profiles, indicating lesser consensus in children’s thinking about mental as opposed to physical illness. However, the fact that the patterns were nevertheless internally coherent, indicates that many of the children were applying causal-explanatory frameworks. Age differences in children’s response patterns provided evidence that children develop and refine these naïve theories with age. For example for dementia, ‘young’ children were more likely to respond with the profile ‘she caught it’ and ‘she will need to see a doctor’ than ‘middle’ and ‘old’ children. ‘Old’ children on the other hand demonstrated a different kind of reasoning. For example for anorexia
nervosa, they were more likely to provide the profile ‘it’s to do with how she thinks and feels’ and ‘she will need to have therapy’ than ‘young’ children.

Although the response patterns provided by younger children were differentiated compared to older children, their internal coherence demonstrates that the young children are not ‘atheoretical’. They were reasoning about the causes and consequences of the mental and physical illness diagnoses, but they made factual errors about the causes and consequences of the different mental illnesses. These ‘errors’ appear to be guided by intuitive theories, possibly developed through their experiences of common physical illness. Children gain information about common physical illnesses such as common colds, chicken pox and influenza early on in their development and it seems likely that this is their most extensive exposure to information about illness (Lau & Harman, 1983). Children’s early illness experience is likely to inform them that illnesses are contagious and cured by the medical profession, this may lead them to regard newly encountered types of illness as infectious and readily transmittable, treated through medical intervention (Brown et al., 1990; Kister & Patterson, 1980). This is supported by the results of the present study whereby younger children were more likely to provide contagion or contamination as an explanation for the causes of the mental illness diagnoses compared to older children. Similarly, younger children were also more likely to provide a more ‘medicalised’ response when questioned about the consequences of the mental illness diagnoses compared to older children. It appears that younger children were making errors based on what they know and understand about common physical illnesses that they have encountered.

Older children, however, demonstrated a different kind of knowledge and understanding of the causes and consequences of the mental illness diagnoses compared to younger children. Older children did not make predictions based on what they know about common physical illnesses. They appeared to understand that causation is not necessarily a result of contagion or contamination, but may result from internal as well as external agents. This increase in understanding enabled the older children to include psychological factors as potential causes of the illnesses

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presented and the notion that the mind can affect how a person feels; there is an interaction between mind and body. This was also true for the consequences of the mental illness diagnoses. The responses provided by the older children suggested that they were no longer relying on a medical model to explain the causes and consequences of the mental illnesses presented. This in turn suggests that it is during the course of middle childhood that the mental illness domain becomes differentiated from the physical illness domain, with different naïve theories being constructed to explain the different phenomena, which occur in these two domains.

Although clear age differences were found in children's knowledge and understanding of the causes and consequences of the mental illnesses, the only gender difference found in the present study was noted in the responses given by boys and girls to the consequences of depression. Girls were more likely to state that the principal character would need help and support from their relatives compared to boys. This is consistent with the findings of Study 2 and previous work (Ross & Ashok, 1983), where girls have been found to be more compassionate in their thinking about mental illness, not wanting those who suffer from mental disorder to become socially isolated.

5.5 Conclusion

The present study highlighted a number of issues. Firstly, the study provides support for the naïve theory approach to cognitive development; children showed ontological distinctions, with older children reasoning about mental illness as a distinct domain, they demonstrated causal-explanatory understandings of the causes and consequences of mental as well as physical illness, and were coherent in the responses that they gave. Secondly, the study shows evidence of developmental trends in children's thinking about the causes and consequences of mental illness. Younger children tended to rely on what they know about common physical illnesses when reasoning about the causes and consequences of mental illness, providing contagion and contamination explanations of cause and 'medicalised' consequences, while older children demonstrated a more sophisticated and accurate knowledge and
understanding of mental illness. Finally, the study found relatively few differences in children’s responses to the causes and consequences of mental illness according to their gender.

However, there are some issues, which need to be addressed in the next study. The physical illnesses that were presented to the children were all acute in nature, which may have influenced the findings of the present study, whereby children were reasoning based upon an acute-chronic criterion. It also appeared that the term ‘therapy’, contained on one of the ‘choice’ cards, caused confusion for a small minority of the younger children. The present study also omitted the remaining components of the Leventhal model, in order to focus on the cause/consequence patterns.

The next study therefore adopted a similar conceptual and theoretical stance to the present study by utilising Leventhal’s framework and adopting a naïve theory approach. However, the next study focused on the remaining components of the model, namely curability and timeline, and included a chronic physical illness for comparison. The study also utilised a similar methodological approach; a semi-structured interview utilising vignettes and a card selection task. The cards presented to children were informed by the results of the present study and Study 2; an explanation of the term ‘therapy’ was included on the relevant card in order to avoid any confusion for younger children. Finally, the study further explored the differences between boys’ and girls’ conceptions of mental illness, as although very few differences were found in the present study, those that were found were consistent with those identified in previous research.
CHAPTER 6

Study 4
Children’s Knowledge and Understanding of the Curability and Timeline of Mental Illness: A Naive Theory Approach

6.1 Introduction

The previous study highlighted developmental trends in children’s thinking about mental illness, with older children showing a more sophisticated and accurate understanding, while younger children tended to rely on what they know about common physical illnesses in order to reason about mental illness. The study also provided support for the naive theory approach to cognitive development; children showed ontological distinctions, coherence and causal-explanatory understandings of mental and physical illness. Furthermore, the study highlighted the utility of the naive theory approach in the investigation of children’s thinking about the causes and consequences of mental illness, and found relatively few gender differences in children’s responses to the causes and consequences of mental illness. Thus, the present study explored the remaining components of the Leventhal model from the same naive theory approach.

The design of the present study was informed by the previous study (Study 3). Firstly, the present study adopted a similar theoretical stance to Study 3; a naive theory approach, as children had been found to construct causal-explanatory understanding of causes and consequences. The present study, however, focused upon consequences, curability and timeline. The present study therefore examined children’s ontological distinctions through a comparison of their thinking about the consequences and curability/timeline of mental illness, and their thinking about the consequences and curability/timeline of physical illness. In order to examine children’s ability to construct coherent, causal-explanatory understandings about
mental and physical illness, the consequences and curability/timeline components of the Leventhal model were investigated in more depth. The coherence of children’s linked responses to these components was therefore explored.

Secondly, the study adopted a similar methodology and utilised a similar language to the previous study; a semi-structured interview technique incorporating a combination of diagnostic labels and vignettes describing behavioural symptoms of different types of mental illness, and a card selection task, where cards were generated by children’s own responses from previous work.

With respect to the vignettes presented to children in the present study, examination of the two most frequent profiles produced by children in Study 3 for the mental and physical illnesses highlighted that children were consistent in the responses that they gave for the causes of the different types of mental and physical illness (see Table 6.1).

Table 6.1: The two most frequent profiles for each mental and physical illness produced by children in Study 3

<table>
<thead>
<tr>
<th>Illness</th>
<th>Profile</th>
<th>Cause</th>
<th>Consequence</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>4,5</td>
<td>Thinks and feels</td>
<td>Help and support</td>
<td>38</td>
<td>31.15</td>
</tr>
<tr>
<td></td>
<td>4,6</td>
<td>Thinks and feels</td>
<td>Therapy</td>
<td>19</td>
<td>15.57</td>
</tr>
<tr>
<td>Anorexia</td>
<td>4,1</td>
<td>Thinks and feels</td>
<td>See a doctor</td>
<td>24</td>
<td>19.67</td>
</tr>
<tr>
<td>Nervosa</td>
<td>4,3</td>
<td>Thinks and feels</td>
<td>Have an operation</td>
<td>18</td>
<td>14.75</td>
</tr>
<tr>
<td>Dementia</td>
<td>5,3</td>
<td>Wrong with brain</td>
<td>Have an operation</td>
<td>28</td>
<td>22.95</td>
</tr>
<tr>
<td></td>
<td>5,5</td>
<td>Wrong with brain</td>
<td>Help and support</td>
<td>25</td>
<td>20.49</td>
</tr>
<tr>
<td>Chicken Pox</td>
<td>1,1</td>
<td>Caught it</td>
<td>See a doctor</td>
<td>68</td>
<td>55.74</td>
</tr>
<tr>
<td></td>
<td>1,2</td>
<td>Caught it</td>
<td>Stay at home</td>
<td>36</td>
<td>29.51</td>
</tr>
<tr>
<td>Cold</td>
<td>1,1</td>
<td>Caught it</td>
<td>See a doctor</td>
<td>64</td>
<td>52.46</td>
</tr>
<tr>
<td></td>
<td>1,2</td>
<td>Caught it</td>
<td>Stay at home</td>
<td>49</td>
<td>40.16</td>
</tr>
<tr>
<td>Broken Arm</td>
<td>6,1</td>
<td>Fell off bike</td>
<td>See a doctor</td>
<td>55</td>
<td>45.08</td>
</tr>
<tr>
<td></td>
<td>6,3</td>
<td>Fell off bike</td>
<td>Have an operation</td>
<td>46</td>
<td>37.70</td>
</tr>
</tbody>
</table>
These profiles highlighted consensus in children’s thinking about the causes of the mental and physical illness diagnoses. There was more variance in children’s responses about the consequences of the mental and physical illnesses however, where children’s responses lacked consensus. As a result, in the present study, children were presented with the cause of each of the mental and physical illness diagnoses, which was incorporated within each of the vignettes.

Furthermore, although the vignettes presented to children in the previous study were utilised again, all illnesses were not retained. The previous study incorporated physical illnesses exemplars that are acute in nature. Results obtained may therefore have been owing to children already possessing the knowledge that the physical illnesses presented are acute, and people tend to recover fairly quickly, whereas the mental illnesses are chronic and more long term. The present study therefore incorporated a chronic physical illness exemplar for comparison in order to investigate whether the responses that children gave were similar in nature to the other acute physical illnesses or similar to the mental illness exemplars. This would explore whether children had been reasoning based on an ‘acute-chronic’ criteria. Asthma therefore replaced common cold as the chronic physical illness exemplar. The cause for asthma, that the principal character had been born with it, was embedded in the vignette, as with the other mental and physical illness vignettes. This was also one of the causes that had been provided by the children who participated in the focus group studies. Principal characters in the vignettes were again given one of six names, with each child receiving all six names to make it clear that the vignettes were describing different individuals. The order of the names was randomised to control for order effects.

With respect to the consequences cards presented (see Table 6.2), children’s responses in Study 3 about the consequences of the mental and physical illnesses in the most frequent profiles were examined. It was evident that children’s responses incorporated a number of different types, ranging from medicalised consequences such as ‘see a doctor’ to psychological consequences such as ‘have therapy’. This
range of different types of consequences was therefore retained in the present study, although some adjustments were made to the presented consequence cards.

The cause and consequence given in the profile 4, 3 for anorexia nervosa (see Table 6.1): 'its to do with how she thinks and feels' and 'she will need to have an operation' was factually wrong. The consequence 'have an operation' is also an indication of a differing degree of severity within a medicalised response. This consequence was not included therefore, as the present study would directly ask children about the timeline and curability of the different mental and physical illnesses. 'See a doctor' was deemed appropriate as the medicalised consequence.

**Table 6.2:** Development of consequences cards presented to children in Studies 3 and 4

<table>
<thead>
<tr>
<th>Illness</th>
<th>Consequence Study 3</th>
<th>Consequences Study 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Help and support</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have therapy</td>
<td></td>
</tr>
<tr>
<td>Anorexia Nervosa</td>
<td>See a doctor</td>
<td>See a doctor</td>
</tr>
<tr>
<td></td>
<td>Have an operation</td>
<td>Have therapy</td>
</tr>
<tr>
<td>Dementia</td>
<td>Have an operation</td>
<td>Stay at home</td>
</tr>
<tr>
<td></td>
<td>Help and support</td>
<td></td>
</tr>
<tr>
<td>Chicken Pox</td>
<td>See a doctor</td>
<td>Help and Support</td>
</tr>
<tr>
<td></td>
<td>Stay at home</td>
<td></td>
</tr>
<tr>
<td>Cold</td>
<td>See a doctor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stay at home</td>
<td></td>
</tr>
<tr>
<td>Broken Arm</td>
<td>See a doctor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have an operation</td>
<td></td>
</tr>
</tbody>
</table>

The immanent justice consequence included in Study 3, 'she will have to be nice to her friend in the future', was also not included. The children who took part in the previous study only chose the immanent justice cause and consequence for depression. It is not illogical to say that the principal character had a diagnosis of
depression because ‘she was nasty to her friend’ and she will need to ‘be nice to her friend in future’, as it may make you feel sad to be nasty to a friend. However, the rationale for not including this in the present study was that it would be inappropriate to choose this as a cause and consequence for the other illness diagnoses.

Furthermore, children who took part in Study 3 did not choose the immanent justice cause or consequence for any of the other illness diagnoses. Finally, the previous study had highlighted that some of the children, particularly the younger children, had not understood the consequence ‘she will need to have therapy’. This consequence was included, but was more clearly defined on the card when presented to the children. The explanation ‘she will need to see a psychiatrist to talk about her problems’ was therefore included on the card. This explanation and choice of words was piloted with children of primary school age before commencing the study. The primary school children questioned understood this explanation to convey the meaning of ‘she will need to have therapy’ intended by the experimenter for the purposes of the present study.

The most frequent profiles highlighted that the responses given about the consequences of the physical illnesses seemed to indicate that the children had some idea of differing degrees of seriousness of illness. For example, children responded with two profiles for the physical illness diagnosis of ‘common cold’. The cause remained constant; ‘she caught it’. However, children responded that the principal character would either need to ‘stay at home’ or ‘see a doctor’. This further supported the investigation of what children know and understand about the curability and timeline of different mental and physical illnesses in the present study.

With respect to the timeline cards presented, Study 2 highlighted that children did not choose all categories presented, and that categories had to be collapsed for analysis. The present study therefore presented children with categories that were meaningful in terms of whether an illness was chronic or acute. Timeline categories were therefore divided into four categories; a relatively short term recovery time of ‘less than one month’, a middle term recovery time of ‘one month to six months’ and more long term recovery times of ‘six months to one year’ and ‘more than one year’.
As in Study 3, power calculations were carried out in order to ascertain the numbers of children needed to take part in the study to retain an accepted level of power. Gpower (Erdfelder et al, 1996) was again utilised for the calculation. An alpha of 0.05 and a 2-tailed chi-square test were chosen as options. It was decided that a sample size of 117 would, once again, be appropriate enabling the identification of a medium effect size, with power at 0.9 (see Table 5.3). Children were also divided into the same age groups as in previous studies; a ‘young’ group of children from Year 2, a ‘middle’ group of children from Year 4 and an ‘old’ group of children from Year 6.

As we have seen in Chapter 2, previous research has suggested that verbal intelligence may be a significant predictor of children’s ability to conceptualise illness (Patterson et al, 1999). It was therefore also decided to measure children’s verbal IQs in the present study using the British Picture Vocabulary Scale (BPVS) (Dunn, Dunn, Whetton & Pintilie, 1982). The aim was to investigate whether the responses that the children gave in respect to the consequences, timeline and curability of the mental and physical illnesses presented were related to their verbal IQ. More specifically, measuring children’s verbal IQ examined whether brighter children at a given age (i.e., children with a higher verbal IQ), held different theories from children with a lower verbal IQ at the same age, and whether the theories that brighter children hold are more similar to those held by older children. This in turn enabled the examination of whether cognitive ability influences children’s development within this domain. Verbal IQ was measured as opposed to non-verbal IQ because the tasks in the present study were language-based.

The present study therefore extended the findings of previous studies, but also tackled problems relating to methodology and theoretical stance adopted by previous research. Firstly, Study 3 demonstrated the utility of the naïve theory perspective and the five-component model of adult-illness understanding. The present study focused upon the remaining dimensions of the model, curability and timeline, and investigated the development of children’s thinking about mental as well as physical
illness from a naïve theory approach, examining: 1) ontological distinctions, 2) coherence in children’s thinking, and 3) children’s causal-explanatory understandings. The study therefore aimed to examine children’s ontological distinctions by comparing their thinking about mental illness with their thinking about physical illnesses, to explore children’s ability to differentiate between the two types of illnesses, thus marking out the particular domain of mental illness. The study also aimed to investigate whether children’s explanatory frameworks were indicative of a coherent, naïve theory-like understanding. Secondly, an appropriate language and methodology to use when investigating children’s knowledge and understanding of mental illness had been established by Studies 1 and 2, which the present study adopted; a semi-structured interview technique and a combination of diagnostic labels and vignettes. The cards that were presented to children in the present study were developed from the two most frequent profiles produced by children in Study 3 to the mental and physical illnesses. Finally, previous studies and existing work has highlighted that further examination is needed in order to clarify gender differences in children’s conceptions of the mentally ill and has suggested that verbal intelligence might be a significant predictor of children’s ability to conceptualise illness (Patterson et al, 1999). Children’s thinking about the curability and timeline of the different types of mental and physical illness therefore was also investigated for trends according to gender and verbal IQ.

6.2 Method

6.2.1 Design

The present study employed a 3 (age) x 2 (gender) x 6 (mental/physical illness) mixed design. The independent variables were age and gender of the participants, and diagnosis of the principal character. The independent variable diagnosis was embedded in the details of the information presented to the children in the vignettes. This was whether the principal character had a mental or physical illness diagnosis of depression, anorexia nervosa, dementia (Alzheimer’s type), chicken pox, broken arm or asthma. This gave rise to six conditions: adult female with depression, adult female with anorexia nervosa, adult female with dementia, adult female with chicken
pox, adult female with a broken arm and adult female with asthma. A female was depicted in each of the vignettes, as in the previous studies, to control for effects of gender of the principal character. The dependent variables were a) consequences; occurrences as a result of an illness, b) timeline; the duration of an illness, and c) curability; whether an illness is recoverable from. These were measured by children's responses to a card selection task inquiring for example what would happen to the principal character, whether the principal character could get better and if so, how long it would take the principal character to recover.

The study aimed to investigate children's naïve theories of mental illness, by investigating children's ontological differentiation between mental and physical illness and the children's ability to construct coherent, causal-explanatory understandings about the consequences and curability/timeline of different types of mental and physical illness. The study also investigated whether children's responses varied as a function of their age, gender and verbal IQ.

6.2.2 Participants
Children were recruited from two different schools. These were St. Augustine's Catholic Primary School in Kenilworth, Warwickshire and St. Joseph's Catholic Primary School, Warwickshire. Similar ethical procedures to previous studies were adopted (see Chapter 4, p. 73). Overall, a total of 118 children took part. Children were divided into three groups; a 'young' group of 39 children from Year 2, a 'middle' group of 41 children from Year 4 and an 'old' group of 38 children from Year 6. The study aimed for approximately equal numbers of pupils across each school year and approximately equal numbers of boys and girls (60 boys, 58 girls) (see Table 6.3).

6.2.3 Materials
Children were presented with a vignette describing a principal character diagnosed with depression, anorexia nervosa, dementia, chicken pox, broken arm or asthma, a card selection task incorporating a series of questions designed to investigate the children's choices in terms of the consequences, curability and timeline of the mental
and physical illness diagnoses, and the British Picture Vocabulary Scale (Dunn et al., 1982) (see Appendix 4 for full details of the interview schedule).

**Table 6.3:** Mean age of the children who took part in the study by age group and gender

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Gender</th>
<th>N</th>
<th>Mean Age</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>Girls</td>
<td>19</td>
<td>6.53</td>
<td>0.51</td>
</tr>
<tr>
<td>(Year 2)</td>
<td>Boys</td>
<td>20</td>
<td>6.25</td>
<td>0.44</td>
</tr>
<tr>
<td>Middle</td>
<td>Girls</td>
<td>21</td>
<td>8.52</td>
<td>0.51</td>
</tr>
<tr>
<td>(Year 4)</td>
<td>Boys</td>
<td>20</td>
<td>8.30</td>
<td>0.47</td>
</tr>
<tr>
<td>Old</td>
<td>Girls</td>
<td>18</td>
<td>10.61</td>
<td>0.50</td>
</tr>
<tr>
<td>(Year 6)</td>
<td>Boys</td>
<td>20</td>
<td>10.30</td>
<td>0.47</td>
</tr>
</tbody>
</table>

The vignettes presented to each child provided information about a principal character diagnosed with a mental or physical illness describing the cause and symptoms experienced. The vignettes were presented to children in the previous studies. Symptoms for mental illnesses were described according to the DSM IV (American Psychiatric Association, 1995), and physical illness symptoms drafted with the assistance of a medical practitioner.

Causes for each of the mental and physical illnesses were obtained from responses given by children in Study 3. Children received all six versions of the vignettes. These varied according to illness diagnosis.

Vignettes were as follows: adult female with depression, adult female with anorexia nervosa, adult female with dementia (Alzheimer’s type), adult female with chicken pox, adult female with a broken arm, adult female with asthma (see Figure 6.1).
Vignettes were followed by a card selection task, where children were asked to choose a consequence and respond about the curability and timeline of the different mental and physical illness diagnoses.

There were four consequence cards, inquiring whether the principal character would need to 'see a doctor', 'have therapy', 'stay at home' or would 'need help and support from relatives', two curability cards 'yes' and 'no', and four timeline/curability cards, 'less than 1 month', '1 month to 6 months', '6 months to 1 year' and 'more than 1 year'.

Children therefore received a total number of ten different consequence, curability and timeline cards.

Cards each measured 12cm in length and 6cm in width, and words contained on the cards were typed in capital letters in a clear bold black font.

In addition there were six cards, that were not presented to children but were utilised to determine the order of presentation of mental/physical illness type; depression, anorexia nervosa, dementia (Alzheimer’s type), chicken pox, broken arm and asthma. Children’s responses were documented on a record sheet (see Appendix 4).

The British Picture Vocabulary Scale (Dunn et al, 1982) was also administered, in order to investigate whether the responses that the children gave were related to their verbal IQ. This was administered according to the instructions provided in the manual.

6.2.4 Procedure
Card presentation was randomly ordered for each individual child to control for possible order effects. As in the previous studies, the six cards relating to mental and physical illness diagnosis and the four consequence cards were therefore shuffled by the researcher prior to the start of each interview.
**Figure 6.1: Vignettes presented to children**

**Depression:**
This is about a woman called* …… She has got Depression. Her depression is caused by how she thinks and feels. Depression means that she feels sad all of the time and doesn’t like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn’t worth anything and blames herself when things go wrong. She also finds it hard to sleep.

**Anorexia Nervosa:**
This is about a woman called* …… She has got anorexia nervosa. Her anorexia is caused by how she thinks and feels. She has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

**Dementia (Alzheimer’s Type):**
This is about a woman called* …… She has got dementia. She has got dementia because there is something wrong with her brain. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn’t recognise her family anymore and needs to be looked after all the time.

**Chicken Pox:**
This is about a woman called* …… She has got chicken pox. She got chicken pox because she caught it from her sister and now she doesn’t feel very well and isn’t very hungry. She is covered in a rash of red spots that have got crusts that will drop off. The rash is very itchy so she has to try not to scratch the spots.

**Broken Arm:**
This is about a woman called* …… She has broken her arm. She broke her arm when she fell off her bike. Her arm is swollen and bruised and it really hurts when she tries to wiggle her fingers.

**Asthma:**
This is about a woman called* …… She has got asthma. She has had asthma all her life. This means that sometimes her chest feels tight and she gets wheezy. When this happens she finds it hard to breathe and she coughs a lot.

*The names Jane, Sarah, Ann, Mary, Susan and Rachel were chosen at random by the researcher in order to control for effects as a result of the name given to the principal character in the vignette and to make clear to children that each vignette described a different individual.*
Children were, again, interviewed individually to avoid dominance effects from more confident children. Each child was informed that they would be presented with a number of vignettes describing a person diagnosed with a mental/physical illness and the cause and symptoms experienced, and that this would be followed by a card selection task in relation to the person described in the vignette. Children were also assured of anonymity and informed that they should choose whichever cards they felt to be right.

Once the order of presentation of mental and physical illness vignettes was determined, each section of the interview began with the participant being read a vignette describing an adult female diagnosed with the first mental or physical illness (depression, anorexia nervosa, dementia, chicken pox, broken arm or asthma).

This was then followed by a card selection task, in which the child was questioned about the consequence of the mental or physical illness described. Children were asked ‘what will happen to this person because they have...........(depression, anorexia nervosa, dementia, chicken pox, broken arm, asthma)?’ Children were presented with a choice of four possible consequences for each mental and physical illness, ‘see a doctor’, ‘have therapy’, ‘stay at home’, ‘need help and support’. Cards were presented simultaneously, with each card being read aloud in order to make sure that the child understood what was written on each of the cards. Once the experimenter was sure that this was the case, the child was asked to choose the most likely consequence of the mental or physical illness of the person described in the vignette.

Once a consequence had been established, the child was asked about the curability and timeline of the mental or physical illness in question. The child was first asked ‘do you think this person with........ (depression, anorexia nervosa, dementia, chicken pox, broken arm, asthma) can get better?’ The child was presented with a choice of two cards ‘yes’ or ‘no’ and encouraged to choose just one card. If a child responded that the principal character could get better, they were then asked ‘how long do you think it will take the person with........ (depression, anorexia nervosa
dementia, chicken pox, broken arm, asthma) will get better?' The child was presented with a series of four cards ‘less than 1 month’, ‘1 month to 6 months’, ‘6 months to 1 year’ and ‘more than 1 year’. Cards were read aloud and children encouraged to choose just one card.

