A PORTFOLIO OF STUDY, PRACTICE AND RESEARCH

Submitted by Helen Nightingale

for the Doctorate of Psychology (PsychD)

in Clinical Psychology

CONVERSION PROGRAMME

March 1995 - Surrey University
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PROFESSIONAL AUDIT

Psych D in Clinical Psychology: Conversion Programme

PERSONAL STUDY PROGRAMME

Name: Helen Nightingale
Date of Registration: 25.4.94

1.0 BACKGROUND TO DEVELOPING PERSONAL STUDY PROGRAMME

1.1 Following fifteen years of clinical work in the NHS and more recently a number of years working overseas, the author recognises the need for professional update and further development of her knowledge and skills, especially having been exposed to American professional review systems introduced by the American Psychological Association. Since completing an MSc in occupational psychology in 1988, she has realised even more the need for continuing professional development. The author has continued to work in the clinical field but recognises the limitations of a clinical training completed in 1978 with respect not only to health psychology and in particular to women’s issues, but also in a more general way; she wishes to review and update her knowledge of neuropsychology, and other applied areas of work. These needs are also recognised in the context of the restructuring of the NHS into Trusts, a process which has forced many heads of specialist services to generalise their work in order to meet the specification of contracts. This has occurred especially in the primary care sector, i.e. G.P. practices.

1.2 Having specialised in learning disability and later in forensic psychology, there are identified areas which the author wishes to update, and which will be reflected in the critical reviews. With respect to clinical audit, the opportunity has arisen to work in the area of stroke rehabilitation, and apply both clinical and occupational psychology knowledge in preparation of a bid for a new service in West London. Finally, to improve research experience the subject area of patient satisfaction is to be examined, as it is a legitimate and well researched area in psychology.
OVERALL AIMS AND OBJECTIVES

2.0

This will encompass professional development and update of knowledge in specific areas, in particular health psychology, with a view to developing specialist clinical interest in women's needs. In addition the author desires an update in neuropsychology and this will be met by one of the critical reviews. The opportunity to improve research skills by learning new methods and techniques which have been developed since the original Clinical MSc may include SPSSx for lap-top SPSS PC, and the use of a CD Rom for literature reviews.

2.2

To apply this knowledge to support the scientific-practioner model of applied psychology and to review the status of cognitive behavioural models.

ACADEMIC

3.0

Aims

To improve the knowledge base of applications of clinical treatments and to review current and proposed models of intervention.

3.2

Objectives

To read and review the literature with a view to incorporating the latest techniques into the treatment of women presenting at psychology out-patients clinics. Additionally, to increase the subject areas of knowledge in order to work more as a generalist in primary care.

3.3

Plan

Full literature reviews on three topics using Psych.lit. on CD Rom and the compilation of recent (1985-1995) references. To review the literature for the presentation of current models and evidence of effective treatments, followed by a summary of the important issues discovered in the readings.
3.4 Academic reviews of following topics:

**Critical Review 1** Neuropsychology: Review the evidence of sex differences in lateralisation of the brain of adults. Specifically, whether there are remaining differences in adulthood between male and female brains which affect cognitions and skills. (MAY 1994) (2-3,000 words)

**Critical Review 2** Review of literature pertaining to premenstrual syndrome, including the issue of whether LLPDD should be included in DSM IV. (JUNE 1994) (2-3,000 words)

**Critical Review 3** A review of the literature on Menopause. (JULY 1994) (2-3,000 words)

4.0 CLINICAL AREAS

4.1 Aims

To apply knowledge of marketing to a clinical service area, and to develop a knowledge base of clinical need in that area.

4.2 Objectives

To present a marketing strategy for a specialised clinical service in order to assist a Provider to prepare for Purchaser contracts.

4.3 Rationale

An NHS Provider service has requested assistance to prepare a strategy for a stroke rehabilitation service, and as this is a clinical area of neuropsychology, it is sufficient to meet the criteria of professional development. Stroke is the third most important identified target for prevention and treatment in Health of the Nation 2000 and
therefore knowledge of clinical needs of this population is important and requires the skills of a scientific practitioner to assist in the development of service specifications for this service.

4.4 Plan

(AUGUST/ SEPTEMBER 1994) (10,000 words)

A marketing plan is to be developed for the Trust to enable it to compete in the open market (with the private sector), based on a strategy of service delivery for rehabilitation services. Two documents are to be produced. Firstly, the actual marketing strategy which is a blueprint for clinical services, and secondly, the application of the marketing strategy for the 'State of the Art' service in question. A full literature review of stroke rehabilitation service will also be compiled.

5.0 RESEARCH

5.1 Aims.

This research project will focus on quality issues (if possible, with particular reference to women's services) in the Provider/Purchaser contract. The research will apply scientific criteria and procedures to an evaluation process which is now a necessary facet of all contracts between providers and purchasers. It is likely that the evaluation will address quality or outcome of service delivery.

5.2 Objectives:

The area of focus will be one of the following:

- Consumer satisfaction surveys
- Total Quality Management
- Clinical Audit and Quality standards.
- Quantification of qualitative measures for delivery of services.