All answers were documented on a recording sheet. This process was repeated for each of the mental and physical illness diagnoses. Any child who was noted to have difficulties with reading was given assistance when judged necessary.

Finally, the British Picture Vocabulary Scale (Dunn et al., 1982) was also administered, in order to investigate whether the responses that the children gave were related to their verbal IQ. This scale was either administered at the start of each interview or at the end, in order to control for effects of fatigue.

6.3 Results

Children’s responses to consequences and curability/timeline were analysed using hi log linear in order to assess whether categories of response were associated with age, gender or verbal IQ. Children’s response patterns to the consequences and curability/timeline of the different mental and physical illness diagnoses were analysed using configural frequency analysis. Results of the configural frequency analysis were further analysed using a hi log linear technique in order to examine response patterns for trends associated with age, gender or verbal IQ.

For the interpretation of verbal IQ, the children were divided into two groups, a ‘low’ IQ group and a ‘high’ IQ group. The mean standardised score of 100 was used to divide children into ‘low’ and ‘high’ IQ groups. The ‘high’ IQ group was characterised by children who had a standardised score at or above the mean standardised score and the ‘low’ IQ group was characterised by children who had a standardised score below the mean standardised score (see Table 6.4).
Table 6.4: Numbers of children in the high and low verbal IQ groups by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>High verbal IQ</th>
<th>Low verbal IQ</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>24</td>
<td>14</td>
<td>38</td>
</tr>
<tr>
<td>Middle</td>
<td>27</td>
<td>14</td>
<td>41</td>
</tr>
<tr>
<td>Old</td>
<td>15</td>
<td>24</td>
<td>39</td>
</tr>
<tr>
<td>Total</td>
<td>66</td>
<td>52</td>
<td>118</td>
</tr>
</tbody>
</table>

6.3.1 Differences associated with age, gender and verbal IQ (Hi Log linear Analysis)

Results for consequences, curability and timeline were analysed using hi log linear in order to assess whether categories of response were associated with age, gender and verbal IQ.

6.3.1.1 Consequences associated with age group, gender and verbal IQ

No effect of gender for any of the mental or physical illness diagnoses was found. Significant effects of age were found for principal characters diagnosed with depression and anorexia nervosa but not for principal characters diagnosed with dementia, chicken pox, broken arm or asthma (see Tables 6.5-6.10). Significant effects of verbal IQ were also noted for principal characters diagnosed with anorexia nervosa, broken arm and asthma, but not for depression, dementia or chicken pox (see Tables 6.11-6.13 for details).

Post hoc analyses showed that for depression (see Table 6.5), ‘young’ children were more likely to choose ‘she will need to see a doctor’ compared to children from the ‘old’ age group, whereas children from the ‘old’ age group were more likely to choose ‘she will need to have therapy’ compared to children from both the ‘young’ and ‘middle’ age groups. For anorexia nervosa (see Table 6.6), ‘old’ children were more likely to choose ‘she will need to have therapy’ compared to children from the ‘young’ age group.
Table 6.5: Consequences of depression analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>8</td>
<td>13</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>Middle</td>
<td>11</td>
<td>8</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td>Old</td>
<td>9</td>
<td>0</td>
<td>1</td>
<td>28</td>
</tr>
</tbody>
</table>

Total \(28\) \(21\) \(4\) \(65\)

Log linear significant effect of age: \(\chi^2 (6) = 22.36, p < 0.01\)

Post hoc tests:
(1) See a doctor Young vs Old sig: \(\chi^2 (1) = 12.96, p < 0.01\)
(2) Have therapy Old vs Young sig: \(\chi^2 (1) = 5.99, p < 0.05\)
Old vs Middle sig: \(\chi^2 (1) = 4.14, p < 0.05\)

No other paired comparisons significant.

Table 6.6: Consequences of anorexia nervosa analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>8</td>
<td>22</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Middle</td>
<td>11</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>Old</td>
<td>3</td>
<td>19</td>
<td>0</td>
<td>16</td>
</tr>
</tbody>
</table>

Total \(22\) \(56\) \(2\) \(38\)

Log linear significant effect of age: \(\chi^2 (6)= 14.84, p < 0.05\)

Post hoc tests:
(1) Have therapy Old vs Young sig: \(\chi^2 (1) = 4.27, p < 0.05\)

No other paired comparisons significant.

Although not significant, for dementia the frequencies indicated that younger children tended to choose 'see a doctor' as a consequence, while older children tended to choose 'she will need help and support' (see Table 6.7). For chicken pox, children tended to choose 'see a doctor' as the consequence (see Table 6.8). With reference to broken arm, children tended to respond that the consequence was 'see a doctor' (see Table 6.9). For a diagnosis of asthma, children tended to provide 'see a
doctor' as the consequence (see Table 6.10).

Table 6.7: Consequences of dementia analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>7</td>
<td>18</td>
<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Middle</td>
<td>12</td>
<td>16</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Old</td>
<td>20</td>
<td>10</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>44</td>
<td>9</td>
<td>26</td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Table 6.8: Consequences of chicken pox analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>0</td>
<td>32</td>
<td>7</td>
</tr>
<tr>
<td>Middle</td>
<td>1</td>
<td>28</td>
<td>12</td>
</tr>
<tr>
<td>Old</td>
<td>2</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>Total</td>
<td>3</td>
<td>78</td>
<td>37</td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Table 6.9: Consequences of broken arm analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>0</td>
<td>33</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Middle</td>
<td>2</td>
<td>32</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Old</td>
<td>4</td>
<td>31</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>96</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Log linear effect of age not significant
Table 6.10: Consequences of asthma analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>5</td>
<td>30</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Middle</td>
<td>3</td>
<td>34</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Old</td>
<td>2</td>
<td>29</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>93</strong></td>
<td><strong>12</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

Post hoc analyses also highlighted for the diagnosis of anorexia nervosa that children in the ‘high’ IQ group were more likely to choose ‘she will need help and support’ than children in the ‘low’ IQ group (see Table 6.11).

For broken arm (see Table 6.12), children in the ‘low’ IQ group were more likely to choose ‘she will need help and support from her relatives’ compared to children in the ‘high’ IQ group. Children in the ‘high’ IQ group on the other hand were more likely to choose ‘see a doctor’ compared to children in the ‘low’ IQ group. For asthma (see Table 6.13), children in the ‘low’ IQ group were more likely to choose ‘she will need to have therapy’ compared to children in the ‘high’ IQ group, but frequencies of this response were extremely low overall.

Table 6.11: Consequences of anorexia nervosa analysed by verbal IQ

<table>
<thead>
<tr>
<th>IQ Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>19</td>
<td>32</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>Low</td>
<td>3</td>
<td>24</td>
<td>0</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>56</strong></td>
<td><strong>2</strong></td>
<td><strong>38</strong></td>
</tr>
</tbody>
</table>

Log linear significant effect of verbal IQ: $\chi^2 (3)= 8.21$, p < 0.05

Post hoc tests: (1) Help and support High IQ vs Low IQ sig: $\chi^2 (1) = 3.91$, p < 0.05

No other paired comparisons significant.
Table 6.12: Consequences of broken arm analysed by verbal IQ

<table>
<thead>
<tr>
<th>IQ Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>0</td>
<td>69</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Low</td>
<td>6</td>
<td>27</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 6 96 13 3

Log linear significant effect of verbal IQ: $\chi^2 (3) = 15.30, p < 0.01$

Post hoc tests:
1. Help and support
   - Low IQ vs High IQ sig: z(1) = 3.06, p < 0.01
2. See a doctor
   - High IQ vs Low IQ sig: $\chi^2 (1) = 6.34, p < 0.05$

No other paired comparisons significant.

Table 6.13: Consequences of asthma analysed by verbal IQ

<table>
<thead>
<tr>
<th>IQ Group</th>
<th>Help and Support</th>
<th>See a Doctor</th>
<th>Stay at Home</th>
<th>Have Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>8</td>
<td>65</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Low</td>
<td>2</td>
<td>28</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Total 10 93 12 3

Log linear significant effect of verbal IQ: $\chi^2 (3) = 10.36, p < 0.05$

Post hoc tests:
1. Have therapy
   - Low IQ vs High IQ sig: z(1) = 1.82, p < 0.05

No other paired comparisons significant.

6.3.1.2 Timeline/curability associated with age group, gender and verbal IQ

For the purpose of analysis, curability and timeline were pooled by incorporating the category ‘never’ in addition to the other timeline categories when coding data.

Significant age effects were found for principal characters diagnosed with depression, anorexia nervosa, dementia and broken arm, but not for principal characters diagnosed with chicken pox or asthma. Significant effects of gender were found for the physical diagnoses chicken pox and broken arm, but not for any of the other mental or physical illness diagnoses. A significant effect of verbal IQ was also noted for principal characters with a broken arm, but not for any of the other mental/physical diagnoses (see Tables 6.14-6.22).
With reference to depression (see Table 6.14), ‘young’ children were more likely to choose ‘less than 1 month’ compared to ‘middle’ and ‘old’ children. ‘Middle’ and ‘old’ children however, were more likely to choose ‘1 month to 6 months’ as a recovery time compared to ‘young’ children.

Table 6.14: Timeline/curability of depression by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>19</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>Middle</td>
<td>10</td>
<td>12</td>
<td>9</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Old</td>
<td>3</td>
<td>17</td>
<td>12</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 32 31 26 21 8

Log linear significant effect of age: $\chi^2 (6) = 31.95$, $p < 0.01$

Post hoc tests:
1. Less than 1 month
   - Young vs Middle sig: $\chi^2 (1) = 4.12$, $p > 0.05$
   - Young vs Old sig: $\chi^2 (1) = 13.78$, $p > 0.01$
2. 1 month to 6 months
   - Middle vs Young sig: $\chi^2 (1) = 6.48$, $p > 0.05$
   - Old vs Young sig: $\chi^2 (1) = 14.18$, $p > 0.01$

No other paired comparisons significant.

For a diagnosis of anorexia nervosa (see Table 6.15), ‘young’ children were more likely to choose ‘less than 1 month’ compared to ‘old’ children, whereas ‘old’ children were more likely to choose ‘more than 1 year’ compared to both ‘young’ and ‘middle’ children.

For dementia (see Table 6.16), ‘young’ children were more likely to choose ‘less than 1 month’, ‘1 month to 6 months’ and ‘6 months to 1 year’ than ‘old’ children, whereas ‘old’ children were more likely to choose ‘never’ compared to ‘young’ children and ‘middle’ children.

For broken arm (see Table 6.17), ‘old’ children were more likely to choose ‘6 months to a year’ compared to ‘young’ children.
Table 6.15: Timeline/curability of anorexia nervosa by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>11</td>
<td>13</td>
<td>8</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Middle</td>
<td>6</td>
<td>12</td>
<td>16</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Old</td>
<td>2</td>
<td>6</td>
<td>13</td>
<td>15</td>
<td>2</td>
</tr>
</tbody>
</table>

Total: 19 31 37 25 6

Log linear significant effect of age: $\chi^2 (6) = 20.94, p < 0.01$

Post hoc tests:
(1) Less than 1 month Young vs Old sig: $\chi^2 (1) = 5.68, p > 0.05$
(2) More than 1 year Old vs Young sig: $\chi^2 (1) = 5.79, p > 0.05$
(3) Old vs Middle sig: $\chi^2 (1) = 6.39, p > 0.05$

No other paired comparisons significant.

Table 6.16: Timeline/curability of dementia by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>5</td>
<td>7</td>
<td>11</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Middle</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>17</td>
<td>13</td>
</tr>
<tr>
<td>Old</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>8</td>
<td>27</td>
</tr>
</tbody>
</table>

Total: 7 10 20 35 46

Log linear significant effect of age: $\chi^2 (6) = 14.07, p < 0.05$

Post hoc tests:
(1) Less than 1 month Young vs Old sig: $z (1) = 1.81, p > 0.05$
(2) 1 month to 6 months Young vs Old sig: $z (1) = 2.33, p < 0.01$
(3) 6 months to 1 year Young vs Old sig: $\chi^2 (1) = 4.06, p > 0.05$
(2) Never Old vs Young sig: $\chi^2 (1) = 22.13, p > 0.01$
(2) Never Old vs Middle sig: $\chi^2 (1) = 10.69, p > 0.01$

No other paired comparisons significant.
Table 6.17: Timeline/curability of broken arm by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>7</td>
<td>25</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Middle</td>
<td>11</td>
<td>17</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Old</td>
<td>9</td>
<td>21</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Total 27 63 19 8 1

Log linear significant effect of age: $\chi^2 (6) = 15.40, p < 0.05$

Post hoc tests: 
(1) 6 months to 1 year
Old vs Young sig: $z (1) = 1.73, p > 0.05$

No other paired comparisons significant.

Although no significant associations of age were found for timeline/curability for chicken pox and asthma, the frequencies indicated that for chicken pox the majority of children tended to respond that the principal character would recover in less than 1 month (see Table 6.18).

Table 6.18: Timeline/curability of chicken pox by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>34</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Middle</td>
<td>32</td>
<td>7</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Old</td>
<td>33</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

Total 99 12 4 3

Log linear effect of age not significant

For asthma, children tended to respond that the principal character would never recover (see Table 6.19).
Table 6.19: Timeline/curability of asthma by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>6</td>
<td>2</td>
<td>6</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>Middle</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>7</td>
<td>22</td>
</tr>
<tr>
<td>Old</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
<td><strong>8</strong></td>
<td><strong>11</strong></td>
<td><strong>26</strong></td>
<td><strong>63</strong></td>
</tr>
</tbody>
</table>

Log linear effect of age not significant

With reference to gender, for chicken pox (see Table 6.20), post hoc analyses highlighted that girls were more likely to choose ‘less than 1 month’ for the principal character to recover compared to boys. For broken arm, (see Table 6.21), girls were more likely to choose ‘less than 1 month’ compared to boys, whereas boys were more likely to choose ‘more than 1 year’ than girls.

With reference to verbal IQ, for a diagnosis of broken arm (see Table 6.22), children in the ‘high’ IQ group were more likely to choose ‘1 month to 6 months’ compared to children in the ‘low’ IQ group, whereas children in the ‘low’ IQ group were more likely to choose ‘more than 1 year’ than children in the ‘high’ IQ group.

Table 6.20: Timeline/curability of chicken pox by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>45</td>
<td>8</td>
<td>4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Girls</td>
<td>54</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>99</strong></td>
<td><strong>12</strong></td>
<td><strong>4</strong></td>
<td><strong>3</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

Log linear significant effect of gender: $\chi^2 (3)= 13.00, p < 0.01$

Post hoc tests: (1) Less than 1 month Girls vs Boys sig: $\chi^2 (1) = 5.88, p > 0.05$

No other paired comparisons significant.
Table 6.21: Timeline/curability of broken arm by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>8</td>
<td>31</td>
<td>14</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Girls</td>
<td>19</td>
<td>32</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Total: 27 63 19 8 1

Log linear significant effect of gender: \( \chi^2 (3) = 13.45, p < 0.01 \)

Post hoc tests:
1. Less than 1 month Girls vs Boys sig: \( \chi^2 (1) = 5.25, p > 0.05 \)
2. More than 1 year Boys vs Girls sig: \( z (1) = 1.77, p > 0.05 \)

No other paired comparisons significant.

Table 6.22: Timeline/curability of broken arm by verbal IQ

<table>
<thead>
<tr>
<th>IQ Group</th>
<th>Less than 1 month</th>
<th>1 month to 6 months</th>
<th>6 months to 1 year</th>
<th>More than 1 year</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>High IQ</td>
<td>17</td>
<td>48</td>
<td>11</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Low IQ</td>
<td>10</td>
<td>15</td>
<td>8</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

Total: 27 63 19 8 1

Log linear significant effect of verbal IQ: \( \chi^2 (3) = 9.15, p < 0.05 \)

Post hoc tests:
1. 1 month to 6 months High IQ vs Low IQ sig: \( \chi^2 (1) = 5.21, p > 0.05 \)
2. More than 1 year Low IQ vs High IQ sig: \( z (1) = 2.15, p > 0.01 \)

No other paired comparisons significant.

6.3.2 Children’s response patterns (configural frequency analysis)

In order to investigate children’s response patterns to the consequences and curability/timeline of the different mental/physical illnesses, a configural frequency analysis (CFA) was carried out. Each of the consequences and curability/timeline cards were allocated a number as follows (see Figure 6.2).
Figure 6.2: Allocated numbers for consequence and curability/timeline cards

<table>
<thead>
<tr>
<th>Consequence</th>
<th>No</th>
<th>Curability/timeline</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>She will need help and support</td>
<td>1</td>
<td>Less than 1 month</td>
<td>1</td>
</tr>
<tr>
<td>She will need to see a doctor</td>
<td>2</td>
<td>1 month to 6 months</td>
<td>2</td>
</tr>
<tr>
<td>She will have to stay at home</td>
<td>3</td>
<td>6 months to 1 year</td>
<td>3</td>
</tr>
<tr>
<td>She will need to have therapy</td>
<td>4</td>
<td>More than 1 year</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Never</td>
<td>5</td>
</tr>
</tbody>
</table>

This gave rise to 20 possible response patterns for each mental/physical illness. Each child was allocated a response pattern based on their choice of consequence and curability/timeline cards for each of the mental and physical illness diagnoses. For example, a child responding with the consequence ‘she will need to see a doctor’ and curability/timeline of ‘less than 1 month’ would be allocated a response pattern of ‘2, 1’. Similarly, a child stating that the principal character would ‘need help and support from her relatives’, but would ‘never’ recover would be allocated a response pattern of ‘1, 5’.

The data were then subjected to CFA in order to examine the causal-explanatory frameworks, which underlay the children’s responses and to ascertain the frequencies of the various ‘types’ (pairs of consequences and timeline/curability). A number of ‘types’, which occurred significantly more frequently that would be expected by chance were identified for each of the mental illnesses: depression (3), anorexia nervosa (3), dementia (2), chicken pox (2), broken arm (3), asthma (2). Overall, the different profiles obtained for each mental and physical illness highlighted commonality in the consequences but variation in the curability/timeline chosen, with the exception of dementia and chicken pox (see Tables 6.23 and 6.24 for the profiles (types) identified for each mental and physical illness diagnosis; the first number in the ‘profile’ column denotes the consequence and the second the curability/timeline).
Table 6.23: Profiles identified for each of the mental illness diagnoses

<table>
<thead>
<tr>
<th>Mental Illness</th>
<th>Profile</th>
<th>Consequence</th>
<th>Curability/Timeline</th>
<th>N</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>4,1</td>
<td>Have therapy</td>
<td>Less than 1 month</td>
<td>14</td>
<td>3.34*</td>
</tr>
<tr>
<td></td>
<td>4,2</td>
<td>Have therapy</td>
<td>1 month to 6 months</td>
<td>18</td>
<td>4.98*</td>
</tr>
<tr>
<td></td>
<td>4,3</td>
<td>Have therapy</td>
<td>6 months to 1 year</td>
<td>18</td>
<td>4.98*</td>
</tr>
<tr>
<td>Anorexia Nervosa</td>
<td>2,2</td>
<td>See a doctor</td>
<td>1 month to 6 months</td>
<td>14</td>
<td>3.34*</td>
</tr>
<tr>
<td></td>
<td>2,3</td>
<td>See a doctor</td>
<td>6 months to 1 year</td>
<td>17</td>
<td>4.57*</td>
</tr>
<tr>
<td></td>
<td>2,4</td>
<td>See a doctor</td>
<td>More than 1 year</td>
<td>14</td>
<td>3.34*</td>
</tr>
<tr>
<td>Dementia</td>
<td>1,5</td>
<td>Help and Support</td>
<td>Never</td>
<td>26</td>
<td>8.28*</td>
</tr>
<tr>
<td></td>
<td>2,4</td>
<td>See a doctor</td>
<td>More than 1 year</td>
<td>14</td>
<td>3.34*</td>
</tr>
</tbody>
</table>

*Significant at Bonferroni-adjusted alpha of 0.0025

Table 6.24: Profiles identified for each of the physical illness diagnoses

<table>
<thead>
<tr>
<th>Physical Illness</th>
<th>Profile</th>
<th>Consequence</th>
<th>Curability/Timeline</th>
<th>N</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken Pox</td>
<td>2,1</td>
<td>See a doctor</td>
<td>Less than 1 month</td>
<td>64</td>
<td>23.92*</td>
</tr>
<tr>
<td></td>
<td>3,1</td>
<td>Stay at home</td>
<td>Less than 1 month</td>
<td>32</td>
<td>10.75*</td>
</tr>
<tr>
<td>Broken Arm</td>
<td>2,1</td>
<td>See a doctor</td>
<td>Less than 1 month</td>
<td>20</td>
<td>5.80*</td>
</tr>
<tr>
<td></td>
<td>2,2</td>
<td>See a doctor</td>
<td>1 month to 6 months</td>
<td>56</td>
<td>20.63*</td>
</tr>
<tr>
<td></td>
<td>2,3</td>
<td>See a doctor</td>
<td>6 months to 1 year</td>
<td>14</td>
<td>3.34*</td>
</tr>
<tr>
<td>Asthma</td>
<td>2,4</td>
<td>See a doctor</td>
<td>More than 1 year</td>
<td>23</td>
<td>7.04*</td>
</tr>
<tr>
<td></td>
<td>2,5</td>
<td>See a doctor</td>
<td>Never</td>
<td>43</td>
<td>15.27*</td>
</tr>
</tbody>
</table>

*Significant at Bonferroni-adjusted alpha of 0.0025

A hi log linear analysis was then conducted in order to investigate whether there was an association between the children’s response patterns and their age, gender and verbal IQ. Significant associations between the children’s response patterns and their age was found for the mental illness diagnoses of depression and anorexia nervosa (see Tables 6.25-6.26). No significant association of response pattern and age was found for dementia or any of the physical illness diagnoses (broken arm,
chicken pox, asthma).

With reference to depression, ‘young’ and ‘middle’ children were more likely to choose profile 4, 1 (consequence: have therapy, curability/timeline: less than 1 month) than ‘old’ children, whereas ‘old’ children were more likely to choose profile 4, 2 (consequence: have therapy, curability/timeline: 1 month to 6 months) than ‘young’ children (see Table 6.25).

For a diagnosis of anorexia nervosa, ‘young’ children were more likely to choose profile 2, 2 (consequence: see a doctor, curability/timeline: 1 month to 6 months) than ‘old’ children (see Table 6.26).

Significant associations between children’s response patterns and their gender was found for a diagnosis of broken arm, but not for any of the other diagnoses. Post hoc analyses showed that girls were more likely to choose profile 2, 1 (consequence: see a doctor, curability/timeline: less than 1 month) than boys (see Table 6.27).

Table 6.25: Profiles (‘types’) for depression analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Not choose ‘type’</th>
<th>Profile 4,1</th>
<th>Profile 4,2</th>
<th>Profile 4,3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>29</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>39</td>
</tr>
<tr>
<td>Middle</td>
<td>23</td>
<td>7</td>
<td>5</td>
<td>6</td>
<td>41</td>
</tr>
<tr>
<td>Old</td>
<td>16</td>
<td>1</td>
<td>12</td>
<td>9</td>
<td>38</td>
</tr>
</tbody>
</table>

Total 68 14 18 18 118

Log linear significant effect of age: $\chi^2 (4)= 14.22, p < 0.01$

Post hoc tests:
1. Profile 4,1 Young vs Old sig: $z (1)= 3.01, p < 0.01$
   Middle vs Old sig: $z (1)= 2.49, p < 0.01$
2. Profile 4,2 Old vs Young sig: $z (1)= 1.96, p < 0.05$

No other paired comparisons significant.
Table 6.26: Profiles (‘types’) for anorexia nervosa analysed by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Not choose ‘type’</th>
<th>Profile (‘type’) 2,2</th>
<th>Profile (‘type’) 2,3</th>
<th>Profile (‘type’) 2,4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>23</td>
<td>9</td>
<td>3</td>
<td>4</td>
<td>39</td>
</tr>
<tr>
<td>Middle</td>
<td>28</td>
<td>4</td>
<td>7</td>
<td>2</td>
<td>41</td>
</tr>
<tr>
<td>Old</td>
<td>22</td>
<td>1</td>
<td>7</td>
<td>8</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>73</td>
<td>14</td>
<td>17</td>
<td>14</td>
<td>118</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (4) = 16.18, p < 0.01$
Post hoc tests: (1) Profile 2,2 Young vs Old sig: $\chi^2 (1) = 7.13, p < 0.01$
No other paired comparisons significant.

Table 6.27: Profiles (‘types’) for broken arm analysed by gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Not choose ‘type’</th>
<th>Profile (‘type’) 2,1</th>
<th>Profile (‘type’) 2,2</th>
<th>Profile (‘type’) 2,3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>19</td>
<td>3</td>
<td>28</td>
<td>10</td>
<td>60</td>
</tr>
<tr>
<td>Girls</td>
<td>9</td>
<td>17</td>
<td>28</td>
<td>4</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>20</td>
<td>56</td>
<td>14</td>
<td>118</td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (2) = 14.35, p < 0.01$
Post hoc tests: (1) Profile 2,1 Girls vs Boys sig: $\chi^2 (1) = 8.80, p < 0.01$
No other paired comparisons significant.

A significant association between children’s response patterns and their verbal IQ was found for depression. Children in the ‘low’ IQ group were more likely to choose profile 4, 1 (consequence: have therapy, curability/timeline: less than 1 month) than children in the ‘high’ IQ group. Children in the ‘high’ IQ group on the other hand were more likely to choose the profile 4, 3 (consequence: have therapy, curability/timeline: 6 months to 1 year) than children in the ‘low’ IQ group (see Table 6.28).
Table 6.28: Profiles (‘types’) for depression analysed by verbal IQ

<table>
<thead>
<tr>
<th>IQ Group</th>
<th>Not choose (‘type’)</th>
<th>Profile (‘type’) 4,1</th>
<th>Profile (‘type’) 4,2</th>
<th>Profile (‘type’) 4,3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>47</td>
<td>4</td>
<td>12</td>
<td>15</td>
<td>78</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>21</td>
<td>10</td>
<td>6</td>
<td>3</td>
<td>40</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>68</strong></td>
<td><strong>14</strong></td>
<td><strong>18</strong></td>
<td><strong>18</strong></td>
<td><strong>118</strong></td>
</tr>
</tbody>
</table>

Log linear significant effect of age: $\chi^2 (2)= 10.75$, $p < 0.01$

Post hoc tests:
(1) Profile 4,1 Low IQ vs High IQ sig: $\chi^2 (1)= 7.36$, $p < 0.01$
(2) Profile 4,3 High IQ vs Low IQ sig: $\chi^2 (1)= 4.11$, $p < 0.05$

No other paired comparisons significant.

6.4 Discussion

The present study investigated children’s thinking about mental illness from a naïve theory perspective. The study examined ontological distinctions by comparing children’s thinking about mental and physical illnesses, in order to explore their ability to differentiate between the two. The study also explored whether children were able to construct coherent, causal-explanatory frameworks about the consequences and curability/timeline of mental and physical illness, and whether their responses varied as a function of their age, gender and verbal IQ.

Overall, there was evidence of theory-like thinking in children’s responses; the children demonstrated ontological distinctions and the patterns of paired consequences and curability/timeline cards produced by the children indicated that they were able to construct coherent causal-explanatory understandings of physical illness, but developed coherence in their thinking about mental illness with age.

With respect to ontological distinction, the study revealed that children showed an increasing understanding of the differences between mental and physical illness with age; younger children did not clearly differentiate between mental and physical illness, while older children provided different consequences and curability/timelines...
for the two types of illness. However, no age differences were found in children’s choices of consequences and curability/timelines for any of the physical illnesses. For consequences, 81% of children responded that the principal character with a broken arm would need to see a doctor, while 79% of children also chose ‘see a doctor’ as the consequence for asthma. Similarly, for chicken pox 66% of children chose ‘see a doctor’, and 31% ‘stay at home’ as consequences. For curability/timeline, children were able to distinguish between acute and chronic illness; they provided different recovery times for the different physical illness diagnoses, distinguishing the recovery time for asthma from that of a broken arm and that of chicken pox. For example, 84% of children responded that the principal character with chicken pox would recover in ‘less than a month’, for asthma 53% of children chose ‘never’, with 22% responding that the principal character would take ‘more than a year’ to recover. For broken arm, 53% of children chose ‘1 to 6 months’, with 23% choosing ‘less than 1 month’.

Age differences were found for children’s responses to the consequences and curability/timelines for the mental illness conditions however, whereby some younger children tended to respond with similar consequences and curability/timelines as they had for the physical illness conditions. For example, 33% of ‘young’ children chose ‘see a doctor’ as the consequence for depression, while ‘young’ children tended to respond with ‘less than 1 month’ as the recovery time for depression (49%) and anorexia nervosa (28%). Some ‘young’ children, however, did not provide similar responses for the consequences of the two types of illnesses. For example, 44% of ‘young’ children chose ‘she will need to have therapy’ as the consequence of depression. For curability/timeline very few younger children offered different responses for the mental and physical illness diagnoses.

Older children on the other hand tended to select different consequences and curability/timelines for the mental and physical illnesses. Their responses revealed a more comprehensive understanding of the consequences and curability/timelines of the mental illnesses. For example, 74% of ‘old’ children responded that the principal character with depression would need to ‘have therapy’, and 45% chose ‘1 to 6
months’ as a recovery time. Similarly, for anorexia nervosa, 42% of ‘old’ children chose ‘she will need to have therapy’, with 40% choosing ‘more than 1 year’ as a recovery time. The age differences found in children’s responses to the consequences and curability/timelines of the mental illness diagnoses therefore, appear to show that for consequences, there is a reduction in the number of children offering ‘medicalised’ responses with age. For curability/timeline, younger children are more likely to provide a shorter recovery period, similar to their responses to physical illness diagnoses.

Thus, overall, the children appeared to acquire an understanding of the ontological distinction between physical illness and mental illness with age. For the majority of children, this appeared to occur across the middle childhood years, so that at the age of 6-7 years the majority of children do not appear to differentiate between these two illness domains, but begin to offer different explanations at the age of 8-9, which become more differentiated by the age of 10-11 years.

Children’s responses about the consequences and curability/timeline of the physical illnesses displayed coherence and consensus in their thinking. For example, as already discussed, the majority of children chose ‘see a doctor’ as a consequence of chicken pox, broken arm and asthma. For curability/timeline, children understood that chicken pox has a relatively short recovery period, with the majority of children choosing ‘less than one month’. Children also understood that a broken arm would take a varying amount of time to recover from, depending on how bad the injury was and provided recovery times from less than a month up to a year. They also appeared to understand that asthma was a chronic condition that would take a long time to recover from and that an individual may not recover from asthma. Children were also relatively consistent with each other in their thinking about the consequences of the mental illness conditions. For example, for depression the majority choice consequence was ‘have therapy’ (55%), for anorexia the majority of children chose ‘see a doctor’ (48%) and for dementia children chose ‘see a doctor’ (37%) or ‘she will need help and support’ (33%). This finding does not support the results of Study 3, where children were not so consistent in their responses to the
consequences of the mental illness diagnoses, and displayed a greater range of different profiles. The increase in consistency and consensus in children’s responses in the present study however, may be due to children being presented with a concrete cause in the vignettes, and being presented with a fewer number of choice cards. Children were less consistent in their thinking about the curability/timeline of the mental illness conditions however, providing a greater variety of responses.

Children showed evidence of a coherent causal explanatory framework for the physical illness conditions, in the profiles and the patterns that they produced. For chicken pox and asthma, there were only two profiles produced, and three profiles for broken arm. Furthermore, the profiles were logical and rational for example that the principal character with chicken pox would need to see a doctor and would take less than a month to recover. Similarly, that the principal character with asthma would need to see a doctor and might never recover. There was also no significant association of response pattern and age for any of the physical illnesses, which further supports the view that children’s representations of these physical illnesses are formed in early childhood.

Children also showed evidence of coherent causal-explanatory understandings of the mental illness diagnoses. Overall, children were less consistent in their thinking about mental as opposed to physical illness; children produced more profiles for the mental illness diagnoses compared to the physical illnesses, with two profiles for dementia and three for depression and anorexia nervosa. However, the existence of the logical and rational patterns produced indicated that many of the children were applying causal-explanatory frameworks.

Furthermore, significant age differences were found in children’s response patterns to the mental illness diagnoses, providing evidence that children develop and refine these response patterns with age. For example for depression, younger children were more likely to respond with the profile ‘have therapy’ and ‘less than 1 month’ compared to older children, who were more likely to respond ‘have therapy’ and ‘1 month to 6 months’, demonstrating a more comprehensive reasoning. However,
younger children were not ‘atheoretical’, they were reasoning about the consequences and curability/timeline of the mental and physical illnesses, although their response patterns were differentiated compared to older children, a finding that is consistent with a naïve theory stance.

As already discussed in Chapter 5, previous research has proposed that children gain information through exposure to common illnesses such as colds and chicken pox early on in their development (Lau & Hartman, 1983). This early experience of illness informs them that illnesses are contagious, cured by the medical profession and relatively short-lived, which may lead them to regard newly encountered types of illness in the same light; infectious, treated through medical intervention with a short recovery period (Brown et al, 1990; Kister & Patterson, 1980). The findings of the present study support this; younger children were more likely to provide a ‘medicalised’ consequence and shorter recovery time for the mental illness diagnoses compared to older children. These younger children appear to make inferential errors about the consequences and curability/timeline of these conditions. These ‘errors’ appear to be guided by intuitive theories developed through their experiences of common physical illness, which informs them that illnesses are cured by health professionals and relatively short-lived. These findings are also consistent with the results of Study 3, whereby children appeared to be making inferential errors about the causes and consequences of the mental illnesses presented based on their experience of common physical illness, namely that they are contagious and cured by health professionals. Children also seem to make predictions about curability and timeline of mental illness based on what they know about physical illness.

Older children on the other hand demonstrated a much more comprehensive knowledge and understanding of the consequences and curability/timeline of the mental illness diagnoses compared to younger children. They did not make predictions based on what they know about common physical illnesses. They appeared to understand that there are alternative consequences to mental illness, which enabled them to understand that the mind can affect how a person feels and
therefore be more likely to entertain for example, having therapy as a consequence of a mental illness.

Although age differences were found in children’s thinking about the consequences and curability/timeline of the mental illnesses, in comparison very few differences were found in children’s responses that were associated with gender or verbal IQ. With respect to gender, there were no differences in the responses that boys and girls provided with respect to the consequences of the mental illness diagnoses. This is not consistent with the findings of Studies 2 and 3, where differences were found, whereby girls were more compassionate in their thinking about mental illness, a result that is consistent with the study conducted by Ross & Ashok (1983). In the present study, while girls and boys differed in their responses to the curability/timeline of two of the physical illnesses, chicken pox and broken arm, no differences were found for any of the mental illness diagnoses. Girls tended to provide shorter recovery periods for both of these physical illnesses compared to boys.

With respect to verbal IQ, differences were found in the responses given to the consequences of anorexia nervosa, broken arm and asthma by the ‘high’ and ‘low’ IQ groups, and in the responses given to the curability/timeline of broken arm. Overall, children in the ‘high’ IQ group tended to provide more accurate responses compared to children in the ‘low’ IQ group. For example, the ‘high’ IQ group were more likely to respond that a broken arm would take ‘1 month to 6 months’ to recover, whereas the ‘low’ IQ group were more likely to respond that it would take more than a year for the broken arm to get better. The only differences found between the two IQ groups for the mental illness diagnoses were in the case of the consequences of anorexia nervosa, whereby the ‘high’ IQ group were more likely to respond that the principal character would need help and support from their relatives than the ‘low’ IQ group, and in the case of the response patterns for depression, where the ‘high’ IQ group were more likely to respond with the response pattern ‘she will need to have therapy’ and ‘6 months to 1 year’ than the ‘low’ IQ group, who were more likely to respond with the profile ‘she will need to have therapy’ and ‘less
than 1 month'. This again highlights a more accurate and sophisticated response. These findings with respect to verbal IQ appear to be consistent with the idea that children with a higher verbal IQ tend to hold different theories from children with a lower verbal IQ, and that their theories are more similar to theories held by older children, in that they were more accurate and sophisticated. However, this was only true for the consequences of anorexia nervosa and in the case of the response patterns produced for depression, so one might conclude that general cognitive ability does not appear to have a substantial influence on the development of children's knowledge and understanding within the domain of mental illness.

6.5 Conclusion

The present study highlighted a number of issues. First, the study shows evidence of developmental trends in children's thinking about the consequences and curability/timeline of mental illness. When reasoning about the consequences and curability/timeline of mental illness, younger children tended to rely on what they know about common physical illnesses, providing 'medicalised' consequences and short recovery periods, while older children demonstrated a more sophisticated and accurate knowledge and understanding of mental illness. Second, the findings are consistent with the naïve theory approach to cognitive development. Children demonstrated ontological distinctions, with older children reasoning about mental illness as a distinct domain, and the children showed coherent, causal-explanatory understandings of the consequences and curability/timeline of mental as well as physical illness. Finally, the study found very few differences in children's responses to the consequences and curability/timeline of mental illness according to gender and verbal IQ, although those which were found to be associated with verbal IQ, were consistent with the idea that children with a higher general cognitive ability provide responses similar to older children. Nevertheless, verbal IQ appears not to be an influential factor in the acquisition of children's naïve theories of mental illness.
A limitation of the present study, however, which is also relevant to previous studies (1, 2 and 3), is that these studies have only focused on children’s knowledge and understanding of mental illness. Attitudes have both a cognitive and emotional component though, and as discussed in Chapter 1, stigmatisation of the mentally ill can occur where individuals develop a negative emotional reaction to those with mental illnesses. However, Studies 1, 2, 3 and the present study have not investigated the emotional component. The next study therefore took a different stance and investigated children’s emotional responses to mental illness. The study utilised a similar language and methodological approach to Studies 1 to 4; mental illness was again referred to by using a combination of diagnostic labels and vignettes, and a semi-structured interview technique was utilised, incorporating vignettes and a card selection task. The cards presented to the children were also informed by the focus group study, as in previous studies. Finally, mixed results have been found by previous studies in boys’ and girls’ knowledge and understanding of mental illness. Where gender differences have been found girls were more sympathetic in their responses to mental illness than boys, therefore the next study further explored gender differences in children’s emotional responses to mental health problems, in addition to developmental trends.
CHAPTER 7

Study 5
Children’s Emotional Responses to Mental Illness

7.1 Introduction

The present research into children’s conceptions of mental illness, Studies 1 to 4, has highlighted a number of issues. Firstly, it has established a language and appropriate terminology to utilise when investigating children’s thinking about mental health problems. Secondly, the research has shown that children do hold knowledge about mental illness and do have an understanding about different mental illness diagnoses. Furthermore, the research has highlighted developmental trends in children’s understanding of the causes, consequences, curability and timeline of mental illness, with children demonstrating a more accurate and sophisticated understanding with age. Although clear age differences have been found, gender does not appear to be an important factor in children’s knowledge and understanding of mental health problems.

As already discussed, attitudes have both a cognitive and emotional component (Asch, 1987), which the previous studies have not examined, having focused on the cognitive component instead. The present study therefore, investigated children’s emotional reactions to mental illness and thus focused upon the emotional component. It is now well documented that adults hold negative and rejecting views towards those who suffer from mental health problems (Rabkin, 1974). Adults have been found to perceive the mentally ill as dangerous, unpredictable and intolerable (Segal, 1978). Research into children’s attitudes towards mental illness has also found that children perceive the mentally ill in a negative way. Children have been found to be unwilling to associate with the mentally ill and view them as deviant and unattractive, and attribute antisocial, aggressive and even dangerous behaviours to them (e.g., Poster et al., 1986; Roberts et al., 1984; Wilkins & Velicer, 1980). However, as already discussed in previous chapters, much of the previous research
into children’s conceptions of mental illness suffers from methodological problems, which Studies 1 to 4 aimed to address. The design of the present study therefore was informed by the previous studies, Studies 1 to 4. The present study utilised a similar language and methodological approach to Studies 2, 3 and 4. Mental illness was again referred to using a combination of diagnostic labels and vignettes describing behavioural symptoms of the mental illnesses. The semi-structured interviewing technique was also utilised again. Children were presented with the same vignettes that had been utilised in Studies 3 and 4. These were then followed by a series of questions probing their emotional reactions, incorporated in a card selection task. Children were therefore again presented with vignettes describing individuals diagnosed with depression, anorexia nervosa and dementia (Alzheimer’s type).

Children’s emotional responses to the individuals in the vignettes were investigated in five different ways: 1) a measure of social distance, investigating the distance from themselves that children would feel comfortable with for an individual with a mental illness to be within their environment, for example whether they would like or dislike the individual to live in the same street or live in the house next door; 2) a measure of social functioning, investigating children’s responses to the behavioural functioning of the principal characters, for example whether the person could get a job or drive a car; 3) responses to questions about affect, whether the children liked or disliked the principal character; 4) responses to questions about empathy, whether the children felt sorry for the individuals; and 5) children’s responses to a card selection task in relation to a series of adjectives that children would use to describe an individual with a mental illness, for example whether the principal character was clean, dirty, scary etc. Children’s responses to these questions about social distance, social functioning, affect and empathy were recorded utilising rating scales. Previous research has successfully utilised likert rating scales with children (e.g., Barrett & Short, 1992; Gimenez, Canto, Fernandez & Barrett, 1999). Thus, in the present study, children’s responses to social distance and affect were investigated using a like or dislike scale, their responses to social functioning on a likelihood scale and children’s responses to empathy on a ‘sorry’ scale (see Table 7.1). Each of the points on the scales was transferred onto a card, and children were asked to
choose a card in response to each question, in order to facilitate the process for children of primary school age.

**Table 7.1: Likert scales presented to children**

<table>
<thead>
<tr>
<th>Social Distance</th>
<th>Social Functioning</th>
<th>Affect</th>
<th>Empathy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dislike it a lot</td>
<td>Not at all likely</td>
<td>Dislike it a lot</td>
<td>Not at all sorry</td>
</tr>
<tr>
<td>Dislike it a little</td>
<td>A little bit likely</td>
<td>Dislike it a little</td>
<td>A little bit sorry</td>
</tr>
<tr>
<td>Don’t like it or</td>
<td>Quite likely</td>
<td>Don’t like it or dislike it</td>
<td>Quite sorry</td>
</tr>
<tr>
<td>dislike it</td>
<td></td>
<td>Like it a little</td>
<td></td>
</tr>
<tr>
<td>Like it a little</td>
<td>Very likely</td>
<td>Like it a little</td>
<td>Very sorry</td>
</tr>
<tr>
<td>Like it a lot</td>
<td></td>
<td>Like it a lot</td>
<td></td>
</tr>
</tbody>
</table>

With regard to measuring social distance, this is often used in research to measure attitudes towards individuals, in particular stigmatised groups. Social distance is the extent to which a person is prepared to engage in social relationships with a particular person. Social distance measures assume that an increase in social distance represents more negative attitudes towards a particular person. The use of social distance has proved a useful methodological tool in previous research (e.g., Brockington et al., 1993; Fox, 1999; Hall et al., 1993; Phillips, 1966; Weiss, 1986, 1994). This research has found that not only adults are unwilling to engage in social relationships with individuals who are mentally ill (e.g., Brockington et al., 1993; Hall, et al., 1993; Phillips, 1966), but that children also show an unwillingness to associate with individuals with mental health problems (e.g., Fox, 1999; Weiss, 1986; 1994).

Social distance questions for the present study were developed from Lester (1992), in which adult participants were asked a number of questions regarding certain social situations (see Figure 7.1). As participants in the present study were children, some of the questions presented to adults by Lester were excluded. The questions: ‘accept as a member of my family by marriage’, ‘become close friends with assuming we were of the same sex’, and ‘go out on a date with’ were qualitatively different from questions such as ‘accept as a visitor to the country’ and ‘admit to my street to live
within a few doors of me’. Furthermore, some of the questions were not relevant for children in the present study. For example, the question: ‘go out on a date with’ was not relevant. Children in the present study were therefore asked four questions regarding the place of residence of the individual with mental health problems in the vignette. Thus, children were questioned about how they would feel if the principal character described in the vignettes ‘lived in the same country’, ‘lived in the same town’, ‘lived in the same street’, or ‘lived in the house next door’.

Figure 7.1: Social distance questions from Lester (1992)

Would you be willing to……
Accept as a visitor to the country?
Allow to become a citizen of……?
Allow to be employed in the field that I hope to enter?
Admit to my street to live within a few doors of me?
Accept as a member of my family by marriage?
Become close friends with assuming we were of the same sex?
Go out on a date with?

With reference to social functioning, previous research has found that children’s responses to social distance questions are related to their perception of the behaviour of that person with a particular mental illness, whereby an increase in social distance was associated with a decrease in social functioning of individuals with mental health problems (Fox, 1999). Children in the present study were therefore asked questions regarding the ability of the principal character to engage in different types of social behaviour, thereby assessing the children’s perception of their ability to function within society. For example, children were asked how likely it was that the principal characters would be able to ‘get a job’, ‘make friends’, ‘get married’, ‘go to the supermarket’, ‘drive a car’ etc. Children in Study 1 had described individuals with mental health problems as displaying negative behaviours such as ‘hurting themselves’, ‘attacking people’, ‘acting stupid’ and ‘out of control’. These behaviours were therefore also incorporated into the questions about social
functioning that were presented to children in the present study, so that children responded to questions describing both positive and negative behaviours (see Table 7.2).

**Table 7.2: Positive and negative social functioning behaviours presented to children**

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get a job</td>
<td>Hurt themselves</td>
</tr>
<tr>
<td>Go to the supermarket</td>
<td>Become a burglar</td>
</tr>
<tr>
<td>Drive a car</td>
<td>Attack someone in the street</td>
</tr>
<tr>
<td>Go on holiday</td>
<td>Be nasty to their friends and family</td>
</tr>
<tr>
<td>Make friends</td>
<td>Act stupid</td>
</tr>
<tr>
<td>Get married</td>
<td>Act out of control</td>
</tr>
</tbody>
</table>

Affect and empathy were investigated through children’s responses to questions about whether they liked or disliked the principal characters, and whether the children felt sorry for the principal characters in the vignettes.

Finally, with reference to describing words, children were presented with adjectives and asked to choose whether the words applied to the principal character or not. The list of adjectives presented to children was generated from responses given by children in Study 1. However, the initial list produced from children’s responses in the focus group study contained predominantly negative describing words. Previous research (e.g., Barrett et al, Wilson & Lyons, 1999, 2003; Buchanan-Barrow, Bati & Barrett, 2003, 2004) has provided children with a choice of polar opposite adjectives. The present study therefore also adopted this approach using the ‘negative’ words provided by children in the focus group study, but also providing children with the polar opposites to these words (see Table 7.3).

For each child, the order of presentation of the mental illness diagnosis, and the individual items for social distance and social functioning, including the adjectives, were presented in a random order. However, the order of questioning children about each of the topics (social distance, social functioning etc.) had a more fixed structure.
Children were initially asked questions relating to either social distance or social functioning, followed by the adjective selection task and finally questions relating to affect and empathy. Pilot work had revealed that the questions about social distance and social functioning were the most difficult, and because of the number of tasks that the study entailed, in order to maintain motivation and interest, and to minimise fatigue, children were questioned about these two components first. This was then followed by the adjective selection task, as children were asked questions about affect and empathy at the end, so that their answers to these questions could not affect subsequent answers to social distance, social functioning or adjective selection.

Table 7.3: Positive and negative adjectives presented to children

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean</td>
<td>Dirty</td>
</tr>
<tr>
<td>Clever</td>
<td>Stupid</td>
</tr>
<tr>
<td>Hardworking</td>
<td>Lazy</td>
</tr>
<tr>
<td>Good</td>
<td>Bad</td>
</tr>
<tr>
<td>Friendly</td>
<td>Unfriendly</td>
</tr>
<tr>
<td>Normal</td>
<td>Weird</td>
</tr>
<tr>
<td>Nice</td>
<td>Nasty</td>
</tr>
<tr>
<td>Not scary</td>
<td>Scary</td>
</tr>
<tr>
<td>Not violent</td>
<td>Violent</td>
</tr>
</tbody>
</table>

With respect to gender, previous research has found conflicting results in boys’ and girls’ attitudes towards mental illness. Some researchers have found a difference in their attitudes towards the mentally ill (Marsden & Kalter, 1976; Ross & Ashok, 1983), while others find no differences (Coie & Pennington, 1976; Novak, 1974). The differences that have been found however show that girls are more compassionate in their responses towards the mentally ill. Studies 2 to 4 found relatively few gender differences in comparison to age differences. However, it was
expected that there would be gender differences in the present study, as children’s emotional responses to mental health problems were being investigated.

As with Studies 3 and 4, calculations were carried out to determine the sample size needed in order to retain an accepted level of power, and a minimum sample size of 117 was once again selected (see Table 5.3). Children were divided into the same age groups as previous studies; Year 2 children in a ‘young’ group, Year 4 children in a ‘middle’ group and children from Year 6 in an ‘old’ group.