(SEPTEMBER-FEBRUARY 1994) (20,000 words)
6.0 PORTFOLIO OUTLINE

The portfolio will develop clinical areas in the field of work which are of personal interest and meet the criteria of professional development of the author, e.g. neurology, stroke rehabilitation, women's health, patient satisfaction (predicting and affecting factors).

7.0 ATTENDANCE AT TRAINING EVENTS

7.1 All lectures offered by the course (D.Psych).

7.2 Attendance on BPS course 'Becoming a Consultant'.

7.3 Meeting other psychologists including Peter Wilcox from the DCP (update on clinical quality issues)

7.4 Attendance at stroke seminars and planning workshops.

7.5 Attendance at seminar on SPSS.

7.6 Attendance at Birkbeck Professional Update - one day seminar for occupational psychologists.

Helen Nightingale

May 12th 1994.
ADDENDUM: Following the completion of the course, the following comments (referenced to the Personal Study Programme) are applicable.

Para 1.2 This was both a challenge and a learning experience. Learning the SPSS package for Windows and using this on a portable computer at home is a far cry from the manual completion of analysis of co-variance for research purposes for the MSc in 1978. Both the review of the literature and the data analysis were a learning and positive experience.

Para 4.2 It was initially hoped to develop a marketing strategy for a women's service. However, demand of the providers overrode personal need in this instance. Nevertheless, the topic of stroke rehabilitation supported the development and update of neuropsychology needs.

Para 6.0 The author’s initial wish to focus particularly on women’s related issues was attempted but not achievable in all aspects of the portfolio and in particular the research, where the providers selected the area of evaluation to be orthopaedic services as an alternative to gynaecological services.

Para 7.1 In particular, lectures by Evanthia Lyons on ‘Statistical Methods’ were very helpful and Mary Boyle on ‘Concept Construction and Diagnosis’ was very enlightening and clarifying. ‘Clinical Audit and Marketing’ was also helpful.

Many new skills were learnt during the carrying out of the portfolio, which included:

- Using a CD Rom for literature reviews
- Using SPSSx for windows for analysis of data
- Negotiations with Chief Executives for consultancy work
- Meetings with Purchasers to assist with service specifications
- Improvements in scientific-practitioner skills
- Improved understanding of failures in the literature of empirical research to answer hypotheses.

Reviewed February 1995. ---oooOooo---

H. Nightingale
Section I:
Professional Audit
SECTION TWO: Academic Audit

Critical Review One: A Review of the Research into Sex Differences in the Brains of Adults

Critical Review Two: A Review of the Literature of Premenstrual Syndrome and in Particular Late Luteal Phase Dysphoric Disorder as a Classification in DSM III R.

Critical Review Three: Is the Menopause a Syndrome?
A CRITICAL REVIEW OF THE RESEARCH INTO SEX DIFFERENCES IN THE BRAINS OF ADULTS

Submitted by Helen Nightingale

for the Doctor of Psychology (PsychD)

in Clinical Psychology

March 1995 - Surrey University
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A REVIEW OF THE RESEARCH INTO SEX DIFFERENCES
IN THE BRAINS OF ADULTS

1. INTRODUCTION

One of the most important questions asked in psychology relates to the relative contribution of heredity versus environment, to human development. This issue is raised within neuropsychology regarding sex differences in cognition and cognitive style. The question is whether there are real sex differences in the organic structure and functioning of the brain and whether there are significant effects of these on cognition and behaviour.

This essay reviews the evidence gained through studying the relationship of brain structure and its functions, and investigates whether the identified differences in female and male structures of the brain have any effect on the different functions.

It may be helpful to review some common terms from the literature.

Lateralisation is the division of functions between the left and right hemispheres as well as the restriction of information to one hemisphere; for example, in right handed people the left hemisphere is known to have priority for language development and verbal memory. Functionality concerns the way in which basic sensory and motor functions are controlled by very specific regions, while higher mental functions are controlled by a constellation of regions across the brain. Finally, asymmetry is the notion that the two hemispheres of the brain are not identical, either in terms of structure or function.
2. THE DEBATE

McGlone (1980) states that the focus of research should be to clarify whether the structure or function of the human brain may be sexually dimorphic. Several authors have speculated that these sex differences in overall cognitive patterning may be biologically influenced by underlying differences in lateralized brain organisation. (McGee 1979). During the 70s several reviews dealing with the topic of sex differences and functional brain symmetry (Bryden 1979, Fairweather 1976, Buffery and Gray 1972) concluded that early evidence was questionable due to poor methodology and design, and could not have produced reliable conclusions regarding sex differences. Buffery and Gray (1972) posited that the male brain is more symmetrically organised than the female brain for both speech and spatial representation. Harris (1978), McGee (1979) and Witelson (1991) found the converse to be the case, and produced evidence that the adult male brain is more asymmetrically organized than the female brain for verbal and spatial functions. Fairweather (1976), stated there are no convincing sex differences either in cerebral lateralization or in cognitive abilities.