The present study therefore built upon the findings and methodology of previous Studies, 1 to 4. Firstly, the present study adopted a different stance to studies (1 to 4), by investigating children’s emotional responses to mental illness, rather than their knowledge and understanding. Thus, the present study examined their responses to questions about social distance and social functioning of principal characters described in vignettes, and investigated children’s responses about the types of adjectives that describe the mentally ill. Furthermore, the study explored children’s affect and empathy towards those with mental health problems. Secondly, Studies 1 and 2 had established an appropriate language and methodology to use when investigating children’s knowledge and understanding of mental illness, and the present study adopted this language and methodology; diagnostic labels and vignettes and a semi-structured interview technique. Thirdly, adjectives that were presented to children in the present study were originally generated from the focus group study (Study 1) by children of a similar age who had generated a wide range of responses. This minimised the problems of unassisted verbal reporting and reflected the children’s own understanding. Finally, although Studies 2, 3 and 4 had found few gender differences in children’s knowledge and understanding of mental illness, children’s responses in the present study were investigated for gender trends, in addition to developmental trends, because the present study investigated the emotional aspect of children’s attitudes to mental health problems and not the cognitive component.
7.2 Method

7.2.1 Design

The study therefore employed a 3 (age) x 2 (gender) x 3 (mental illness) mixed design. The independent variables were age, gender and mental illness type. Mental illness diagnosis was presented to the children in the vignettes. This was whether the principal character had depression, anorexia nervosa or dementia (Alzheimer’s type). This gave rise to three conditions: adult female with depression, adult female with anorexia nervosa and adult female with dementia. A female was described in the vignettes, as in previous studies, to control for effects of gender of the principal character. The dependent variables, which were measured by children’s responses to a series of questions incorporating a card selection task were: a) social distance, whether the child would like the person to live in the same country, town, street or house next door; b) social functioning, for example, whether the child thought the person would be able to get a job, get married, attack someone in the street etc.; c) affect and empathy, whether the child liked, disliked or felt sorry for the principal character; and d) describing terms, adjectives that the child believed applied to the principal character. The study aimed to investigate the emotional aspects of children’s representations of mental illness. Thus the study investigated:

- The effect of child age and gender on social distance ratings, social functioning ratings, affect ratings and empathy ratings.
- The effect of child age and gender on social functioning ratings of principal characters diagnosed with different types of mental illness.
- The effect of diagnosis of the principal character on social distance ratings, social functioning ratings, affect ratings and empathy ratings.
- The different types of adjectives that children use to describe principal characters diagnosed with different types of mental illness, and variations according to child age and gender.
- The relationship between social distance ratings, social functioning ratings, affect ratings, empathy ratings and adjectives used to describe individuals with mental illness.
7.2.2 Participants

Children were recruited from two different schools in Warwickshire, Hilmorton Primary School in Rugby and St Anthony’s Primary School in Leamington Spa. Ethical procedures adopted for the present study were similar to previous studies (see Chapter 4, p. 73). Overall a total of 120 children took part. Children were divided into three groups; a ‘young’ group of 40 children from Year 2, a ‘middle’ group of 40 children from Year 4 and an ‘old’ group of 40 children from Year 6. The study aimed for approximately equal numbers of pupils across each school year and approximately equal numbers of boys and girls (58 boys, 62 girls) (see Table 7.4).

Table 7.4: Mean age of the children who participated by age group and gender

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Gender</th>
<th>N</th>
<th>Mean Age</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young</td>
<td>Girls</td>
<td>21</td>
<td>6.38</td>
<td>0.50</td>
</tr>
<tr>
<td>(Year 2)</td>
<td>Boys</td>
<td>19</td>
<td>5.74</td>
<td>1.73</td>
</tr>
<tr>
<td>Middle</td>
<td>Girls</td>
<td>20</td>
<td>8.10</td>
<td>0.31</td>
</tr>
<tr>
<td>(Year 4)</td>
<td>Boys</td>
<td>20</td>
<td>8.25</td>
<td>0.44</td>
</tr>
<tr>
<td>Old</td>
<td>Girls</td>
<td>21</td>
<td>10.43</td>
<td>0.51</td>
</tr>
<tr>
<td>(Year 6)</td>
<td>Boys</td>
<td>19</td>
<td>10.26</td>
<td>0.45</td>
</tr>
</tbody>
</table>

7.2.3 Materials

The materials that were presented to each child consisted of vignettes describing a principal character diagnosed with depression, anorexia nervosa or dementia, followed by a card selection task incorporating a series of questions designed to investigate children’s responses to social distance, social functioning, describing terms, affect and empathy (see Appendix 5 for full details of the interview schedule). The vignettes presented to each participant were utilised in Study 4 and provided information about a principal character diagnosed with a mental illness describing the cause and symptoms experienced. Symptoms were described according to the
DSM IV (American Psychiatric Association, 1995). Children received all three versions of the vignettes, which varied according to diagnosis. Vignettes were as follows: adult female with depression, adult female with anorexia nervosa and adult female with dementia (Alzheimer’s type) (see Figure 7.2).

Figure 7.2: Vignettes presented to children

---

**Depression:**

This is about a woman called* ...... She has got Depression. Her depression is caused by how she thinks and feels. Depression means that she feels sad all of the time and doesn’t like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn’t worth anything and blames herself when things go wrong. She also finds it hard to sleep.

**Anorexia Nervosa:**

This is about a woman called* ...... She has got anorexia nervosa. Her anorexia is caused by how she thinks and feels. She has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

**Dementia (Alzheimer’s Type):**

This is about a woman called* ...... She has got dementia. She has dementia because there is something wrong with her brain. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn’t recognise her family anymore and needs to be looked after all the time.

*The names Jane, Sarah and Ann were chosen at random by the researcher in order to control for effects as a result of the name given to the principal character in the vignette and to make it clear that each vignette was describing a different person.
Vignettes were followed by a series of questions incorporating a card selection task. Children were questioned about social distance, social functioning, describing terms, affect and empathy. For social distance, there were five choice cards: ‘dislike it a lot’, ‘dislike it a little’, ‘don’t like it or dislike it’, ‘like it a little’ and ‘like it a lot’. For social functioning, there were four choice cards ‘not at all likely’, ‘a little bit likely’, ‘quite likely’ and ‘very likely’. For describing words, children were presented with eighteen adjectives (see Table 7.3). For affect, there were five choice cards ‘dislike a lot’, ‘dislike a little’, ‘neither like nor dislike’, ‘like a little’ and ‘like a lot’. For empathy, there were four choice cards, ‘not at all sorry’, ‘a little bit sorry’, ‘quite sorry’ and ‘very sorry’.

The cards that were presented to the children each measured 12cm in length and 6cm in width, as with previous studies, and the words on the cards were typed in capital letters in a clear bold black font. In addition there were three cards, not presented to children, which were used to determine the order of presentation of mental illness type; depression, anorexia nervosa and dementia (Alzheimer’s type). Children’s responses were recorded on a record sheet (see Appendix 5).

7.2.4 Procedure
The presentation of cards was randomly ordered for each individual child to control for possible order effects. This included the order of the three cards relating to mental illness diagnosis (depression, anorexia nervosa and dementia) and the eighteen describing terms. All cards were shuffled by the researcher prior to starting each interview, so that each child was presented with a new randomly ordered set of cards. Children were also interviewed individually, as with Studies 2 to 4, to avoid any effects of dominance from other more confident children.

Each child was informed that they would be read aloud a series of vignettes that described an individual diagnosed with a mental illness, and the cause and symptoms that the person experienced, and that this would be followed by a series of questions incorporating a card selection task in relation to the person described in the vignette.
The child was assured that the answers that he/she gave would be anonymous and informed that they should choose whichever cards they felt to be right.

The order of presentation of mental illness vignettes was determined randomly as described above. Once determined, each section of the interview began with the child being read a vignette describing an adult female diagnosed with the first mental illness (depression, anorexia nervosa or dementia).

This was then followed by a series of questions incorporating a card selection task. Children were asked questions regarding either social distance or social functioning. If questioned about social distance first, children were asked: ‘would you like it if the person with……... (depression, anorexia nervosa, or dementia) lived in the same country?’ Children were presented with a choice of five cards ranging from ‘dislike it a lot’ to ‘like it a lot’. Cards were presented simultaneously, with each card being read aloud in order to make sure that the child understood what was written on each of the cards. Once the experimenter was sure that this was the case, the child was asked to choose just one card. They were then asked the remaining social distance questions (whether the child would like it if the person lived in the same town, the same street or the house next door), and each time asked to answer as above. Children were questioned about the social distance items randomly to control for order effects.

Following this, children were questioned about the social functioning of the principal character. They were asked ‘how likely do you think it is that the person with……... (depression, anorexia nervosa, or dementia) will get a job?’ Children were presented with a choice of four cards ranging from ‘not at all likely’ to ‘very likely’. Cards were again presented simultaneously, with each card being read aloud in order to make sure that the child understood what was written on each of the cards. Once the experimenter was sure that this was the case, the child was then asked to choose just one card. This process was repeated for each of the social functioning questions (see Table 7.2). Children were again questioned about the social functioning items randomly to control for order effects.
Once children had responded to the social distance and social functioning questions, they were questioned about adjectives that may describe the principal characters with mental illness. The experimenter asked 'I would like you to choose which of these words describes the person with .......... (depression, anorexia nervosa, or dementia)'. Children were randomly presented with eighteen cards containing adjectives such as 'dirty', 'lazy', 'hardworking' etc (see Table 7.3). Children were read each card in turn and asked to respond with a yes or no as to whether they thought the word described the principal character.

Finally, children were asked questions designed to investigate affect and empathy. They were asked first 'do you like or dislike the person with .......... (depression, anorexia nervosa, or dementia)''? They were provided with five cards simultaneously ranging from 'dislike a lot' to 'like a lot' and asked to choose just one card. Children were lastly asked 'do you feel sorry for the person with .......... (depression, anorexia nervosa, or dementia)''? They were presented with four cards ranging from 'not at all sorry' to 'very sorry' and asked to choose just one card.

All answers were documented on a recording sheet. This process was repeated for each of the mental illness diagnoses. Any child who was noted to have difficulties with reading or comprehension was given assistance when judged necessary.

7.3 Results

Children's responses to the social distance, affect and empathy questions were analysed using ANOVA in order to assess whether there were any differences associated with age or gender. Children's responses to the social functioning questions were analysed using factor analysis in order to identify any groupings of social functioning variables. Correlational analyses were conducted in order to investigate the relationship between social distance ratings, affect ratings, empathy ratings and social functioning ratings for the different mental illness diagnoses. Finally, ANOVA and Correspondence Analysis were conducted in order to investigate whether there were any differences in the types of adjectives that boys
and girls of different age groups used to describe principal characters with different mental illnesses.

7.3.1 Differences on social distance scores, affect and empathy ratings according to diagnosis, age and gender (ANOVA)

A number of 3 (age group) x 2 (gender) x 3 (diagnosis) mixed measures ANOVAs were conducted, with independent measures on the first two factors and repeated measures on the last factor, to investigate the effect of diagnosis, age and gender on social distance scores, affect ratings and empathy ratings. Post hoc analyses for ANOVA were conducted using independent t-tests for independent groups and paired t-tests for repeated measures.

For the purpose of analysis children’s responses to the social distance questions were summed for each mental illness in order to calculate an overall social distance score. As a result, a lower, more negative social distance score represented a child preferring a greater social distance between themselves and the principal character. Conversely, a higher, more positive social distance score represented a child preferring less social distance between themselves and the principal character.

7.3.1.1 Social distance

The three-way ANOVA highlighted a significant main effect of gender for social distance scores (F = 6.86, df = 1, 114, p < 0.05), with girls (M = 12.72) providing a higher social distance score than boys (M = 11.54). A significant interaction for gender by diagnosis for social distance scores was also found (F = 4.87, df = 2, 236, p < 0.01). Post hoc tests showed that girls (M = 13.48) gave higher social distance scores than boys (M = 11.53) for principal characters diagnosed with anorexia nervosa. Girls (M = 12.90) also gave higher social distance scores than boys (M = 11.00) for the principal character diagnosed with dementia. However, there were no significant differences in the social distance scores provided by girls (M = 11.97) and boys (M = 11.90) for depression. No other main effects or interactions were significant (see Table 7.5).
7.3.1.2 Affect
The three-way ANOVA highlighted a significant main effect of diagnosis (F = 8.01, df = 2, 228, p < 0.01), with children liking the principal character diagnosed with depression (M = 2.82) less than the principal characters diagnosed with anorexia nervosa (M = 3.13) or dementia (M = 3.29). A significant main effect of gender was also found (F = 5.93, df = 1, 114, p < 0.05), with girls (M = 3.31) liking the principal characters more than boys (M = 2.84). No other effects were significant (see Table 7.6).

Table 7.5: Descriptive statistics for social distance scores for the different mental illness diagnoses (standard deviations in brackets)

<table>
<thead>
<tr>
<th>Mental Illness</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>11.90 (3.31)</td>
<td>11.97 (3.40)</td>
<td>11.93 (3.34)</td>
</tr>
<tr>
<td>Anorexia nervosa</td>
<td>11.53 (3.24)</td>
<td>13.48 (3.24)</td>
<td>12.54 (3.37)</td>
</tr>
<tr>
<td>Dementia</td>
<td>11.00 (4.03)</td>
<td>12.90 (3.48)</td>
<td>11.98 (3.86)</td>
</tr>
<tr>
<td>Total</td>
<td>11.54 (2.80)</td>
<td>12.72 (2.57)</td>
<td>12.15 (2.74)</td>
</tr>
</tbody>
</table>

Table 7.6: Descriptive statistics for affect ratings for the different mental illness diagnoses (standard deviations in brackets)

<table>
<thead>
<tr>
<th>Mental Illness</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>2.76 (1.32)</td>
<td>2.89 (1.31)</td>
<td>2.82 (1.31)</td>
</tr>
<tr>
<td>Anorexia nervosa</td>
<td>2.83 (1.19)</td>
<td>3.42 (1.33)</td>
<td>3.13 (1.29)</td>
</tr>
<tr>
<td>Dementia</td>
<td>2.95 (1.29)</td>
<td>3.61 (1.23)</td>
<td>3.29 (1.30)</td>
</tr>
<tr>
<td>Total</td>
<td>2.84 (1.08)</td>
<td>3.31 (1.01)</td>
<td>3.08 (1.06)</td>
</tr>
</tbody>
</table>

7.3.1.3 Empathy
The three-way ANOVA highlighted a significant main effect of diagnosis for empathy ratings (F = 13.32, df = 2, 228, p < 0.01), with children feeling more sorry
for the principal character diagnosed with dementia (M = 3.56) than principal characters diagnosed with anorexia nervosa (M = 3.19) or depression (M = 3.26). No other main effects or interactions were significant (see Table 7.7).

Table 7.7: Descriptive statistics for empathy ratings for the different mental illness diagnoses (standard deviations in brackets)

<table>
<thead>
<tr>
<th>Mental Illness</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>3.28 (0.87)</td>
<td>3.24 (0.88)</td>
<td>3.26 (0.87)</td>
</tr>
<tr>
<td>Anorexia nervosa</td>
<td>3.05 (1.12)</td>
<td>3.32 (0.76)</td>
<td>3.19 (0.96)</td>
</tr>
<tr>
<td>Dementia</td>
<td>3.50 (0.96)</td>
<td>3.61 (0.71)</td>
<td>3.56 (0.84)</td>
</tr>
<tr>
<td>Total</td>
<td>3.28 (0.84)</td>
<td>3.39 (0.65)</td>
<td>3.34 (0.75)</td>
</tr>
</tbody>
</table>

7.3.2 Perceived social functioning (factor analysis)

Factor analysis was employed in order to further investigate children’s perceived social functioning of the principal characters to identify any groupings of the social functioning variables. Initially, a factor analysis was carried out on the overall means for all the social functioning variables. However, the solution here was unclear. Factor analysis was also employed to look more closely at the different variables related to each of the different diagnoses individually. Only results for the social functioning variables for the different diagnoses are reported here, as these results were more readily interpretable. Thus, three principal components analyses with varimax rotation were carried out, one for each of the different diagnoses (depression, anorexia nervosa and dementia). Where the results of the between subjects ANOVAs were significant, post hoc investigations were carried out using Scheffe tests for age and independent t-tests for gender and age by gender interactions.

7.3.2.1 Depression

The factor analysis yielded 4 factors with eigenvalues over 1. These four factors together explained 61.68% of the variance. The factor matrix indicated many strong and moderate loadings (see Table 7.8).
The loadings indicated that children’s thinking about the social functioning of the principal character diagnosed with depression could be sub-divided into four factors. These factors differentiated between different types of positive and negative behaviours that the principal character might display; two of the factors appeared to be concerned with negative behaviours, and two with positive behaviours. The two factors that differentiated negative behaviours were concerned with safety and risk. Factor 1 described negative behaviours concerned with safety and risk towards others, while Factor 4 concerned negative behaviours that were concerned with safety and risk towards the principal characters themselves. The two factors that described positive behaviours were concerned with the personal functioning of the principal characters. Factor 2 described positive, personal functioning behaviours and Factor 3 concerned positive, inter-personal functioning behaviours.

Table 7.8: Variables loading onto each factor for depression (with loadings in brackets).

<table>
<thead>
<tr>
<th>Factor 1 (negative/safety &amp; risk towards others 1)</th>
<th>Factor 2 (positive/personal functioning)</th>
<th>Factor 3 (positive/inter-personal functioning)</th>
<th>Factor 4 (negative/safety &amp; risk towards themselves)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burglar (0.83)</td>
<td>Supermarket (0.82)</td>
<td>Job (0.59)</td>
<td>Hurt themselves (0.69)</td>
</tr>
<tr>
<td>Attack (0.76)</td>
<td>Car (0.66)</td>
<td>Friends (0.69)</td>
<td>Out of control (0.70)</td>
</tr>
<tr>
<td>Nasty (0.53)</td>
<td>Holiday (0.72)</td>
<td>Marry (0.80)</td>
<td></td>
</tr>
<tr>
<td>Stupid (0.65)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The four factors were then subjected to a reliability analysis. This highlighted that Factor 1 (Cronbach’s alpha = 0.70), Factor 2 (Cronbach’s alpha = 0.65) and Factor 4 (r = 0.28, n = 120, p < 0.01) would be acceptable for further analysis. Factor 3 was omitted because the Cronbach’s alpha was less than the minimum value of 0.60 for carrying out further analysis. As a result, factors 1, 2 and 4 were investigated for age and gender differences. In order to obtain a mean overall score for the factors for
each child, the mean ratings for the social functioning variables making up each factor were calculated.

**Factor 1.** A 2-way between subjects ANOVA highlighted a significant main effect of age group (F = 3.85, df = 2, 114, p < 0.05), with ‘old’ children (M = 1.86, sd = 0.60) thinking it more likely that the principal character with depression would exhibit negative behaviours associated with safety and risk towards others than ‘young’ (M = 1.58, sd = 0.78) and ‘middle’ children (M = 1.49, sd = 0.50). A significant age group by gender interaction was also found (F = 5.89, df = 2, 114, p < 0.05), with ‘young’ girls (M = 1.29, sd = 0.78) thinking it less likely that the principal character would exhibit behaviours associated with safety and risk towards others than ‘young’ boys (M = 1.90, sd = 0.86).

**Factor 2.** A 2-way between subjects ANOVA highlighted a significant main effect of age group (F = 16.50, df, 2, 114, p < 0.01), with ‘old’ children (M = 2.06, sd = 0.68) thinking it more likely that the principal character with depression would show positive, personal functioning behaviours than ‘young’ children (M = 1.40, sd = 0.65) and ‘middle’ children (M = 1.38, sd = 0.47).

**Factor 4.** No significant differences were found for either age or gender for Factor 4.

**7.3.2.2 Anorexia Nervosa**

The factor analysis yielded three factors with eigenvalues over 1. These three factors together explained 61.12% of the variance. The factor matrix indicated many strong and moderate loadings (see Table 7.9). The loadings on the three factors indicated that children’s thinking about the social functioning of the principal character with anorexia nervosa could be sub-divided into groups. Sub-groups differentiated between positive and negative behaviours of the principal character; one of the factors was concerned with positive behaviours and the other two factors were concerned with negative behaviours. The factor concerned with positive behaviours described positive, personal functioning behaviours. One of the factors describing
negative behaviours concerned safety and risk towards others, while the other described negative behaviours associated with the principal character themselves.

These three factors were then subjected to a reliability analysis, which highlighted that Factor 1 (Cronbach’s alpha = 0.84) and Factor 2 (Cronbach’s alpha = 0.74) would be acceptable for further analysis. Factor 3 was excluded because the Cronbach’s alpha was less than the minimum value of 0.60. As a result, factors 1 and 2 were investigated for age and gender differences. As with depression, a mean overall score for the factors for each child was calculated from the mean ratings for the social functioning variables making up each factor.

**Table 7.9:** Variables loading onto each factor for anorexia nervosa (with loadings in brackets).

<table>
<thead>
<tr>
<th>Factor 1 (positive/personal functioning)</th>
<th>Factor 2 (negative/safety &amp; risk towards others)</th>
<th>Factor 3 (negative/behaviour associated with themselves)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job (0.75)</td>
<td>Burglar (0.78)</td>
<td>Hurt (0.80)</td>
</tr>
<tr>
<td>Supermarket (0.71)</td>
<td>Attack (0.84)</td>
<td>Stupid (0.46)</td>
</tr>
<tr>
<td>Car (0.75)</td>
<td>Nasty (0.70)</td>
<td>Out of control (0.64)</td>
</tr>
<tr>
<td>Holiday (0.86)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friends (0.52)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marry (0.81)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>% of variance</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.98</td>
<td>28.06%</td>
<td>0.84</td>
</tr>
<tr>
<td>2.33</td>
<td>19.00%</td>
<td>0.74</td>
</tr>
<tr>
<td>1.02</td>
<td>14.07%</td>
<td>0.56</td>
</tr>
</tbody>
</table>

**Factor 1.** A 2-way between subjects ANOVA highlighted a significant main effect of age group (F = 5.21, df = 2, 114, p < 0.01), with ‘old’ children (M = 2.20, sd = 0.87) thinking it more likely that the principal character with anorexia nervosa would display positive personal functioning behaviours than ‘young’ children (M = 1.67, sd = 0.71). A significant age group by gender interaction was also found (F = 3.94, df = 2, 114, p < 0.05), with ‘middle’ girls (M = 2.33, sd = 0.75) thinking it more likely that the principal character would be able to show positive personal functioning behaviours than ‘middle’ boys (M = 1.73, sd = 0.68).
Factor 2. No significant differences were found for either age or gender for Factor 2.

7.3.2.3 Dementia

The factor analysis yielded four factors with eigenvalues over 1. These four factors together explained 66.12% of the variance. The factor matrix indicated many strong and moderate loadings (see Table 7.10).

Table 7.10: Variables loading onto each factor for dementia (with loadings in brackets).

<table>
<thead>
<tr>
<th>Factor 1 (negative/safety &amp; risk)</th>
<th>Factor 2 (positive/personal functioning)</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hurt (0.64)</td>
<td>Supermarket (0.75)</td>
<td>Job (0.78)</td>
<td>Burglar (0.91)</td>
</tr>
<tr>
<td>Attack (0.55)</td>
<td>Car (0.66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasty (0.69)</td>
<td>Holiday (0.83)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stupid (0.83)</td>
<td>Friends (0.50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Out of control (0.76)</td>
<td>Marry (0.83)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The loadings showed that children’s thinking about the social functioning of the principal character diagnosed with dementia could be divided into four sub-groups. These sub-groups, as with depression and anorexia nervosa, differentiated between positive and negative behaviours. Two of the factors were concerned with positive behaviours and the other two with negative behaviours, although the second sub-groupings of positive and negative behaviours only contained one variable. As with the other mental illness diagnoses, the positive behaviours were concerned with personal functioning of the principal character and the negative behaviours were concerned with safety and risk.

The first two factors were then subjected to a reliability analysis. This highlighted that Factor 1 (Cronbach’s alpha = 0.77) and Factor 2 (Cronbach’s alpha = 0.73) would be acceptable for further use. As a result, these factors were investigated for
age and gender differences. In order to obtain a mean overall score for the factors for each child, the mean ratings for the social functioning variables making up each factor were calculated. Factors 3 and 4 comprised single variables and were also further investigated for age and gender differences.

**Factor 1.** A 2-way between subjects ANOVA highlighted a significant main effect of gender ($F = 8.28$, df = 2, 114, $p < 0.01$), with boys ($M = 2.67$, sd = 0.84) thinking it more likely that the principal character with dementia would show negative behaviour associated with safety and risk than girls ($M = 2.27$, sd = 0.70).

**Factor 2.** A 2-way between subjects ANOVA highlighted a significant age group by gender interaction ($F = 6.09$, df = 2, 114, $p < 0.01$), with 'middle' girls ($M = 1.55$, sd = 0.46) thinking it more likely that the principal character with dementia would show these positive personal functioning behaviours that 'middle' boys ($M = 1.14$, sd = 0.25).

**Factor 3.** No significant differences were found for either age or gender for Factor 3.

**Factor 4.** A 2-way between subjects ANOVA highlighted a significant main effect of gender ($F = 8.75$, df = 2, 114, $p < 0.01$), with boys ($M = 1.40$, sd = 0.88) thinking it more likely that the principal character with dementia would become a burglar than girls ($M = 1.07$, sd = 0.25).

### 7.3.3 Differences in adjectives according to diagnosis, age and gender

#### 7.3.3.1 ANOVA
The total numbers of positive and negative describing words attributed to principal characters diagnosed with different types of mental illness were calculated in order to investigate whether there was any difference in the types of adjectives children used to describe principal characters with different mental illnesses (see Table 7.11).

A 2 (adjective type) x 3 (diagnosis) x 3 (age group) x 2 (gender) mixed ANOVA was conducted, with repeated measures on the first two factors and independent measures...
on the other two factors. Post hoc analyses for ANOVA were conducted using independent t-tests for independent groups and paired t-tests for repeated measures. The ANOVA revealed a significant main effect of adjective type \( (F = 6.79, \text{df} = 1, 114, p < 0.05) \), with more positive \( (M = 4.51) \) than negative \( (M = 3.67) \) adjectives being attributed to principal characters overall.

Results revealed a significant diagnosis x adjective interaction effect \( (F = 41.42, \text{df} = 2, 228, p < 0.01) \). Post hoc tests revealed that children attributed more positive \( (M = 5.44) \) than negative adjectives \( (M = 2.62) \) for anorexia nervosa, but that no significant differences were found in the numbers of positive and negatives attributed to the principal characters with depression or dementia.

A significant adjective x gender interaction effect was also found \( (F = 6.12, \text{df} = 1, 114, p < 0.05) \), with post hoc tests revealing that girls attributed more positive adjectives \( (M = 4.86) \) than boys \( (M = 4.13) \), with boys attributing more negative adjectives \( (M = 4.09) \) than girls \( (M = 3.27) \) (see Table 7.11).

The ANOVA results also revealed a significant 3-way diagnosis x adjective x age group interaction effect \( (F = 5.15, \text{df} = 4, 228, p < 0.01) \) and a significant 3-way diagnosis x adjective x gender interaction effect \( (F = 7.25, \text{df} = 2, 228, p < 0.01) \). No other effects were significant.

Owing to the complexity of the significant 3-way interactions that were found, the results were further explored using correspondence analysis. This allowed a more detailed examination of patterns of linked responses concerning the adjectives used to describe the principal characters diagnosed with the different types of mental illness, to reveal any trends according to age group and gender of the children.
Table 7.11: Mean numbers of positive and negative describing words according to gender for each of the principal characters (standard deviations in brackets)

<table>
<thead>
<tr>
<th>Mental Illness</th>
<th>Positive Adjectives</th>
<th>Negative Adjectives</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td>Depression</td>
<td>4.00 (2.53)</td>
<td>3.85 (2.21)</td>
</tr>
<tr>
<td>Anorexia nervosa</td>
<td>4.88 (2.31)</td>
<td>5.97 (2.23)</td>
</tr>
<tr>
<td>Dementia</td>
<td>3.50 (2.35)</td>
<td>4.76 (1.97)</td>
</tr>
<tr>
<td>Total</td>
<td>4.13 (1.91)</td>
<td>4.86 (1.73)</td>
</tr>
</tbody>
</table>
7.3.3.2 Correspondence analysis

Three correspondence analyses were carried out. All three produced significant one-dimensional plots, indicating that differences arose between the adjectives that children assigned to the principal characters diagnosed with depression, anorexia nervosa and dementia according to their age and/or gender.

Depression. A significant one-dimensional solution was found showing age differences for girls in the adjectives that were assigned to the principal character diagnosed with depression. It appears that the thinking of ‘young’ girls is distinct from the thinking of ‘old’ girls. ‘Young’ girls were more likely to assign the adjectives ‘not scary’, ‘not violent’ and ‘good’, whereas ‘old’ girls were more likely to describe the principal character with depression as ‘scary’, ‘violent’ and ‘nasty’ (see Figure 7.3).

Anorexia Nervosa. A significant one-dimensional solution was found suggesting gender differences in the adjectives that were assigned to the principal character diagnosed with anorexia nervosa. It appears that the thinking of ‘young’, ‘middle’ and ‘old’ girls is distinct from the thinking of ‘young’ and ‘middle’ boys. ‘Young’, ‘middle’ and ‘old’ girls were more likely to describe the principal character with anorexia nervosa as ‘not scary’, ‘not violent’, ‘clean’, ‘good’, ‘clever’, ‘hardworking’ and ‘nice’. In comparison, ‘young’ and ‘middle’ boys were more likely to assign the adjectives ‘dirty’, ‘nasty’, ‘scary’, ‘lazy’, ‘bad’, ‘unfriendly’, and ‘violent’ to the principal character with anorexia nervosa (see Figure 7.4).

Dementia. A significant one-dimensional solution was found suggesting gender differences in the adjectives that were assigned to the principal character diagnosed with dementia. It appears that the thinking of ‘young’, ‘middle’ and ‘old’ boys is distinct from ‘young’ and ‘middle’ girls. ‘Young’, ‘middle’ and ‘old’ boys were more likely to describe the principal character as ‘scary’, ‘violent’, ‘bad’, ‘dirty’, ‘unfriendly’, ‘lazy’ and ‘nasty’. In comparison, ‘young’ and ‘middle’ girls were more likely to assign the adjectives ‘not violent’, ‘not scary’, ‘clever’, ‘friendly’ and ‘nice’ to the principal character diagnosed with dementia (see Figure 7.5).
Figure 7.3: Responses concerning adjectives assigned by boys and girls of different age groups for depression

Dimension 1: inertia = 57.93%, $\chi^2 = 58.74$, df = 22, p < 0.01
Figure 7.4: Responses concerning adjectives assigned by boys and girls of different age groups for anorexia nervosa

Dimension 1: inertia = 56.73%, $\chi^2 = 41.02$, df = 22, p <0.01
Figure 7.5: Responses concerning adjectives assigned by boys and girls of different age groups for dementia

Dimension 1: inertia = 56.12%, $\chi^2 = 45.88$, df = 22, $p < 0.01$
7.3.4 Relationship between social distance scores, affect ratings, empathy ratings, social functioning variables and positive and negative adjectives

Correlational analyses were conducted in order to investigate the relationship between social distance ratings, affect ratings, empathy ratings, social functioning and positive and negative adjectives for the different mental illness diagnoses. A number of correlations between these variables were found to be significant.

7.3.4.1 Depression

The patterns of correlations for depression (see Table 7.12) showed that for social distance very few of the correlations were significant. For affect ratings correlations were in the direction predicted, in that the more likely children perceived the principal character to show positive behaviours such as get a job, drive a car and getting married the more the children liked the principal character. Similarly, the more likely children perceived the principal character to display negative behaviours such as coming a burglar, attacking someone in the street, being nasty to their friends or acting stupid, the less the children liked the principal character.

The correlations for empathy ratings showed a similar pattern for the negative behaviours; the more likely that children rated the principal character to display the negative behaviours, the less they felt sorry for them. For positive and negative adjectives correlations were again in the direction predicted. For example, the more likely children perceived the principal character to display positive behaviours, the more positive adjectives and less negative adjectives children attributed to the principal character. However for social distance and ‘act out of control’, and empathy and ‘go to the supermarket’ the correlations were in the opposite direction than expected.

7.3.4.2 Anorexia Nervosa

The patterns of correlations for anorexia nervosa (see Table 7.13) were all in the direction predicted; where children perceived the principal character to display positive behaviours, the smaller the perceived social distance and the more they liked the principal character. Conversely, where children perceived the principal character
to display negative behaviours, the greater the perceived social distance and the less they liked the principal character. No correlations for empathy ratings and positive behaviours were found to be significant, with only two negative behaviours showing significant negative correlations with feel sorry ratings. Correlations for positive and negative adjectives were all in the direction predicted.

Table 7.12: Pearson correlations for social distance scores, affect ratings, empathy ratings, positive and negative adjectives, and social functioning variables for depression

<table>
<thead>
<tr>
<th></th>
<th>Social distance</th>
<th>Affect</th>
<th>Empathy</th>
<th>Positive adjectives</th>
<th>Negative adjectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affect</td>
<td>0.36**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.11</td>
<td>0.25**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Positive adjectives</td>
<td>0.10</td>
<td>0.42**</td>
<td>0.15</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Negative adjectives</td>
<td>-0.21*</td>
<td>-0.55**</td>
<td>-0.27**</td>
<td>-0.70**</td>
<td>-</td>
</tr>
<tr>
<td>Get a job</td>
<td>-0.14</td>
<td>0.22*</td>
<td>-0.02</td>
<td>0.34**</td>
<td>-0.26**</td>
</tr>
<tr>
<td>Go to the supermarket</td>
<td>0.08</td>
<td>0.05</td>
<td>-0.20*</td>
<td>0.11</td>
<td>-0.14</td>
</tr>
<tr>
<td>Drive a car</td>
<td>0.03</td>
<td>0.22*</td>
<td>0.02</td>
<td>0.17</td>
<td>-0.12</td>
</tr>
<tr>
<td>Go on holiday</td>
<td>0.12</td>
<td>0.14</td>
<td>-0.13</td>
<td>0.07</td>
<td>0.05</td>
</tr>
<tr>
<td>Make friends</td>
<td>0.07</td>
<td>0.09</td>
<td>-0.05</td>
<td>0.36**</td>
<td>-0.17</td>
</tr>
<tr>
<td>Get married</td>
<td>0.03</td>
<td>0.24**</td>
<td>-0.13</td>
<td>0.42**</td>
<td>-0.34**</td>
</tr>
<tr>
<td>Hurt themselves</td>
<td>0.00</td>
<td>-0.18</td>
<td>-0.05</td>
<td>-1.64</td>
<td>0.28**</td>
</tr>
<tr>
<td>Become a burglar</td>
<td>-0.09</td>
<td>-0.26**</td>
<td>-0.40**</td>
<td>-0.34**</td>
<td>0.45**</td>
</tr>
<tr>
<td>Attack someone in the street</td>
<td>-0.25**</td>
<td>-0.26**</td>
<td>-0.25**</td>
<td>0.29**</td>
<td>0.42**</td>
</tr>
<tr>
<td>Be nasty to friends and family</td>
<td>-0.07</td>
<td>-0.24**</td>
<td>-0.21*</td>
<td>-0.36**</td>
<td>0.45**</td>
</tr>
<tr>
<td>Act stupid</td>
<td>0.04</td>
<td>-0.31**</td>
<td>-0.15</td>
<td>-0.44**</td>
<td>0.61**</td>
</tr>
<tr>
<td>Act out of control</td>
<td>0.24**</td>
<td>-0.12</td>
<td>0.04</td>
<td>-0.24**</td>
<td>0.34**</td>
</tr>
</tbody>
</table>

** correlation significant at the 0.01 level
* correlation significant at the 0.05 level
Table 7.13: Pearson correlations for social distance scores, affect ratings, empathy ratings, positive and negative adjectives, and social functioning variables for anorexia nervosa

<table>
<thead>
<tr>
<th></th>
<th>Social distance</th>
<th>Affect</th>
<th>Empathy</th>
<th>Positive adjectives</th>
<th>Negative adjectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affect</td>
<td>0.51**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.25**</td>
<td>0.23*</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Positive adjectives</td>
<td>0.19*</td>
<td>0.52**</td>
<td>0.12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Negative adjectives</td>
<td>-0.18*</td>
<td>-0.57**</td>
<td>-0.16</td>
<td>-0.70**</td>
<td>-</td>
</tr>
<tr>
<td>Get a job</td>
<td>0.23*</td>
<td>0.41**</td>
<td>0.05</td>
<td>0.32**</td>
<td>-0.39**</td>
</tr>
<tr>
<td>Go to the supermarket</td>
<td>0.21*</td>
<td>0.23**</td>
<td>0.00</td>
<td>0.14</td>
<td>-0.16</td>
</tr>
<tr>
<td>Drive a car</td>
<td>0.17</td>
<td>0.35**</td>
<td>0.01</td>
<td>0.21*</td>
<td>-0.30**</td>
</tr>
<tr>
<td>Go on holiday</td>
<td>0.26**</td>
<td>0.43**</td>
<td>0.05</td>
<td>0.33**</td>
<td>-0.32**</td>
</tr>
<tr>
<td>Make friends</td>
<td>0.26**</td>
<td>0.33**</td>
<td>0.07</td>
<td>0.48**</td>
<td>-0.44**</td>
</tr>
<tr>
<td>Get married</td>
<td>0.20*</td>
<td>0.40**</td>
<td>0.01</td>
<td>0.37**</td>
<td>-0.38**</td>
</tr>
<tr>
<td>Hurt themselves</td>
<td>-0.23*</td>
<td>-0.09</td>
<td>0.10</td>
<td>-0.03</td>
<td>0.21*</td>
</tr>
<tr>
<td>Become a burglar</td>
<td>-0.16</td>
<td>-0.32**</td>
<td>-0.22*</td>
<td>-0.34**</td>
<td>0.51**</td>
</tr>
<tr>
<td>Attack someone in the street</td>
<td>-0.21*</td>
<td>-0.44**</td>
<td>-0.18</td>
<td>-0.41**</td>
<td>0.57**</td>
</tr>
<tr>
<td>Be nasty to friends and family</td>
<td>-0.22*</td>
<td>-0.41**</td>
<td>-0.24**</td>
<td>-0.49**</td>
<td>0.60**</td>
</tr>
<tr>
<td>Act stupid</td>
<td>-0.22*</td>
<td>-0.25**</td>
<td>-0.13</td>
<td>-0.47**</td>
<td>0.48**</td>
</tr>
<tr>
<td>Act out of control</td>
<td>-0.15</td>
<td>-0.29**</td>
<td>-0.14</td>
<td>-0.34**</td>
<td>0.41**</td>
</tr>
</tbody>
</table>

** correlation significant at the 0.01 level
* correlation significant at the 0.05 level

7.3.4.3 Dementia

The patterns of correlations for dementia (see Table 7.14) were as expected; where children perceived the principal character to display positive behaviours, the smaller the perceived social distance and the more the children liked the principal character. Conversely, where children perceived the principal character to display negative behaviours, the greater the perceived social distance and the less they liked the
principal character. None of the correlations were significant between empathy ratings and positive behaviours. However, the significant correlations between empathy ratings and negative behaviours were in the direction expected. Similarly, the correlations for positive and negative adjectives were in the direction predicted.

Table 7.14: Pearson correlations for social distance scores, affect ratings, empathy ratings, positive and negative adjectives, and social functioning variables for dementia

<table>
<thead>
<tr>
<th></th>
<th>Social distance</th>
<th>Affect</th>
<th>Empathy</th>
<th>Positive adjectives</th>
<th>Negative adjectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affect</td>
<td>0.54**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Empathy</td>
<td>0.33**</td>
<td>0.32**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Positive adjectives</td>
<td>0.36**</td>
<td>0.57**</td>
<td>0.29**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Negative adjectives</td>
<td>-0.40**</td>
<td>-0.60**</td>
<td>-0.29**</td>
<td>-0.63**</td>
<td>-</td>
</tr>
<tr>
<td>Get a job</td>
<td>0.01</td>
<td>-0.01</td>
<td>-0.01</td>
<td>0.11</td>
<td>0.03</td>
</tr>
<tr>
<td>Go to the supermarket</td>
<td>0.29**</td>
<td>0.11</td>
<td>0.04</td>
<td>-0.07</td>
<td>-0.08</td>
</tr>
<tr>
<td>Drive a car</td>
<td>0.17</td>
<td>0.12</td>
<td>0.13</td>
<td>0.16</td>
<td>-0.08</td>
</tr>
<tr>
<td>Go on holiday</td>
<td>0.31**</td>
<td>0.27**</td>
<td>0.15</td>
<td>0.22**</td>
<td>-0.25**</td>
</tr>
<tr>
<td>Make friends</td>
<td>0.31**</td>
<td>0.28**</td>
<td>0.11</td>
<td>0.37**</td>
<td>-0.36**</td>
</tr>
<tr>
<td>Get married</td>
<td>0.29**</td>
<td>0.28**</td>
<td>0.18</td>
<td>0.19*</td>
<td>-0.23**</td>
</tr>
<tr>
<td>Hurt themselves</td>
<td>-0.13</td>
<td>-0.07</td>
<td>0.02</td>
<td>-0.06</td>
<td>0.28**</td>
</tr>
<tr>
<td>Become a burglar</td>
<td>-0.30**</td>
<td>-0.35**</td>
<td>-0.19*</td>
<td>-0.24**</td>
<td>0.33**</td>
</tr>
<tr>
<td>Attack someone in the</td>
<td>-0.32**</td>
<td>-0.48**</td>
<td>-0.19*</td>
<td>-0.46**</td>
<td>0.46**</td>
</tr>
<tr>
<td>street</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be nasty to friends</td>
<td>-0.29**</td>
<td>-0.42**</td>
<td>-0.22*</td>
<td>-0.47**</td>
<td>0.55**</td>
</tr>
<tr>
<td>and family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Act stupid</td>
<td>-0.13</td>
<td>-0.35**</td>
<td>-0.08</td>
<td>-0.46**</td>
<td>0.54**</td>
</tr>
<tr>
<td>Act out of control</td>
<td>-0.90</td>
<td>-0.22*</td>
<td>-0.25**</td>
<td>-0.32**</td>
<td>0.47**</td>
</tr>
</tbody>
</table>

** correlation significant at the 0.01 level
*correlation significant at the 0.05 level
7.4 Discussion

The present study investigated children's emotional responses to mental illness by presenting children with vignettes describing individuals diagnosed with different types of mental illness and exploring their responses to questions about social distance, social functioning, describing words, affect and empathy in relation to the principal characters in the vignettes.

Overall, children demonstrated differences in their emotional responses to the principal characters according to mental illness diagnosis; for example, children liked the principal character with depression least and felt most sorry for the principal character with dementia. Their emotional responses also seemed to be dependent upon their perception of the type of social functioning behaviour that the principal characters would show (positive or negative). Furthermore, there were gender differences in the children's emotional responses to mental illness; girls liked the principal characters more than boys, they provided responses indicating less social distance between themselves and the principal characters, they responded that the principal characters would demonstrate more positive social functioning behaviours than boys, and they attributed more positive adjectives to describe the principal characters than boys. Age, however, did not appear to play such an important part. These findings are in contrast to previous studies (2, 3 and 4), in which very few gender differences but many more developmental trends were found instead.

With reference to mental illness diagnosis, differences were found in children's affect and empathy ratings towards the principal characters. The children's more negative affect towards the principal character with depression may be the result of children not fully understanding the severity of depression, perceiving it as how everyone feels at some time. They may have experience of people who feel sad and depressed, experiencing these sorts of people in unfavourable terms, for example as not approachable or sociable and no fun. This may lead them to rate the principal character with depression as the one they liked the least. On the other hand, it also seems likely that children had the most empathy with the principal character diagnosed with dementia because this individual may remind them of their grandma,
granddad, or elderly neighbour, given that between 2-4% of the general population over the age of 65 years is estimated to suffer from Dementia (Alzheimer’s Type), a figure that increases with age, particularly over the age of 75 (DSM IV, American Psychiatric Association, 1995).

Differences were also found in the types of adjectives attributed to the different mental illness diagnoses. Overall, children attributed more positive adjectives to principal characters than negative adjectives. This is in contrast with previous research whereby children have been found to perceive the mentally ill in a negative way (Poster et al., 1986; Roberts et al., 1984; Wilkins & Velicer, 1980). Differences in findings may be because of differences in methodology, for example the present study utilised an appropriate terminology, whereas Roberts et al. (1984) asked children about general terms relating to mental illness. Poster et al. (1986) utilised projective means to investigate children’s attitudes towards mental illness, through children’s figure drawings and stories, which have been criticised for their subjective nature, while Wilkins & Velicer (1980) investigated children’s attitudes towards their peers. Children in the present study also appeared to be most positive towards the principal character with anorexia nervosa, attributing more positive than negative adjectives to this principal character, there were no differences in the numbers of positive and negative adjectives attributed to the principal characters with depression and dementia.

Furthermore, children’s responses to the social functioning of the principal characters in the vignettes also highlighted differences in children’s thinking about the different mental illness diagnoses. Overall, children’s thinking could be divided into discrete groups that differentiated positive and negative behaviours concerned with the safety and risk aspect of mental disorder (negative behaviours), and the personal functioning of the individual with mental health problems (positive behaviours). The emergence of these two distinct groups is in accordance with previous research that has been carried out. For example, research in the adult literature has highlighted beliefs that mental disorder predisposes to violence and that this group of individuals are more likely to commit a violent crime than a ‘normal’ person (Monahan, 1992).
The adult literature has also shown that the general public are unwilling to engage in social relationships with those who suffer from mental illness (Brockington et al., 1993), especially if hospitalisation has been reported (Phillips, 1966). However, although children distinguished between positive and negative behaviours for the mental health problems, the precise structure of the factors varied according to mental illness diagnosis, indicating that children were differentiating between the different mental disorders. For example, for depression and anorexia nervosa children grouped negative behaviour according to whether the behaviour was towards others or towards the principal character themselves. For dementia, children grouped all negative behaviour together into one factor. Similarly, for depression children grouped positive behaviour according to personal functioning and interpersonal functioning, whereas for anorexia nervosa and dementia they grouped all positive behaviours together.

Children’s responses to the social functioning of the principal characters highlighted age differences in their thinking about the different mental illness diagnoses. In the case of a diagnosis of depression, children demonstrated increasing negativity in their responses with age. Children were more likely to think that the principal character with depression would display negative behaviours associated with the safety and risk towards others with age. However, children also demonstrated increasing positivity in their responses to the principal characters diagnosed with depression and anorexia nervosa; children were more likely to think that these principal characters would show positive personal functioning behaviours. With respect to age, the findings of the present study support the results of previous studies (Studies 2 to 4), whereby age differences were found in children’s knowledge and understanding of mental illness. In the present study, the age differences that were found related to children’s conceptions of the types of behaviour that they believe the principal characters to display. Questioning children about the social functioning of the principal characters does not so much relate to the emotional aspects of children’s representations of mental illness, but rather the content of their conceptions. Where children were questioned about emotional aspects of their representations of mental
illness, for example examining affect, empathy and social distance, no age differences were found.

Gender appeared to play an important part in children’s emotional responses to mental illness. Differences were found in boys’ and girls’ social distance ratings, affect ratings, social functioning ratings and adjectives attributed to principal characters. With reference to affect, girls tended to like the principal characters more than boys. Girls also tended to indicate less social distance to the principal characters from themselves, whereas boys’ responses tended to indicate a wish to keep a greater social distance between themselves and the individuals with mental health problems. With respect to social functioning, gender differences were also found. Boys were more likely to respond that the principal characters would display negative behaviours than girls, who were more likely to respond that the principal characters would display positive behaviours. Furthermore, gender differences were found in the adjectives attributed to the principal characters; girls attributed more positive adjectives than boys. For example, girls described the principal character with anorexia as ‘not scary’, ‘not violent’, ‘clean’, ‘good’, ‘hardworking’ and ‘nice’. Whereas boys were more likely to attribute the words ‘scary’, ‘nasty’, ‘dirty’, ‘lazy’ and ‘unfriendly’ to the principal character with anorexia nervosa. Similarly, girls described the principal character with depression as ‘not scary’, ‘not violent’, ‘clever’, ‘friendly’ and ‘nice’. Boys on the other hand attributed the words ‘scary’, ‘violent’, ‘bad’, ‘dirty’, ‘unfriendly’, ‘lazy’ and ‘nasty’ to the principal character with dementia.

These gender differences found in the present study support the findings of previous work (e.g., Marsden & Kalter, 1976; Ross & Ashok, 1983), and of Studies 2, 3 and 4. For example, girls have been found to be more compassionate in their responses to the mentally ill, showing greater social acceptance compared to boys (Ross & Ashok, 1983). In the present study girls were also found to be more positive, sympathetic and showed more empathy in their responses to the individuals diagnosed with mental illness in the vignettes. For example, they liked the principal characters more than boys, and attributed more positive adjectives to describe the principal characters.
in the vignettes compared to boys. Similarly, Marsden & Kalter (1976) also found
girls to show greater acceptance of the mentally ill than boys, whereby girls tended to
normalise the behaviour of the mentally ill individual by explaining their behaviour
as creative or the product of an imaginative mind. In the present study, girls
attributed more positive social functioning behaviours to the principal characters in
the vignettes compared to boys. Girls may place a greater emphasis upon social and
psychosocial factors, leading to a greater concern that individuals with mental health
problems do not become socially isolated (Ross & Ashok, 1983). This is supported
by girls responses to the social distance questions in the present study, whereby their
responses indicated less social distance between themselves and the principal
characters in the vignettes compared to boys. However, it is also important to note
that the results, although consistent with previous work, may have been affected by
the gender of the principal character, in that children were asked to respond to a
female principal character. Furthermore, the researcher herself was female. It is
possible, therefore, that the more sympathetic and positive response of girls
compared to boys in the present study, may have been a function of girls identifying
with the gender of the principal character and the researcher, being a member of the
same sex, resulting in their greater compassion and empathy.

The patterns of correlations between children’s responses to social distance, affect,
empathy, social functioning and adjectives attributed to the principal characters were,
overall, in the directions predicted, and revealed children’s thinking about the
different mental illness diagnoses to be rational and logical. For example for
depression, the more likely children perceived the principal character to show
positive behaviours such as get a job and getting married the more the children liked
the principal character. Conversely, the more likely children perceived the principal
character to display negative behaviours such as attacking someone in the street or
becoming a burglar, the less the children liked the principal character and the less
they felt sorry for them. Similarly, for anorexia nervosa and dementia, where
children perceived the principal character to display positive behaviours, the smaller
the perceived social distance and where children perceived the principal character to
display negative behaviours, the greater the perceived social distance. Furthermore,
where principal characters were believed to show negative behaviours, the children tended to attribute more negative adjectives. Conversely, where principal characters were perceived to display positive behaviours, children tended to attribute more positive adjectives.

7.5 Conclusion

The findings of the present study highlight that gender and mental illness diagnosis play a much greater importance compared to age in children's emotional responses to mental illness. With reference to mental illness diagnosis, children liked the principal character with depression least and felt most sorry for the principal character with dementia. The present study also revealed that children's emotional responses seemed to be dependent upon the type of behaviour that the children perceived the principal characters to display (positive or negative). Furthermore, the patterns of the factors and correlations that arose indicate that children are rational in their thinking about mental illness, and an ability to differentiate between the different mental health problems. With reference to gender, girls were more caring, compassionate and positive about the principal characters with mental health problems, supporting previous research. The importance of gender in children's emotional responses to mental illness in the present study is in contrast to the findings of Studies 2, 3 and 4, where children's knowledge and understanding of mental illness was investigated and the majority of the differences that were found were associated with age.
CHAPTER 8

Discussion

8.1 Introduction

The research conducted for this thesis investigated children’s representations of mental illness, and addressed a number of limitations relating to theoretical and methodological problems revealed by the literature review in Chapter 2. This chapter begins by reviewing the main findings of the present studies in relation to existing work, thus demonstrating the novel contribution made, thorough revisiting the research questions set out at the end of Chapter 2. The chapter then discusses the findings of the present work within a theoretical context, including a discussion of the naïve theory approach, and alternative domain-specific theoretical explanations. This section also includes an examination of the findings of the studies within a wider context. This is then followed by a section that discusses the limitations of the studies, and a discussion of directions for future work. Finally, this chapter presents an outline of the main conclusions.

8.2 Research Questions Revisited

8.2.1 What do children know and understand about the different terms used to refer to mental illness and the mentally ill, and what is the appropriate terminology and methodology to use with children?

Research questions relating to language and methodology were important because much of the previous work has not inquired about how children refer to the mentally ill and what they understand about the terminology used. Furthermore, it has also tended to use open-ended interviewing techniques, which has raised the possibility that the findings of such studies may underestimate children’s knowledge and understanding because of problems of verbal reporting (Karmiloff-Smith, 1988).
With reference to language, Study 1 therefore aimed to establish an appropriate terminology in relation to mental illness to utilise with children, providing an important grounding for the studies that followed in order to maintain face validity. The study found that children had different understandings of the different general terms presented, and that, on the whole, the children did not hold accurate conceptions of these terms. For example, 'middle' and 'old' children tended to confuse the term 'mad' with meaning 'angry' on some occasions, but understood it to mean 'mentally ill' on others. Previous research has also found that children hold different conceptions of the different terms (Poster et al., 1986; Spitzer & Cameron, 1995). Overall, it appeared that children had the most understanding of the term 'crazy', with even the youngest children referring to an individual who is 'crazy' as 'out of control', 'wild' and 'different'. Nevertheless, the children did differentiate between the different general terms, and appeared to develop more of an understanding of the terms 'mad' and 'mentally ill' with age.

Children also lacked knowledge of the specific terminology relating to the different types of mental health problem. The findings, again, appeared to reveal an increase in understanding of the specific diagnostic labels with age, with 'young' children demonstrating little knowledge of the mental health problems. 'Middle' children appeared to hold knowledge about eating disorders, depression and an addiction to alcohol and drugs, while 'old' children appeared to know about all of the diagnostic labels presented, apart from schizophrenia, which is perhaps surprising as these are the individuals who often make our news headlines. Thus, these findings revealed the importance of establishing children's understanding of the different terms.

With reference to methodology, the focus group study also revealed that presenting children with descriptions of the behaviour of an individual with a mental illness enabled children of all ages to respond to further questions. Furthermore, the use of vignettes permitted children to be presented with the 'identity' of the different mental health problems, thus allowing the children to be provided with identical and accurate information about each of the different mental illness diagnoses in the subsequent studies. In addition, cards comprising the card selection tasks, for all
studies, were generated from the focus group study (Study 1), where children provided a large number of responses, enabling children to be presented with responses that had been generated by other children of a similar age; thus the words chosen were likely to reflect the children’s own understanding.

In light of these findings from the focus group study, the studies that followed (Studies 2 to 5) utilised a semi-structured interview technique, incorporating vignettes and card selection tasks. Thus, the studies: 1) utilised a combination of diagnostic labels and vignettes describing the behavioural symptoms of the mental illnesses, to provide children with accurate information about the mental illnesses, rather than using terms such as ‘crazy’, ‘mad’ and ‘mentally ill’ that relate to individuals with mental health problems in a general way; and 2) presented children with cards containing responses from children of a similar age in order to minimise the problems of unassisted verbal reporting.

8.2.2 What do children know and understand about the causes, consequences, curability and timeline of different types of mental illness, and are there developmental trends in their knowledge and understanding of these components in relation to mental illness?

The findings of Studies 2 to 4 revealed that children do appear to conceptualise mental illness using the different dimensions as set out by the Leventhal model: causes, consequences, curability and timeline. These studies also found developmental trends in children’s thinking about these components. All of these studies found that children showed an increase in their knowledge and understanding of the causes, consequences, curability and timeline of mental illness with age. Previous research into children’s conceptions of mental illness has also found an increase in knowledge of mental illness with age (Conant & Budoff, 1983), and that younger children (aged 6 to 7) demonstrate very little knowledge of the causes and treatment of mental illness compared to older children (aged 12 to 13 years) (Spitzer & Cameron, 1995). Similarly, Weiss (1985) found that, as children become older, they are more likely to view mental illness as different from other types of illness. Furthermore, research into children’s conceptions of physical illness also reports an
increase in children’s knowledge and understanding with age. For example older children have been found to understand that there may be a variety of causes for illness, other than contagion and contamination (Bibace & Walsh, 1980; Hergenrather & Rabinowitz, 1991). Older children have also been found to demonstrate a more developed and sophisticated understanding of the concepts associated with the consequences of physical illness (Rubovits & Siegel, 1994).

More interestingly, however, the finding of Studies 2 to 4 also suggested that children do not acquire an understanding of all of the dimensions at the same time, but that children acquire an understanding of some of the components before others; that there is an order of acquisition of the dimensions within the model. For example, older children indicated a less clear understanding of the consequences of mental illness compared to their understanding of the causes, curability and timeline components. These findings suggest that children first attain an understanding of the causes, curability and timeline of mental illness, and their comprehension of consequences develops later. Consequences are more abstract, varied and open-ended in nature compared to causes, curability and timeline. For example, if an individual developed a common cold, there would be little debate that the person has caught the illness and would recover in a very short period of time. However, in terms of the consequences of having a cold, more than one possibility arises; the individual may simply stay at home, alternatively they may go to see their doctor. The consequences of developing a cold will therefore depend on the individual and how they feel. These findings are consistent with previous research that has suggested that children’s thinking about more complex and abstract concepts of illness, such as consequences or prevention, develop more slowly than their thinking about more concrete concepts such as cause or symptoms (Rosenthal et al., 1995; Schmidt & Weinshaupt, 1990). It is therefore not until children develop the ability for more abstract reasoning that they develop the ability to reason about consequences. Thus, children acquire knowledge and understanding of consequences at a later date than knowledge and understanding about causes, curability and timeline.
8.2.3 Do children reason about mental illness as a distinct domain, are they coherent in the answers that they give, do they construct causal-explanatory understandings of mental illness, and are there developmental trends in children's reasoning about mental illness?

In order to answer the above questions, Studies 3 and 4 adopted the naïve theory approach and compared children's thinking about mental illness with their knowledge and understanding of physical illness. The naïve theory approach was a novel theoretical perspective to use for exploring children's thinking about mental illness; there have been no previous investigations of children's conceptions of mental illness from this viewpoint.

Studies 3 and 4 demonstrated the usefulness of the naïve theory approach for exploring children's thinking about mental illness, and the findings of these studies are consistent with the naïve theory perspective. This approach proposes that young children have their own way of understanding phenomena, which may be different to the way that older children and adults understand the world around them. The present research found that younger children were differentiated in their thinking about mental illness compared to older children. For example, younger children tended to rely on what they know and understand about common physical illnesses in order to reason about the mental illness diagnoses. This was true for children in Studies 2, 3 and 4. Thus, younger children tended to provide physical/medical responses to causes, 'medicalised' consequences and shorter recovery times compared to older children. Furthermore, some younger children tended to provide contagion and contamination responses to causes. The predominance of young children providing causal contagion and contamination responses is consistent with research into children's understanding of physical illness (e.g. Siegal, 1988; Siegal et al., 1990; Hergenrather & Rabinowitz, 1991). Older children, however, appear to no longer rely on a medical model when responding about the causes, consequences, curability and timeline of mental illness, and provided qualitatively different responses compared to the younger children.
The naïve theory approach also proposes that evidence of a theory-like understanding in a child requires the child to display a knowledge of ontological distinctions, coherence and causal-explanatory understandings (Wellman, 1990). Studies 3 and 4 showed evidence of theory-like thinking in the children's responses to the mental illness diagnoses, with the children displaying an increased understanding of the difference (i.e., the ontological distinction) between physical illness and mental illness with age. Younger children did not clearly differentiate between the two broad types of illness; however older children did provide distinct causes, consequences, curability and timelines for mental and physical illnesses, suggesting that they had acquired an understanding of the distinction between the two illness domains. Nevertheless, all children were able to construct coherent, causal-explanatory understandings of both mental and physical illness, demonstrated by the patterns of paired causes and consequences (Study 3) and consequences and curability/timelines (Study 4) that the children produced, although the children tended to develop and refine these response patterns with age.

8.2.4 Having established an appropriate terminology for children, what attitudes do children hold towards those who are mentally ill?

Chapter 2 highlighted that previous research has found that children show a negative response to the mentally ill, not wanting to associate with them and viewing them as unattractive and deviant (e.g., Poster et al., 1986; Roberts et al., 1984; Wilkins & Velicer, 1980). However, the findings of Study 5 suggest that children are more positive towards individuals with mental health problems than previous research has found. For example, overall, children attributed more positive than negative adjectives to describe the principal characters in the vignettes. These contrasting findings may be due to differences in methodology, with the present study having developed an appropriate language and methodology for children. Alternatively, the differences in findings may be due to much of the previous research into children's attitudes towards mental illness investigating children's attitudes towards mental illness as a general concept, rather than exploring children's conceptions of the different diagnoses.
In fact, the present research found that children’s attitudes towards mental illness did vary according to mental illness diagnosis. Overall, children seemed to distinguish depression as the least favourable of the mental illness diagnoses and attributed more negative than positive adjectives to a person with this condition. In contrast, however, children felt most sorry for the principal character with dementia, and showed an increase in positivity towards the principal character with anorexia with age.

Depression may be perceived as a common emotion experienced by most people, and it seems likely that children will have experience of others, or even themselves, feeling sad, which may not have been a favourable experience. Furthermore, the common use of the word ‘depression’ to describe when someone feels sad within the English language by adults and peers, for example, ‘she’s depressed’, including a negative response of others to an individual who is labelled as feeling ‘depressed’, may not only prevent the children from fully understanding the severity of this condition as an illness, but may also lead to a less positive rating. Interestingly, ‘old’ girls in Study 5 responded to the principal character with depression in a very negative way, describing the individual as ‘scary’, ‘violent’ and ‘nasty’, a finding that is consistent with previous research that has found children’s attitudes to become more negative with age (Royal & Roberts, 1987; Weiss, 1986; 1994).

All children felt most empathy for the principal character with dementia. Studies 2, 3 and 4 revealed an increase in children’s knowledge and understanding of dementia with age. Older children may therefore have felt most empathy for the individual with dementia, as at least some of the symptoms described in the vignette may have reminded them of an elderly relative or neighbour. The behaviours described in the vignette for the individual with dementia portray the person having to be told to wash, brush their teeth and comb their hair. It seems likely that younger children also felt the most empathy with this character, as although this is abnormal behaviour for an adult, it is not unusual for a child to have to be told to do these sorts of things.
The increase in positivity of children towards the principal character with anorexia nervosa may be linked to an increase in knowledge and understanding of the disorder, as anorexia nervosa is more prevalent in adolescence. Anorexia nervosa is also a disorder that is reported by the media for example on television or in teen magazines. Furthermore, the use of the word ‘anorexic’ to describe a person who is exceptionally thin in everyday language may lead older children to be more aware of this condition. In fact, Studies 2, 3 and 4 found that children show an increase in knowledge and understanding of anorexia nervosa with age. The increase in knowledge and understanding found in Studies 2, 3 and 4, and the positive response by children towards this principal character in Study 5, may also reflect prevalence figures. It is reported that younger and younger children are developing eating disorders, for example children as young as 7 years of age have been found to suffer from anorexia nervosa, with the youngest case of bulimia having been reported in a child of 8 years of age (Fox & Joughin, 2002).

Children’s attitudes towards mental illness also seemed to be dependent upon the types of behaviour that the children perceived the principal characters to display, with negative behaviours being associated with safety and risk, and positive behaviours being associated with personal functioning. As already discussed in Chapter 7, the emergence of these two factors is consistent with previous research in the adult literature. For example, adult perceptions of risky behaviour associated with the mentally ill have been found to play an important role in the formation of adult attitudes towards this group of individuals (Monahan, 1992). Similarly, perceptions of adults of the personal functioning of individuals with mental health problems have also been found to be of importance (Phillips, 1966; Brockington et al., 1993).

The findings of Study 5 are consistent with the adult literature, whereby the more children perceived the principal characters to be showing negative behaviours, the more negative their response to those characters. Previous research has also found that where an individual with a mental illness diagnosis has been unable to function within society and hospitalisation has occurred, adults have been found to be
particularly unwilling to engage in social relationships with that individual (Phillips, 1966; Brockington et al., 1993). Roberts et al. (1984) also found that where children were presented with a description of the behaviour of other children with mild and severe medical and psychological problems that they rated such children as least attractive as playmates (Roberts et al., 1984).

Overall, however, the children appeared to be more positive towards the principal characters than has been found in previous research (e.g., Poster et al., 1986; Roberts et al., 1984; Wilkins & Velicer, 1980). Children appeared to distinguish between the different mental illness diagnoses, having different attitudes towards the different mental health problems. Children's attitudes also appeared to be associated with perceptions of positive or negative behaviours of the principal characters, whereby children exhibited more negative attitudes when they perceived the principal character was displaying more negative behaviours.

8.2.5 Do boys and girls have different conceptions of mental illness?

Chapter 2 revealed that conflicting results have been found with respect to boys' and girls' representations of mental illness. The present research explored children's responses for possible gender differences in order to clarify the conflicting results that have been found. Studies 2, 3 and 4 found very few differences in boys' and girls' knowledge and understanding of mental illness, compared to the differences in their knowledge and understanding which were associated with their age. Study 5 on the other hand found the opposite pattern, with gender differences predominating in children's emotional responses to mental illness, and very few differences being associated with the children's age. It appears that boys and girls do not differ so much in their knowledge and understanding of mental illness, but do differ with regard to their emotional response to individuals with mental health problems.

Overall, the results of Studies 2, 3, 4 and 5, with respect to gender, were consistent with the findings of the existing literature. Where gender differences were found by the present studies, girls showed more empathy, and were more sympathetic and positive in their responses compared to boys. For example, girls' responses to the
causes and consequences of the mental illness diagnoses in Studies 3 and 4 demonstrated greater social acceptance compared to boys. These findings were supported by Study 5, whereby girls liked the principal characters more than boys did, they wished to keep less social distance between themselves and the principal characters, were more likely to attribute positive adjectives to the principal characters, and were more likely to think that the principal characters would display positive behaviours than boys, indicating that girls perceived the individuals to be capable of more 'normal' functioning within society than boys. These findings are consistent with previous research that has found gender differences. Ross & Ashok (1983) also found girls to be more considerate in their thinking about mental illness, showing greater social acceptance than boys, not wanting those who suffer from mental health problems to become socially isolated. Furthermore, Marsden & Kalter (1976) found that girls tended to normalise the behaviour of individuals with mental health problems. Overall, results therefore indicated that girls are more positive, sympathetic and compassionate in their responses to individuals with mental health problems. However, although results were consistent with the existing literature, finding that girls were more positive and compassionate in their responses to the principal characters in the vignettes compared to boys, may also have been affected by the gender of the principal character, whereby children were presented with a female. It is possible that girls identified with the female principal character, being of the same sex, leading them to be more empathic in their response. Furthermore, the researcher was female, which may also have affected girls' responses in relation to a female principal character.

8.2.6 Is experience of mental illness related to children's conceptions of mental health problems?

The literature review found that personal experience has been shown to result in a positive change in adult conceptions of the mentally ill (Keane, 1991). However previous research has not explored the importance of the role of experience in the formation of children's conceptions of mental health problems, although there is inconsistency in the findings with respect to children's understanding of physical illness. Studies 1 and 2 therefore investigated whether experience of mental illness is
related to children’s knowledge and understanding of mental health problems. Study 2 found no relationship between experience of mental illness and children’s responses to causes, consequences curability and timeline. This is consistent with studies in the literature that have also found that experience of physical illness does not result in a greater understanding (e.g., Eiser, 1990).

However, very few children in the study reported knowing a person with a mental health problem or reported having experience of mental illness. Similarly, in Study 1, only two children reported experience of mental illness; a girl who reported that her cousin had mental health problems and a boy, who reported that he had ADHD. However, apart from these two children, it appeared that there was very limited experience of mental illness, and in fact none of the other children referred to family members or other individuals that they knew of who suffered from mental disorder.

Finding that children had a limited experience of mental health problems in Studies 1 and 2 is perhaps a surprising result given that the prevalence of mental illness has been reported as high as 1 in 4 people (Royal College of Psychiatrists, 1998-2003). First, it is possible that the children may have come into contact with individuals with mental illness, but been unaware that these people had mental health problems. This may result from an unwillingness of adults to talk about the issue of mental illness because of the stigma attached to having a mental illness diagnosis. Second, children may have known that they had experience of mental illness, but not wanted to report it. Mental illness is an emotive topic, and having observed negative adult reactions to mental health problems may have prevented the children from reporting their experience. Furthermore, children in Study 1 were questioned in groups, which may have also affected disclosure.

Children in Study 1 were questioned about where they had seen ‘these sorts of people’, and responded that they had mainly seen such individuals on television. This is consistent with research findings that the stereotypes that adults hold towards this group of individuals have been linked to how individuals with mental health problems are reported by the media (Borenstein, 1992; Maclean, 1969), in particular
mentally disordered offenders (Shain & Phillips, 1991) and individuals with schizophrenia (Wahl & Lefkowits, 1989). However, Study 5 found children to be more positive in their attitudes towards the mentally ill than previous research has found. The majority of children who participated in Studies 1 and 2 therefore may either not be exposed to media reports of this kind, or not be influenced in the same way as adults. Further research is needed in order to make any firm conclusions.

8.3 Theoretical Implications of the Present Findings

8.3.1 The naïve theory approach and the investigation of children’s thinking about mental illness

The findings of the present studies raise the important theoretical question of how children acquire a naïve theory of mental illness. Some researchers within the naïve theory approach have postulated that naïve theories are offshoots of other types of theories. For example, it has been proposed that children’s naïve theories of biology develop from naïve psychology (Carey, 1985) or naïve mechanics (Au & Romo, 1999). Springer (1999) has put forward an alternative explanation however, whereby naïve theories do not emerge from other theories, but may be informed by them. He proposes that children acquire factual knowledge and generate key inferences from this knowledge. The findings of the present research support the argument of Springer (1999); children’s responses in the present studies suggest that their naïve theories of mental illness are informed by and develop from their factual knowledge and understanding of common physical illnesses. Young children seem to lack early knowledge about mental illness, and use a ‘medical’ model, linked to what they know and understand about physical illness instead, in order to generate explanations of, and predictions about the causes, consequences, curability and timeline of mental illness. This suggests that children acquire their theories through making inductive inferences from factual knowledge that they possess (Springer, 1999). Studies 3 and 4 also highlighted individual differences in the causal-explanatory frameworks that the children employed, as the children provided a number of different profiles of linked causes and consequences (Study 3) and linked consequences and curability/timelines (Study 4), a finding that is not consistent with a Piagetian
approach. Individual differences in children’s naïve theories have been explained as a result of differences in the background knowledge that children hold (Springer, 1999).

Researchers within the naïve theory approach suggest that theory change occurs through the acquisition and reorganisation and restructuring of knowledge within a particular domain (Carey, 1985; Springer, 1999). The findings of the present studies suggest that children’s theories of mental illness change qualitatively from physiological/medical understandings to more specialised and distinct understandings of mental phenomena. From a naïve theory perspective, this would occur as a function of children acquiring additional domain-specific knowledge through exposure to new information about mental illness (Inagaki & Hatano, 1993; Springer, 1999), which then leads them to differentiate between mental and physical illness with age.

Thus, the findings of the present research suggest that children do hold naïve theories of mental illness. Researchers have found that children’s knowledge and understanding becomes increasingly differentiated and theoretically organised with age (Keil, 1989); the findings of Studies 3 and 4 suggest that this is also true for children’s knowledge and understanding of mental illness. Furthermore, children’s understanding of physical illness appears to have been established in early childhood, by the age of 5 or 6 years. The findings of Studies 3 and 4 suggest that children’s naïve theories of mental illness are initially informed by, and develop from, this early established knowledge and understanding of common physical illnesses, through the acquisition of knowledge relevant to the domain of mental illness, thus enabling the generation of distinct explanations of, and predictions about the causes, consequences, curability and timeline of mental health problems. This first starts to occur at the age of 8-9, with explanations and understandings of mental illness becoming more clearly differentiated by the age of 10-11 years.
8.3.2 Evidence of a naïve theory of mental illness or is it modules or expertise?

The naïve theory approach is a domain-specific approach to cognitive development, and although this perspective provides a good explanation of the findings of the present research, there are two other domain-specific viewpoints that need consideration within the context of the present research, namely modularity and expertise.

With respect to a modular account, the present research found that the responses provided by younger children differed from the responses provided by older children; these findings suggest that children's knowledge and understanding of mental illness becomes more accurate and differentiated with age. These findings are not readily compatible with a modular account, whereby children are believed to organise knowledge in the same way and possess the same core conceptions as adults.

The findings of the present research however, are consistent with an expertise viewpoint. Expertise theorists postulate that children start out with little or no knowledge of illness, and, as they develop, they gain information and experience that adds to their knowledge base; the development of children's thinking might therefore be knowledge-driven (Carey, 1985; Chi & Ceci, 1987; Keil, 1989; Hergenrather & Rabinowitz, 1991).

Studies 2 to 4 all found developmental trends in children's thinking about mental illness; children demonstrated an increase in knowledge and understanding of mental illness with age. Studies 2, 3 and 4 also found that younger children were more likely than older children to provide similar responses for physical illness and mental illness conditions. These results can be explained from an expertise viewpoint, whereby children use the information that they have gained about common physical illnesses early on in their development (Lau & Hartman, 1983) to reason about the novel mental illness diagnoses (Kister & Patterson, 1980; Brown et al., 1990). Younger children in Studies 2, 3 and 4 therefore tended to provide physical/medical responses for causes, 'medicalised' consequences and shorter recovery times. Furthermore, expertise theorists postulate that faulty inferences could be seen as a
function of information that a child is exposed to (Sigelman et al., 1993). Older children, however, demonstrated a much more comprehensive knowledge and understanding of the mental illness diagnoses compared to younger children; the responses provided by the older children suggested that they were no longer relying on their knowledge and understanding of physical illness conditions to explain the causes, consequences, curability and timeline of the mental illnesses presented. Expertise theorists would argue that these older children were demonstrating an increased knowledge and understanding of mental illness which has been acquired through experience and information that they have been exposed to, leading to an increase in expertise within this domain.

Expertise theorists propose that children gain ‘expertise’ within a domain because it contains phenomena that they frequently encounter (Wellman & Gelman, 1998). Children are often exposed to and gain experience of common childhood physical illnesses early on in life. Children in Studies 3 and 4 demonstrated most knowledge and understanding of the physical illness conditions. Children are less likely to encounter mental illness at such an early age, and from an expertise perspective, the fact that the children displayed ‘poorer’ knowledge in the mental illness domain is perhaps not surprising.

It is therefore acknowledged that the expertise approach also provides a credible explanation of the present findings, as does the naïve theory account. However, the naïve theory approach was more useful as a heuristic framework for structuring the present research, as it generated more specific predictions (ontological distinctions, coherence, and causal-explanatory judgements) than an expertise account would have permitted, and in this sense, the naïve theory approach is judged to be a more helpful framework for understanding children’s development within this domain, through its ability to generate more specific predictions for empirical testing.
8.4 Wider Influences on Children’s Representations of Mental Illness

A discussion of the development of children’s knowledge and understanding of, and attitudes towards, mental illness needs to consider the relative contribution of the child’s own cognitive abilities versus the environmental input of information, to the child’s understanding in this domain.

It is possible that the general cognitive ability of the child affects the acquisition and utilisation of information relevant to the domain of mental illness. Children with a higher IQ might be more able to extract, process and draw inferences from, information about mental illness, which is contained in media reports, and the discourse of parents and other people. For this reason, children with a higher IQ might be more aware of mental health problems within the community compared to children with a lower IQ. Children with a higher IQ would therefore be expected to hold different theories to children with a lower IQ, which would be expected to be more accurate and sophisticated, similar to those held by older children. In fact, Study 4 revealed that this was true for only one of the mental illness diagnoses. This suggests that general cognitive ability does not have a substantial influence on the development of children’s thinking within the mental illness domain. This is not consistent with previous research that has found verbal IQ to be a significant predictor of children’s ability to conceptualise physical illness (Patterson et al., 1999). However, the nature of the task in Study 4 leaves open the possibility that the findings were the result of children with a higher verbal IQ being more proficient at the task. Further research is needed in order to make any firm conclusions.

However, Studies 2, 3 and 4 also revealed that older children no longer appear to rely on what they know and understand about physical illness, raising the question of how children acquire information that is relevant to the mental illness domain. A number of environmental factors have the potential to provide such information, for example, parental discourse, school and peer group, and the media, each of which merit consideration.
Peer groups and parental discourse may play an important part in children’s knowledge of and attitudes towards different phenomena. For example, with reference to the present research, the terms ‘depressed’, meaning an individual who feels sad, and ‘anorexic’ to describe a person who is exceptionally thin, are used within everyday English language by children and adults, providing information regarding these two types of mental illness. Children may also gain information about mental health problems through the type of parental discourse that they experience. For example, negative discourse by their parents about mental health problems could have a negative effect on children’s responses to the mentally ill. Furthermore, eating disorders have traditionally been most prevalent in adolescence, but are now being identified in girls as young as 7 and 8 years of age (Fox & Joghin, 2002). This increase in weight sensitivity has led to children being aware of their body size and shape at a much younger age. This increased awareness with body size and shape has often been linked to media reporting in teen magazines leading to peer group pressure to look a certain way, for example like celebrities. In fact, some of the children in Study 1 responded that the principal character with anorexia nervosa might have seen something on television or read something in a magazine and therefore wanted to be like that person, but had taken the imitation too far.

In fact, research has found that the media tend to depict mental illness in stigmatising ways on television, in films and in newspapers (Diefenbach, 1997; Gerbner, 1995; Wahl, 1995; Wahl & Roth, 1982). Furthermore, negative depictions of individuals with mental health problems have been found to influence adult attitudes towards the mentally ill (Philo et al., 1994; Thornton & Wahl, 1996; Wahl & Lefkowits, 1989). In the present research, children in Study 1 reported that they had seen ‘these sorts of people’ on television. Individuals with mental health problems have been depicted in soaps on television, many of which are broadcast before the watershed, and are therefore accessible for children to view. It therefore seems likely that children may obtain information about mental health problems from the media.

It seems most likely that both cognitive abilities and the input of information from the environment are contributors to the formation of children’s knowledge and
understanding of mental illness. The findings of the present research suggest that both of these factors require further investigation in order to establish their relative contributions to children's understanding within this domain.

8.5 Limitations of the Present Research

There are a number of limitations associated with the present work that need consideration. First, with reference to sample size, only 36 children took part in Study 1, providing a very small sample size. Study 2 also had a relatively small sample size, and no power calculations were conducted. However, Studies 3, 4 and 5 all had good sample sizes with an appropriate level of power. Second, the majority of children who participated in the research attended Roman Catholic Primary Schools, and were of a White, Middle Class background. These characteristics limit the generalisability of results to other populations. The investigation of children from different backgrounds and from other ethnic groups may have provided differing findings. For example, more rejecting attitudes of the general public towards the mentally ill have been found to be associated with lower levels of education (Brockman & D'Arcy, 1978; Trute, Tefft & Segall, 1989).

A third limitation relates to the findings in relation to experience of mental illness. Studies 1 and 2 found no differences in children's thinking associated with experience of mental illness, and very few children reported personal experience of mental health problems. It is possible that these findings may have been a function of the methodology utilised; findings were based on self-reporting. In Studies 1 and 2, children were simply asked whether they knew anyone with a particular mental illness diagnosis; very few responded that they did, which may have been because the children did not recognize or understand the mental illness diagnosis per se. Alternatively, children may have had experience of the particular mental illness, but not wanted to report it. This may be due to the emotive nature of the topic of mental illness. This is also true of personal experience of mental health problems, especially if the experience had involved a family member. This may lead to reluctance to report personal experience.
Fourth, the present research did not investigate the possibility that factors other than first-hand experience and verbal IQ may influence the development of children’s knowledge and understanding of mental illness. For example, children’s thinking about mental health problems may be influenced by parents or relatives, teachers, peers or the media.

Finally, the present research presented children with verbal descriptions of adult female principal characters in the vignettes, which may have affected children’s responses. This raises the question of whether children would respond in a similar manner if presented with an adult male or a child principal character with mental health problems. Furthermore, the researcher herself was female. Children were therefore presented with a female principal character by a female researcher. It is possible that this could also have affected children’s responses. Similarly, there is the question of whether the method of presentation of the material affected children’s responses, and whether children would have provided a different set of responses if a different method of presentation of the mental illness diagnoses had been utilised, for example the use of film.

8.6 Directions for Future Work

In light of these limitations, future research needs to address the following areas. Firstly, research questions arise regarding whether ethnicity or class affect children’s conceptions and emotional responses to mental illness. Secondly, future research should further explore experience of mental illness as a factor in children’s representations of mental illness, using alternative approaches; for example by asking whether children know any individual with similar behavioural symptoms as the principal character in the vignette or by asking parents or family members, or inquiring about family history of mental health problems through the use of medical records.
Thirdly, research is needed to examine possible links between children’s thinking about mental illness and parental knowledge and understanding of mental health problems, or media exposure to issues relating to mental illness, for example on television. Similarly, with respect to emotional responses to mental illness, exploration is needed into factors that may have influenced differences in boys’ and girls’ emotional responses to mental health problems. For example, are there links between children’s emotional responses to mental illness and the attitudes of significant adults’ attitudes towards the different mental illness diagnoses? Do the emotional responses of significant male and female relatives, parents, or carers also vary according to the mental health problems, and how do their attitudes relate to those of the children?

Finally, the findings of the present research show that children appear to gain knowledge and understanding of mental illness throughout the primary school years. Future research should therefore develop and evaluate the effectiveness of educational programmes regarding mental health problems for children in primary schools, in order to combat stigmatization, and the negative and rejecting response found in adults.

8.7 Conclusions

The research conducted for this thesis investigated children’s representations of mental illness, and addressed a number of limitations relating to theoretical and methodological problems revealed by Chapter 2, thus building upon and extending previous work. In light of this, the findings of the present research reveal that:

1) In terms of appropriate terminology, a combination of diagnostic labels and vignettes describing behavioural symptoms of the mental illnesses should be utilised for examining children’s understanding of mental illness. A suitable methodology can incorporate a semi-structured interview technique and card selection tasks, with cards generated by children of a similar age.
2) The five-dimensional model put forward by Leventhal et al. does provide a useful conceptual framework for the investigation of children’s knowledge and understanding of mental illness.

3) Children show developmental trends in their thinking about mental illness; they show an increase in their knowledge and understanding of the causes, consequences, curability and timeline of mental illness with age. Children develop an understanding of mental illness during the primary school years. The majority of children of 5 to 6 years of age show little understanding of the causes, consequences, curability and timeline of mental illness. By the age of 10 to 11 years, however, children do have a considerable understanding of the causes, consequences, curability and timeline of mental health problems.

4) The naïve theory approach does provide a useful theoretical perspective within with to explore children’s thinking about mental illness. Children appear to construct naïve theories of mental illness. They also show developmental trends in their thinking about mental illness, developing an understanding of the difference between physical illness and mental illness with age, with younger children not clearly differentiating between the two broad types of illness, and relying on what they know and understanding about physical illnesses. However, older children do provide distinct responses for mental and physical illnesses. Nevertheless, children appear to hold coherent, causal-explanatory understandings of mental and physical illness at all ages, although they develop and refine these understandings with age.

5) Children appear to be more positive towards individuals with mental health problems than previous research has found. Their attitudes towards mental illness appear to vary according to mental illness diagnosis, and seem to be dependent upon the types of behaviour that the children perceive an individual to display, with perceived negative behaviours being associated with more negative attitudes.
6) Girls appear to be more positive, sympathetic and compassionate in their responses to individuals with mental health problems compared to boys. However, it appears that girls and boys tend not to differ so much in their knowledge and understanding of mental illness as they do in their emotional responses to individuals with mental health problems.

7) Personal experience may not have an effect on children's knowledge and understanding of mental illness. However, very few children reported personal experience of mental illness. Further investigation is needed, therefore, in order to make any firm conclusions.

8) Finally, the findings of the present studies suggest that verbal IQ may not have a substantial influence on children's knowledge and understanding of mental health problems. Further exploration is therefore needed into the relative contribution of environmental factors and the child's own cognitive ability.
REFERENCES


International Society for the Study of Behavioural Development.


APPENDIX 1

Chapter 3 (Study 1)

1.1 Series A, Focus Group Schedule, ‘Young’ Group (Years 1 and 2)

1.1.1 Introduction

- Introduction of facilitator.
- Explanation of process - will ask some questions to find out what they think.
- Inform children that there are no right or wrong answers and that no-one will know who they are from their answers – only the facilitator.

1.1.2 Questions

If I said that someone was CRAZY:

1. How would they act?
   What would they do?
2. What happens if someone is crazy?
3. What makes them become crazy?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

If I said that someone was MENTALLY ILL:

1. How would they act?
   What would they do?
2. What happens if someone is mentally ill?
3. What makes them become mentally ill?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?
If I said that someone was MAD:

1. How would they act?
   What would they do?
2. What happens if someone is mad?
3. What makes them become mad?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

Are these the words that you would use to describe these people?

Where have you seen these sorts of people?

Do you know anyone who is mad, mentally ill, or crazy?

What does it mean if someone has:

- Depression
- Schizophrenia
- Alzheimer’s Disease or Dementia
- An Eating Disorder
- An Addiction to Alcohol and Drugs
- Problems with Anxiety

1.2 Series A, Focus Group Schedule, ‘Middle’ Group (Years 3 and 4)

1.2.1 Introduction

- Introduction of facilitator.
- Explanation of process - will ask some questions to find out what they think.
- Inform children that there are no right or wrong answers and that no-one will know who they are from their answers – only the facilitator.
1.2.2 Questions

If I said that someone was MAD:

1. How would they act?
   What would they do?
2. What happens if someone is mad?
3. What makes them become mad?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

If I said that someone was CRAZY:

1. How would they act?
   What would they do?
2. What happens if someone is crazy?
3. What makes them become crazy?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

If I said that someone was MENTALLY ILL:

1. How would they act?
   What would they do?
2. What happens if someone is mentally ill?
3. What makes them become mentally ill?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

Are these the words that you would use to describe these people?

Where have you seen these sorts of people?
Do you know anyone who is mentally ill, crazy, or mad?

What does it mean if someone has:

- Depression
- Schizophrenia
- Alzheimer’s Disease or Dementia
- An Eating Disorder
- An Addiction to Alcohol and Drugs
- Problems with Anxiety

1.3 Series A, Focus Group Schedule, ‘Old’ Group (Years 5 and 6)

1.3.1 Introduction

- Introduction of facilitator.
- Explanation of process - will ask some questions to find out what they think.
- Inform children that there are no right or wrong answers and that no-one will know who they are from their answers – only the facilitator.

1.3.2 Questions

If I said that someone was MENTALLY ILL:

1. How would they act?
   What would they do?
2. What happens if someone is mentally ill?
3. What makes them become mentally ill?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

If I said that someone was MAD:

1. How would they act?
   What would they do?
2. What happens if someone is mad?
3. What makes them become mad?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

*If I said that someone was CRAZY:*

1. How would they act?
   What would they do?
2. What happens if someone is crazy?
3. What makes them become crazy?
4. How long will it take for them to get better?
5. Can they get better?
   Do they get better on their own, or do they need help to get better?

*Are these the words that you would use to describe these people?*

*Where have you seen these sorts of people?*

*Do you know anyone who is crazy, mad, or mentally ill?*

*What does it mean if someone has:*

- Depression
- Schizophrenia
- Alzheimer’s Disease or Dementia
- An Eating Disorder
- An Addiction to Alcohol and Drugs
- Problems with Anxiety

**1.4 Series B, Focus Group Schedule**

**1.4.1 Introduction**

- Introduction of facilitator.
• Explanation of process - will ask some questions to find out what they think.
• Inform children that there are no right or wrong answers and that no-one will know who they are from their answers – only the facilitator.

1.4.2 Read Vignette

Ensure each focus group receives a different order of mental illness diagnosis.

**Depression:**

This person feels sad all of the time and doesn’t like to do the things that they usually like to do anymore. They feel as if they have no energy and feel tired most of the time. In general they think badly of themselves and feel that they aren’t worth anything and blame themselves when things go wrong. They also find it hard to sleep.

**Anorexia Nervosa:**

This person has lost a lot of weight and because of this their life is now in danger. They are frightened of putting on weight and even though they are very thin, they still say that they are fat and need to lose more weight.

**Schizophrenia:**

This person jumbles their words and sometimes doesn’t make sense. They believe things that aren’t really true and hear voices that aren’t really there. They find it hard to look after themselves on their own, and have to be told to wash, brush their teeth and comb their hair. And they aren’t interested in doing the things that they used to like doing anymore.

**Obsessive Compulsive Disorder:**

This person keeps on having thoughts about there being germs everywhere. They think that germs are on everything that they touch and so they keep on washing their hands to get rid of the germs. If they can’t wash their hands then they get very upset because they think that the germs will make them get ill and they will die. They seem to spend almost all of their time washing their hands.
**Panic Disorder:**
This person keeps on having panic attacks, this is when their heart beats very quickly and they start to shake. They feel like they can’t breathe and think that they are going to have a heart attack and die. After they’ve had a panic attack, they worry about when they will have another one and this has stopped them from doing things that they want to do.

**Dementia (Alzheimer’s Type):**
This person finds it hard to remember things and to learn new information. They find it hard to get themselves washed and dressed in the morning and they also need help to eat, so someone has to feed them. They don’t recognise their family anymore and they need to be looked after all the time.

**1.4.3 Questions**

1. What do you think will happen to this person?
2. What made this person be like this?
3. How long will it take for this person to get better?
4. Can they get better?
   Do they get better on their own, or do they need help to get better?
5. Do you think that this person is mentally ill?
   Are they crazy?
   Do you think that they are mad?

**1.5 Focus Group Transcripts**

R refers to the researcher, and the letters A to F indicate responses provided by different children in each group, but do not necessarily represent the same children responding after each question.
1.5.1 Responses of children to the term CRAZY

Years 1 & 2:
R: Right then, ok, so if I said to you that someone was ‘crazy’, how do you think they would act? Yeah, go on……
A: stupid
R: stupid, yeah
B: out of control
R: yeah
C: quite silly
R: silly, any more? No? Ok, and what would they do?
A: they’d do silly things
R: they would do silly things, anything else?
B: they would fall over
R: right
C: they’d mess their bedrooms up
R: ok
D: they’d do anything if they were crazy
R: right ok, ok, and what happens if someone is ‘crazy’?
A: they knock things over
R: ok, anything else?
B: they pull people’s hair
R: anything else?
C: they knock people over
R: that’s not very nice is it, ok
D: I know, they draw on the wall
E: they beat people up
R: they beat people up, anything else?
F: they might throw a tantrum
R: ok
**Years 3 & 4:**

R: if I said to you that someone was ‘crazy’, how do you think they would act?
A: like, like stupid, walking around like
B: being drunk
R: being drunk?
C: jumping around everywhere
D: having drugs
C: jumping around with a bucket on their head hitting the bucket with their hand
E: getting posters off the walls
R: taking the posters off the walls, ok
F: wrecking stuff
R: wrecking stuff, ok, and what happens if someone is ‘crazy’?
F: they go mental
R: they go mental, ok

**Years 5 & 6:**

R: so, if I said to you that someone was ‘crazy’, how to you think they would act?
A: mad
B: wild
C: mental
D: over the top
R: ok, and what happens if someone is ‘crazy’?
A: you try and stop ‘em
B: they go to a mental hospital
R: right
C: you try and stop ‘em but to calm them down
R: to calm them down, yeah
D: to try to understand how they feel
1.5.2 Responses of children to the term MAD

Years 1 & 2:
R: If I said to you that someone was ‘mad’, how would they act?
A: very stupid
R: very stupid, ok
B very incredible
C: they’re funny
R: they’re funny, anything else?
D: they bump into everything
R: they bump into everything
E: they’re dizzy
R: they’re dizzy, ok and what happens if someone is ‘mad’?
A: um, they do silly things
B: and I know…….they chuck theirselves out the window
R: they chuck theirselves out of the window?
C: they trip theirselves up
R: ok

Years 3 & 4:
R: so if I said to you that someone was ‘mad’, how would they act?
A: they would be cross and stuff like that
B: taking all the stuff down in the house
R: they would take all the stuff down in the house?
C: and they would be cross
R: be cross
C: send you to bed, and I’ve got a tele in my bedroom so I put the tele on and close
the door
R: ok, and what happens if someone is ‘mad’?
A: um
B: they be stupid
R: they’d be stupid? Ok
C: they be walking upstairs crazy
D: and they might just fall down and wack their head

_Years 5 & 6:
R: so, if I said to you that someone was 'mad', how would they act?
A: the same as crazy
R: the same, ok and what happens if someone is 'mad'?
A: try to calm them down
A: it's not the same, mad's like when you're angry, crazy's like when you go jerky

1.5.3 Responses of children to the term MENTALLY ILL

_Years 1 & 2:
R: ok, so if I said to you that someone was 'mentally ill', how would someone who was 'mentally ill' act?
A: really, really horrible
B: they want to stay in bed all day
C: they'll have to go to the doctors and they'll stick a needle up their bum
R: oh, ok
D: they will be lazy
R: right they'll be lazy
E: they would take 100 tablets a day
F: they wouldn't open their eyes
D: they would die
C: they would fall over

_Years 3 & 4:
R: if I said to you that someone was 'mentally ill'
A: oh, I know
R: how would they act?
A: they would act like stupid and like hyper and stuff like that
B: or they would stay in bed
C: I go hyper on apples, I have to have one a day
R: you go hyper on apples?
C: I used to eat a whole bag
R: how do you think they would act if someone was ‘mentally ill’?
D: they would start acting a bit stupid, like walking around like that, but they have to buy tablets and like take loads
E: oh I know......they walk wobbly
R: they walk wobbly?
E: say they were walking about like that, they’d be walking about like that and banging into people
D: they would fall off the chair if they were sitting down
F: when I went on holiday once I saw this man without a hand, it was sick and I’m going back there again in May

Years 5 & 6:
R: if I said to you that someone was ‘mentally ill’, how do they act?
A: um,
B: mental
R: mental
C: they don’t really understand as much things as you
D: they could like lose their memory
E: and they might not know what bad means, so they might do stuff wrong and they don’t know what they’re doing
R: ok
F: they won’t really understand what you’re saying and they’ll just, won’t, they’ll believe anything
R: ok, and what happens if someone is ‘mentally ill’, if they have got a mental illness, what happens?
A: they might not care
B: they might not remember you if you’re like um friends
C: they don’t recognise anything
B: they might ask you what you’re name is
1.5.4 Children's responses to specific diagnostic labels

_Years 1 & 2:_
R: they might not know?
B: your name
R: your name, ok

R: ok, so what does it mean if someone has depression?
A: um
B: don't know what that means
R: you don't know what it means?
C: depression
A: uh, I don't know
R: you don't know, yeah go on......
D: it means speaking different language or voice
R: ok
E: they're under quite a lot of pressure
R: right, ok, and what about schizophrenia?
A: schizophrenia? You've got chicken pox
B: what does that mean?
R: they're funny words aren't they?
A: chicken pox
R: what about Alzheimer's disease? (pause) Never heard of that one? Ok, do you know what an eating disorder is?
A: yeah, it's when you eat fast and you.....it gets all stuck in your throat
R: ok, right and what about if someone had problems with anxiety?
A: anxiety, you got your hands out
B: what's that?
R: ok and do you understand if someone was addicted to alcohol and drugs?
A: oh yeah, d'you know um thingy
B: I'd be drinking beer all day, oh I love my beer
C: they'd get drunk every day
D: they fall over
E: they get ill
D: they fall over in the pub

_Years 3 & 4:_
R: ok, right, do you know what depression means?
A: yeah, I know, like say somebody dies like or like you just bought like a new top and you spilt blackcurrant all over it you be like depressed like coz you sent all that money on that
B: or strawberry juice
C: miss, I've got a Yorkshire terrier and he done his business on my cousin Clair's top
R: and that would make her depressed would it if he did that?
C: yes, she went really mad at it
R: ok, so do you know what schizophrenia means?
(collective no)
R: ok, and what about Alzheimer's disease?
A: I've heard of Legionnaire's disease, that's something to do with my granny
R: do you know what an eating disorder is?
A: er......when you like get like so worried you stop eating and waste away
R: ok, and what about an addiction to alcohol and drugs?
A: oh, that means that you're an alcohol
B: alcoholic
A: alcoholic and you keep drinking
C: normally when you're an alcoholic it cause you to have a hangover the next day
R: ok and what about problems with anxiety, do you know what that means?
A: I've heard of it but I don't know what it means

_Years 5 & 6:_
R: right then, if I said to you depression, do you know what that means?
A: yeah, they're down
B: they feel like depressed
C: it means like you’re stressed
R: ok
D: and you give up
R: ok, so what about schizophrenia, do you know what that is?
(collective no)
R: ok, and what about Alzheimer’s disease?
A: um, that’s when you forget about things
B: my next door neighbour’s got that coz he’s about, coz he um had an operation and
um he lost his memory
R: how old is he?
B: he’s about 78
C: when they get old they could get it
R: when they get old, ok, and do you know what an eating disorder is?
A: its when they can’t eat
B: its when they can’t eat a certain stuff
C: anorexia
R: anorexia yeah
D: or it could be like hypo, you could go hypo if you eat something like really sugary
or something
R: ok, and what about an addiction to alcohol and drugs?
A: like you can’t stop
B: you can’t keep away from it
C: if you started smoking you couldn’t stop, like my dad, he started when he was 7
and he’s now 40, he’s addicted
R: and what about problems with anxiety, do you know what those are?
A: I’ve heard of it
B: what is it?
R: If someone has problems with anxiety they might have something that is called
obsessive-compulsive disorder or they might have a panic disorder, have you heard
of those before? No……
1.5.5 Children’s responses to the vignettes – depression, anorexia nervosa and obsessive-compulsive disorder

1.5.5.1 Depression

**Years 1 & 2:**
R: ok this is the first person, and this person feels sad all of the time and doesn't like to do the things that they usually like to do anymore. They feel as if they have no energy and feel tired most of the time. In general they think badly of themselves and feel that they aren't worth anything and blame themselves when things go wrong. They also find it hard to sleep. So what do you think will happen to this person?

A: well she might feel a bit sad coz anything could have happened
R: ok
B: is it a baby?
R: no (silence) ok, do you know what made this person feel like this?
A: um, is it somebody's been unkind
R: ok, how long do you think it will take this person to get better?
A: um, about a week?
B: I'd say about one hour
R: ok, do you think they can get better?
A: yeah (others agree)
B: I think they can, yeah
R: they can ok

**Years 3 & 4:**
R: this person feels sad all of the time and doesn't like to do the things that they usually like to do anymore. They feel as if they have no energy and feel tired most of the time. In general they think badly of themselves and feel that they aren't worth anything and blame themselves when things go wrong. They also find it hard to sleep. Ok? So what do you think will happen to this person?
A: will probably die
R: you think they’ll die
B: die
R: you think they’ll die as well
R: ok, why do you think this person’s like this, what made them be like this?
A: from bullying?
R: from bullying
B: people being horrible
C: probably his parents has died
R: and that’s what’s made him like this, ok, do you think this person can get better?
A: yes
B: yeah
C: probably, yeah, mmm
R: but you think that they can’t do it on their own, that they need some help to get better?
C: I think that they need to go to school again
D: probably they don’t know anything and they’re just sad, or they just lost somethink
E: I think they’ve lost their mind

*Years 5 & 6:*

R: this person feels sad all of the time and doesn’t like to do the things that they usually like to do anymore. They feel as if they have no energy and feel tired most of the time. In general they think badly of themselves and feel that they aren’t worth anything and blame themselves when things go wrong. They also find it hard to sleep. Ok, so what do you think will happen to this person?
A: it sounds like they’re gonna do something serious like deliberately injure themselves
R: they might hurt themselves, yep
B: or they might just get over it, or like somebody might like just do some like therapy sort of stuff and help them and they might just be fine
C: and like he could do like anything to hurt himself or do anything really bad
R: something bad
D: he might just wanna get himself into trouble, or like go rob somethink or somehow
R: yeah, ok, so why do you think this person’s like this, what made them like this?
A: bullying
R: bullying
B: parents picking on them
R: problems with their mum and dad
C: if they’re an adult, problems at work maybe
D: no friends
R: no friends
E: their behaviour, they might do something and their friends might get them into trouble and they always get the blame
F: teachers might pick on them
R: right ok, and how long do you think it will take this person to get better?
A: about a year
R: a year
B: around about that
C: it might affect them for their whole life
R: ok, so do you think they can get better?
A: yeah
B: its possible
A: coz like scientists now, they do everythink to cure everythink now more or less
C: they might need some therapy
R: and you think they might need some therapy
C: some kind of professional help

1.5.5.2 Anorexia Nervosa

Years 1 & 2:
R: this next person has lost a lot of weight and because of this their life is now in danger. They are frightened of putting on weight and even though they are very thin,
they still say that they are fat and need to lose more weight. So what do you think will happen to this person?

A: um, will they die again because when you’ve lost a lot of weight and you need to lose more weight and you think you’re still fat, you can die
B: yeah, sometimes you can die
C: you might have a heart attack if you’re too fat
R: you might have a heart attack if you’re too fat? You can do can’t you? So, what made this person like this then?
A: they didn’t eat
R: they didn’t eat, yep
A: and they’re very old
R: they’re very old, ok, and how long do you think it will take this person to get better?
A: um, about 2 weeks
R: 2 weeks
B: bout ¼ of an hour
R: ¼ of an hour, ok, do you think they can get better?
A: yes (all agree)
R: can they get better on their own, or do they need help?
A: they need a doctor
B: they need help

Years 3 & 4:
R: ok, well, here’s another person. This person has lost a lot of weight and because of this their life is now in danger. They are frightened of putting on weight and even though they are very thin, they still say that they are fat and need to lose more weight.
A: I know this
R: what do you think will happen to this person?
A: well, she’s thin and actually people are bullying
B: sometimes if you like 14 and you weigh 5 stone you can die
R: yep
C: I think she used to be fat and then she wanted to lose weight because of bullying and she going to um die because of anorexic
R: what made this person be like this?
A: I think its because like other people don’t like her
R: ok
B: probably because she couldn’t fit in the car
C: coz she used to be fat and people bullied her
R: right ok
D: coz if she got locked out of her house she couldn’t get through a window like some people can
R: ok, do you think this person can get better?
A: yeah
B: yes, if she eats lots of stuff
C: yes, she needs a diet
D: you can get these diet magazines
R: to help her put on weight
D: yeah
R: so you think that to get better she needs some help from someone else?
A: yeah, or just to give her some support
B: or company
C: to encourage her

Years 5 & 6:
R: this person has lost a lot of weight and because of this their life is now in danger. They are frightened of putting on weight and even though they are very thin, they still say that they are fat and need to lose more weight. So what do you think will happen to this person?
A: they might die
B: they will do some serious damage to themselves
C: I mean if the think there too fat they could keep taking whatever made ‘em get like this
D: I was watching this film um... there was um... a gymnastic on it and um... she ate a cream cake and she just could not forgive herself and she stopped eating and um... in the end... she um... passed out

R: she passed out

D: yeah she was really skinny

E: I saw a programme once, she was like this champion swimmer and she was in the middle of a pool and she just like passed out because she had not been eating at all so she just like passed out in the middle of a pool

F: coz they go, coz you go really weak when your like poorly and like your mum and dad won’t let you eat anything and......

R: ok, so what do you think made this person go like this?

A: somebody put in somethink in their food or

B: something they’ve seen on television or something that would make them want to be like that so they want to change themselves

C: maybe like people saying that they used to be fat

B: Geri Haliwell’s lost quite a lot of weight

D: or like bullying maybe, like calling them really big or something

R: someone’s picked on them and called them fat, ok

E: someone’s given the impression that they’re fat and they don’t like it and they’ve gone over the top

R: so how long do you think it’ll take this person to get better?

A: about

B: a very long time

A: yeah

C: if they don’t get any support then they’ll never recover

D: it depends if they see more on TV

E: I don’t recon it’ll take that long as long as they just start eating a bit more

D: yeah, they have to realise

C: they might have to go to the hospital and then the hospital will more or less make them eat it

B: intravenous

R: yes, they do, so you think they can get better but they need help
(all agree)

1.5.5.3 Obsessive-compulsive Disorder

Years 1 & 2:
R: this person keeps on having thoughts about there being germs everywhere. They think that germs are on everything that they touch and so they keep on washing their hands to get rid of the germs. If they can’t wash their hands then they get very upset because they think that the germs will make them get ill and they will die. They seem to spend almost all of their time washing their hands. So what do you think will happen to this person?
A: um
B: I think that this person won’t die and if it touches anything else that’s just been you know
C: I know……
B: mouth in it and then they just put it back down like on the table then they’ll like get worms out of their fingers or something
R: they’ll get worms out of their fingers? Ok, what do you think?
C: I think if they put it back on the table the table will get germs and they’ll have to wash it
R: ok, and what do you think made this person like this?
A: is it that they’re scared?
R: they’re scared
A: of germs
B: they might be scared because um, well maybe when, if they’re ill and not feeling very well, um, most people that are not very well now will go up the hospital, the doctors know what they’re doing
R: ok, do you think this person can get better?
A: yeah
R: and how will they get better? Can they get better on their own?
A: yeah
B: nope
C: I think so
R: they need some help do they?
(all agree)
R: who will they get help from?
A: doctors
B: hospitals
C: my mum's a nurse

*Years 3 & 4:*

R: right this is a different person. This person keeps on having thoughts about there being germs everywhere. They think that germs are on everything that they touch and so they keep on washing their hands to get rid of the germs. If they can't wash their hands then they get very upset because they think that the germs will make them get ill and they will die. They seem to spend almost all of their time washing their hands. So what do you think will happen to this person?
A: well, there someone called a programme called w-dig(?) and he thinks, and he has to label everything and he has to clean every day and he's a bit mad
B: it can be like a disease or something
R: ok
C: I think he don't need to wash his hands everywhere, but he needs to wash his hands every time when he gets home on is own from work and before he eats his lunch
D: you only have to wash it before you eat or like if you've been playing football and you fall over and get mud all over your hands
E: you have to wash your hands when you've been to the toilet
R: exactly you do don't you
F: but you do need some germs so he will need quite a lot of help
D: some germs are airborne, like foot and mouth is airbourne
B: Like if you got a hamster, like I've been bit by my hamster before, but he's died now and I've got another one, and like um, if you get, they can breath on ya and you’ve got germs
R: ok, and what made this person be like this?
A: probably coz they might have been like in like a family who want to be really really clean
B: he might have caught it from somewhere
R: and how long will it take for this person to get better?
A: about a week
B: a couple of weeks
C: a few weeks about
R: do you think they can get better?
A: yeah
R: can they do it on their own or do they need some help?
A: no, they need some help
B: they need help from the hospital probably
C: they need to learn
D: from somebody like a physiotherapist of something just to help them

Years 5 & 6:
R: this person keeps on having thoughts about there being germs everywhere. They think that germs are on everything that they touch and so they keep on washing their hands to get rid of the germs. If they can't wash their hands then they get very upset because they think that the germs will make them get ill and they will die. They seem to spend almost all of their time washing their hands. Ok, so what do you think will happen to this person?
A: I seen that on Casualty and he ended up putting his hand through the window
B: I recon somebody who usually worries about stuff too much or the little things because that.....coz even if you did get germs it could give you like a disease that might kill you but its not gonna kill you on your own
R: ok, so you think they worry about things too much
C: yeah, they're over reacting
D: I think they've just got like, its like an obsession, they're like obsessed, its ok washing your hands once in a while but continuously......
R: its too much
E: its good to know that like someone cares about something so much like but I recon something like adverts prevent it because like there was once this advert that was all covered in dust sheets and......
R: so you think its too much basically
F: yeah, they’re over exaggerating
R: ok, so why do you think they are like that then? What made them be like this?
A: they probably heard something, they’ve watched something or heard something to tell them that this whole world is absolutely filthy
B: something’s happened in the past
C: or maybe one of her relations has died from a bad disease cause by germs
D: maybe the doctor did tell them to wash their hands but they’ve probably taken it too seriously
R: they’ve taken it too far, ok, so how long do you think it’ll take for this person to get better?
A: I recon its just like habit more or less, so it’ll take about
B: its like biting your nails or something
C: quite a few months
D: they’ll need to go cold turkey
R: ok, so do you think they can get better?
A: yeah (all agree)
R: do they need some help?
A: I recon they could do it on their own
B: I think you’ll need to keep an eye on them if they’re trying to stop
A: yeah
C: like stay with them to make sure they don’t wash their hands
APPENDIX 2

Chapter 4 (Study 2)

2.1 Letter sent to parents where a Head Teacher deemed parental consent necessary

THIS LETTER IS SENT HOME WITH THE APPROVAL OF THE HEAD TEACHER, ..................... (insert name of school)

Date

Dear Parent,

I am a PhD student at the University of Surrey. At present, I am conducting a study about children’s knowledge and understanding of different types of illnesses. I am particularly interested in what children know about (insert e.g. causes and consequences depending on study) of different types of illness, for example (insert name of illness depending on study). The study itself will take the form of an informal interview where children will be read a short paragraph and shown cards with various answers, which they can accept or reject in relation to these different illnesses. Any answers that the children give will be confidential and the children themselves will remain anonymous.

The study is supervised by two lecturers at the University of Surrey, who have given their full support, as well as being approved by the Head Teacher ..................

I would be very grateful for input on this from your child. Please fill in the slip below and return it to your child’s teacher.

Thank you for your assistance.

Claudie Fox

[Signature]

---------------------------

Child’s Name ........................................................................................................

I do / do not give consent for my child to take part in the above study.

Signed ................................................................. Parent / Guardian
2.2 Semi-structured Interview Schedule for Study 2

2.2.1 Introduction

- Shuffle cards to obtain random order of mental illness diagnosis and choice cards.
- Inform child of procedure – will read some descriptions/stories about some people who have different sorts of mental illness and then ask them some questions about the people in the stories and use some cards to find the answers.
- Inform child that there might be more than one answer for the questions and that there is no right or wrong answer, that you just want to know what they think, so to choose whichever cards they feel are right.
- Inform child that no one will know who they are from their answers – only the experimenter.

2.2.2 Introductory Questions

1. Do you know someone who has had:
   - Depression
   - Schizophrenia
   - Anorexia Nervosa
   - Dementia

2. Has anyone told you about:
   - Depression
   - Schizophrenia
   - Anorexia Nervosa
   - Dementia

3. If so, who told you about it?
2.2.3 Read Vignette

*Use the names Jane, Sarah, Ann and Mary randomly.

**Depression:**
This is about a woman called* ....... She has got Depression. This means that she feels sad all of the time and doesn’t like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn’t worth anything and blames herself when things go wrong. She also finds it hard to sleep.

**Schizophrenia:**
This is about a woman called* ....... She has got Schizophrenia. This means that she jumbles her words and sometimes doesn’t make sense. She believes things that aren’t really true and hears voices that aren’t really there. These are called delusions and hallucinations. She finds it hard to look after herself on her own, and has to be told to wash, brush her teeth and comb her hair. She isn’t interested in doing things that she used to like doing anymore.

**Anorexia Nervosa:**
This is about a woman called* ....... She has got Anorexia Nervosa. This means that she has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

**Dementia (Alzheimer’s Type):**
This is about a woman called* ....... She has got Dementia. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn’t recognise her family anymore and needs to be looked after all the time.
2.2.4 Questions

N.B. random order presentation of causes, consequences, timeline/curability for each child.

Cause: How did this person get ......... (depression, schizophrenia, anorexia nervosa, or dementia)?

- She banged her head
- She took drugs
- She drank too much alcohol
- Someone she was close to has died
- Something happened to her in the past
- She was born like it
- She was being bullied
- She has brain damage

- She had an accident
- She caught it from someone
- She worries too much about things
- She doesn’t eat properly
- She saw something on television
- She has no friends
- Someone in her family is like it
- She ate too many sweets

Consequence: What will happen to this person because they have ......... (depression, schizophrenia, anorexia nervosa, or dementia)?

- She will go to a mental hospital
- She will knock things over
- She will do silly things
- She will draw on the wall
- She will die
- She will see a doctor
- She will have therapy
- She will have to take some tablets

- She will have to go to hospital
- She will stay in bed
- She will lose her friends
- She will need help and support from her relatives
- She will see a psychiatrist
- She will go to hospital and have surgery
- She will go shopping

Timeline/Curability: How long do you think it will take this person to get better?

- 1 day
- 1 week
- 2 weeks
- 1 month
- 6 months
- 1 year
- Never
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<tr>
<th>Child’s Name:</th>
<th>Subject No:</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Name:</td>
<td>Date of Birth:</td>
</tr>
<tr>
<td>Class:</td>
<td>Gender:</td>
</tr>
</tbody>
</table>

**Order:**
- Depression
- Schizophrenia
- Anorexia Nervosa
- Dementia

**Introductory Questions**

Do you know someone who has had:
- Depression
- Schizophrenia
- Anorexia Nervosa
- Dementia

Has anyone told you about:
- Depression
- Schizophrenia
- Anorexia Nervosa
- Dementia

**Read Vignette**

**Timeline/Curability**

How long will it take ...... to get better? (initial: Dp, Sz, An, Dm)

<table>
<thead>
<tr>
<th>1 day</th>
<th>1 week</th>
<th>2 weeks</th>
<th>1 month</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 months</td>
<td>1 year</td>
<td>Never</td>
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### Causes

<table>
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<th>How did ..... get .....? (record card numbers)</th>
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<tbody>
<tr>
<td>Depression</td>
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<tr>
<td>Anorexia Nervosa</td>
</tr>
</tbody>
</table>

### Consequences

<table>
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<th>What will happen to .....? (record card numbers)</th>
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<tbody>
<tr>
<td>Depression</td>
</tr>
<tr>
<td>Anorexia Nervosa</td>
</tr>
</tbody>
</table>
APPENDIX 3

Chapter 5 (Study 3)

3.1 Semi-structured Interview Schedule for Study 3

3.1.1 Introduction

- Shuffle cards to obtain random order of mental and physical illness diagnosis and choice cards.
- Inform child of procedure – will read some descriptions/stories about some people who have different sorts of illness and then ask them some questions about the people in the stories and use some cards to find the answers.
- Inform child that there might me more than one answer for the questions and that there is no right or wrong answer, that you just want to know what they think, so to choose whichever cards they feel are right.
- Inform child that no one will know who they are from their answers – only the experimenter.

3.1.2 Read Vignette

*Use the names Jane, Sarah, Ann, Mary, Susan and Rachel randomly.

Depression:

This is about a woman called* …… She has got Depression. This means that she feels sad all of the time and doesn’t like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn’t worth anything and blames herself when things go wrong. She also finds it hard to sleep.
*Anorexia Nervosa:
This is about a woman called* ...... She has got Anorexia Nervosa. This means that she has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

*Dementia (Alzheimer’s Type):*
This is about a woman called* ...... She has got Dementia. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn’t recognise her family anymore and needs to be looked after all the time.

*Chicken Pox:*
This is about a woman called* ...... She has got Chicken Pox. This means that she doesn’t feel very well and isn’t very hungry. She is covered in a rash of red spots that have got crusts that will drop off. The rash is very itchy so she has to try not to scratch the spots.

*Broken Arm:*
This is about a woman called* ...... She has broken her arm. This means that her arm is swollen and bruised and it really hurts when she tries to wiggle her fingers.

*Common cold:*
This is about a woman called* ...... She has got a Cold. This means that she has a runny nose, a headache and a sore throat. She feels chilly but she has a temperature and she has a cough.
3.1.3 Questions

Cause: How did this person get .......... (depression, anorexia nervosa, dementia, cold, chicken pox, or a broken arm)?

She caught it from someone
She ate something bad
She was nasty to her friend
Its to do with how she thinks and feels
Something is wrong with her brain
She fell off her bike

Consequence: What will happen to this person because they have .......... (depression, anorexia nervosa, dementia, cold, chicken pox, or a broken arm)?

She will need to see a doctor
She will have an operation
She will have therapy
She will need help and support from her relatives
She will always have to be nice to her friend in the future
She will have to stay at home

Repeat for each of the mental and physical illnesses.
### RECORD SHEET - STUDY 3

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<th>Subject No:</th>
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<td>Date of Birth:</td>
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<tr>
<td>Class:</td>
<td>Gender:</td>
</tr>
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</table>

#### Order:
- Depression
- Anorexia Nervosa
- Dementia
- Chicken Pox
- Broken Arm
- Cold

#### Read Vignette

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<thead>
<tr>
<th>Illness</th>
<th>Cause</th>
<th>Consequence</th>
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<tbody>
<tr>
<td>Depression</td>
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<td>Broken Arm</td>
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<tr>
<td>Common Cold</td>
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</tbody>
</table>
APPENDIX 4

Chapter 6 (Study 4)

4.1 Semi-structured Interview Schedule for Study 4

4.1.1 Introduction

- Shuffle cards to obtain random order of mental and physical illness diagnosis and choice cards.
- Inform child of procedure – will read some descriptions/stories about some people who have different sorts of illness and then ask them some questions about the people in the stories and use some cards to find the answers.
- Inform child that there might be more than one answer for the questions and that there is no right or wrong answer, that you just want to know what they think, so to choose whichever cards they feel are right.
- Inform child that no one will know who they are from their answers – only the experimenter.

4.1.2 British Picture Vocabulary Scale

If administering BPVS at start, administer the test now.

4.1.3 Read Vignette

*Use the names Jane, Sarah, Ann, Mary, Susan and Rachel randomly.

Depression:

This is about a woman called* ...... She has got Depression. This means that she feels sad all of the time and doesn’t like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn’t worth anything and blames herself when things go wrong. She also finds it hard to sleep.
Anorexia Nervosa:
This is about a woman called* ...... She has got Anorexia Nervosa. This means that she has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

Dementia (Alzheimer’s Type):
This is about a woman called* ...... She has got Dementia. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn’t recognise her family anymore and needs to be looked after all the time.

Chicken Pox:
This is about a woman called* ...... She has got Chicken Pox. This means that she doesn’t feel very well and isn’t very hungry. She is covered in a rash of red spots that have got crusts that will drop off. The rash is very itchy so she has to try not to scratch the spots.

Broken Arm:
This is about a woman called* ...... She has broken her arm. This means that her arm is swollen and bruised and it really hurts when she tries to wiggle her fingers.

Asthma:
This is about a woman called* ...... She has got asthma. She has had asthma all her life. This means that sometimes her chest feels tight and she gets wheezy. When this happens she finds it hard to breathe and she coughs a lot.
4.1.4 Questions

Consequences: *What will happen to this person because they have .......... (depression, anorexia nervosa, dementia, chicken pox, broken arm, asthma)?*

- She will need to see a doctor
- She will need to have therapy (she will need to see a psychiatrist to talk about her problems)
- She will need to stay at home
- She will need help and support from her friends and family

Curability: *Do you think this person with .......... (depression, anorexia nervosa, dementia, chicken pox, broken arm, asthma) can get better?*

- Yes
- No

If child responds ‘yes’, ask:

Timeline: *How long do you think it will take the person with .......... (depression, anorexia nervosa dementia, chicken pox, broken arm, asthma) will get better?*

- Less than 1 month
- 1 month to 6 months
- 6 months to 1 year
- More than 1 year

Repeat for each of the mental and physical illnesses.

4.1.5 British Picture Vocabulary Scale

If administering BPVS at end, administer the test now.
## 4.2 Recording Sheet

<table>
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<tr>
<th>RECORD SHEET – STUDY 4</th>
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</thead>
<tbody>
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<td><strong>School Name:</strong></td>
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<td><strong>Class:</strong></td>
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**Order:**
- Depression
- Anorexia Nervosa
- Dementia
- Chicken Pox
- Broken Arm
- Asthma

<table>
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<th>Consequence</th>
<th>Curability</th>
<th>Timeline</th>
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<td>Depression</td>
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<td>[ ] Less than 1 month</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] 1 month to 6 months</td>
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<tr>
<td></td>
<td></td>
<td>[ ] 6 months to 1 year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[ ] More than 1 year</td>
</tr>
</tbody>
</table>

| Anorexia Nervosa  | 1 2 3 4    | [ ] Less than 1 month             |
|                   |            | [ ] 1 month to 6 months           |
|                   |            | [ ] 6 months to 1 year            |
|                   |            | [ ] More than 1 year              |

<p>| Dementia          | 1 2 3 4    | [ ] Less than 1 month             |
|                   |            | [ ] 1 month to 6 months           |
|                   |            | [ ] 6 months to 1 year            |
|                   |            | [ ] More than 1 year              |</p>
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</tr>
</thead>
<tbody>
<tr>
<td>Chicken Pox</td>
<td>1 2 3 4 y n</td>
<td>Less than 1 month, 1 month to 6 months, 6 months to 1 year, More than 1 year</td>
</tr>
<tr>
<td>Broken Arm</td>
<td>1 2 3 4 y n</td>
<td>Less than 1 month, 1 month to 6 months, 6 months to 1 year, More than 1 year</td>
</tr>
<tr>
<td>Asthma</td>
<td>1 2 3 4 y n</td>
<td>Less than 1 month, 1 month to 6 months, 6 months to 1 year, More than 1 year</td>
</tr>
</tbody>
</table>
5.1 Interview Schedule for Study 5

5.1.1 Introduction

- Shuffle cards to obtain random order of mental illness diagnosis and describing cards.
- Inform child of procedure – will read some descriptions/stories about some people who have different sorts of illness and then ask them some questions about the people in the stories and use some cards to find the answers.
- Inform child that there might be more than one answer for the questions and that there is no right or wrong answer, that you just want to know what they think, so to choose whichever cards they feel are right.
- Inform child that no one will know who they are from their answers – only the experimenter.

5.1.2 Read Vignette

*N.B. Choose the names Jane, Sarah and Ann at random

Depression:
This is about a woman called* …… She has got Depression. Her depression is caused by how she thinks and feels. Depression means that she feels sad all of the time and doesn’t like to do the things that she usually does anymore. She feels as if she has no energy and feels tired most of the time. In general she thinks badly of herself and feels that she isn’t worth anything and blames herself when things go wrong. She also finds it hard to sleep.
Anorexia Nervosa:
This is about a woman called* ...... She has got anorexia nervosa. Her anorexia is caused by how she thinks and feels. She has lost a lot of weight and because of this her life is now in danger. She is frightened of putting on weight and even though she is very thin, she still says that she is fat and needs to lose more weight.

Dementia (Alzheimer's Type):
This is about a woman called* ...... She has got dementia. She has dementia because there is something wrong with her brain. This means that she finds it hard to remember things and to learn new information. She finds it hard to get herself washed and dressed in the morning and also needs help to eat, so someone has to feed her. She doesn’t recognise her family anymore and needs to be looked after all the time.

5.1.3 Questions
Social distance: Would you like it if the person with ........(depression, anorexia nervosa, or dementia) ........
Lived in the same country
Lived in the same town
Lived in the same road/street
Lived in the house next door

Social functioning: How likely do you think it is that the person with ........
(depression, anorexia nervosa, or dementia) will ........

Get a job
Go to the supermarket
Drive a car
Go on holiday
Make friends
Get married

Hurt themselves
Become a burglar
Attack someone in the street
Be nasty to their friends and family
Act stupid
Act out of control
Describing words: I would like you to choose which of these words describes the person with........ (depression, anorexia nervosa, or dementia).

Clean
Clever
Hardworking
Good
Friendly
Normal
Nice
Not scary
Not violent

Dirty
Stupid
Lazy
Bad
Unfriendly
Weird
Nasty
Scary
Violent

Affect: Do you like or dislike the person with........ (depression, anorexia nervosa, or dementia)?

Dislike a lot
Dislike a little
Neither like nor dislike
Like a little
Like a lot

Empathy: Do you feel sorry for the person with........ (depression, anorexia nervosa, or dementia)?

Not at all sorry
A little bit sorry
Quite sorry
Very sorry

Repeat for each mental illness diagnosis.
## 5.2 Recording Sheet

### SOCIAL DISTANCE

<table>
<thead>
<tr>
<th></th>
<th>Dislike it a lot</th>
<th>Dislike it a little</th>
<th>Neither</th>
<th>Like it a little</th>
<th>Like it a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lived in the same country</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Lived in the same town</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Lived in the same street/road</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Lived in the house next door</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

### SOCIAL FUNCTIONING

<table>
<thead>
<tr>
<th></th>
<th>Not at all likely</th>
<th>A little bit likely</th>
<th>Quite likely</th>
<th>Very likely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be able to get a job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Be able to go to the supermarket</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Be able to drive a car</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Be able to go on holiday</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Make friends</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Get married</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Hurt themselves</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Become a burglar</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Attack someone in the street</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Be nasty to their friends/family</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Act stupid</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Act out of control</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>DESCRIBING WORDS</td>
<td>Choose</td>
<td>Choose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
<td>--------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clean</td>
<td>Dirty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clever</td>
<td>Stupid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardworking</td>
<td>Lazy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>Bad</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Friendly</td>
<td>Unfriendly</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>Weird</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nice</td>
<td>Nasty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not scary</td>
<td>Scary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not violent</td>
<td>Violent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AFFECT</th>
<th>Dislike a lot</th>
<th>Dislike a little</th>
<th>Neither</th>
<th>Like a little</th>
<th>Like a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EMPATHY</th>
<th>Not at all sorry</th>
<th>A little bit sorry</th>
<th>Quite sorry</th>
<th>Very sorry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>