3. THE EVIDENCE

The evidence for the nature and thus the theory of biochemical control comes from a number of areas within neuropsychology and, although progress has occurred, questions posed and answered by Crichton-Browne in 1880 are still relevant. Evidence has been sought from chemical investigations by Lansdell (1963), who injected sodium amytal into one hemisphere, and electrochemical studies of the brain by Tucker(1976). Comparative neuropsychological studies of other animals included canaries and rodents (Diamond, 1975). Others have investigated hormonal control and their influences, Kimura (1993); characteristic responses to brain injury, McGlone (1977), and the development of brain function in children, Buffery and Gray (1972).

Many different assessment tools have been developed to investigate cognitive functioning, their source of control and whether there are differences between male and female functioning. These include dichotic listening tests and tachiscopic materials (Bryden 1976) and psychometric tests (Leckliter 1989). The results and conclusions from the research, aimed at identifying hemispheric specialization and sex differences in the cerebral asymmetry, were inconclusive.
The body of empirical evidence in the functional cognitive domain supports male superiority on tasks which require spatial visualization e.g. maze tasks and tasks requiring mechanical skills. Conversely, females show superiority on tasks which require verbal language abilities, tasks of speed of articulation, work fluency, and verbal production. Furthermore, females are less susceptible than males to various types of language related learning disabilities. The evidence that these variations are to some degree inheritable remains positive (McGee 1979).

McGlone (1980) in her review paper reports that, although the basic patterns of functional asymmetry in the male and female brains are rather more similar than different, on balance the evidence derived from the brain-lesion literature and from some research methods (dichotic, and tachistoscopic explorations) show that sexual variation in brain asymmetry is "... a notion that has to be taken seriously ".

4. BRAIN DAMAGED SUBJECTS

One way to examine sexual variation in cerebral asymmetry is to contrast residual verbal skills with residual non-verbal skills after left and right brain damage. Classic reports include Inglis and Lawson (1990) and Kaufman and McLean (1991), who used standardized tests e.g. W.A.I.S. and W.A.I.S.R. and compared differences on the sub-tests.

Men with left temporal lobectomies showed relatively impaired verbal to non-verbal skills, a pattern significantly different from men with right lobectomies, who showed relatively impaired non-verbal to verbal skills. In women there were no significant differences in verbal/non-verbal ratio scores between left and right temporal lobe groups. (All subjects were right handed.)

McGlone (1980) reported substantial differences in the W.A.I.S. verbal-performance patterns observed for males versus females with brain damage in either the left or right hemispheres, and investigators have continued to hypothesise low verbal IQ for patients with lesions in the left cerebral hemispheres and low performance IQ for patients with lesions in the right cerebral hemisphere. McGlone (1980) supported this finding in males but not in females.

The remainder of the reports have been varied in their results.
5. LANGUAGE DYSFUNCTION

It is known that language deficits other than aphasia also manifest sex differences according to which hemisphere has been damaged. Landsell (1963) looked at subjects with left sided lesions and thalamotomies, and suggested greater left hemisphere control of verbal functions in men than in women. However, in subsequent investigations, he suggested this was due to the nature of the verbal task. Constructional praxis became an important factor in later studies looking at overall perceptual tasks and the modality in which they were presented and to which the subjects were responding. Spatial processing may be influenced by both verbal and non-verbal systems.

McGlone (1973) found the incidence of aphasia, after left hemisphere lesion, was found to be at least three times as great in men as women. When aphasics were removed from the group she found only males with left and right sided damage continued to show the expected pattern of depressed verbal intelligence and verbal memory loss. No significant differences in these verbal scores appeared between females with left and right sided brain damage. However, both the female lesion groups were significantly impaired on corrected verbal I.Q. scores relative to non-brain damaged controls. These sex differences were not explicable on the basis of age, education, etiology, length of illness and neurological signs, locus or severity of the lesions, familial sinistrality or generalized intellectual deterioration, thus supporting the hypothesis that functional brain symmetry is less marked in the female than in the male population.

Geschwind (1987) studied the genetics of dyslexia and its frequency among the relatives of dyslexics, and broadened his study to look for the presence of other conditions in these families.

Gerschwind and Galaburda (1985) went on to develop a theory of cerebral lateralisation, proposing that a common factor may be responsible for both left-handedness and susceptibility to immune disorders. This factor would be male related because the incidence of left-handedness and of developmental disorders of language and cognition is higher in males (3:1).
However, similar effects, although less marked, occur in females and therefore the factor must also have the potential for affecting females. They identified the male sex hormone testosterone as meeting the criteria and proposed that testosterone slows the growth parts of the left hemisphere during foetal life, so that corresponding regions on the right develop relatively more rapidly and consequentially males will show a greater degree of shift to right hemisphere participation in handedness and language, and thus will have augmented right hemisphere skills.

The delay in left hemisphere development in some cases may result in a permanent developmental disorder, the incidence of which is also higher in males.

6. ELECTROGRAPHIC INVESTIGATIONS

Electrographic recordings of brain wave activity have been used to investigate hemispheric specialization in normal humans and to detect any male-female differences. Electroencephalographic (EEG) recordings have identified that males and females differ in the amount and direction of such task-related movements. Language stimuli elicit asymmetric electrographic patterns which favour the left hemisphere, whereas non-language stimuli elicit lateralized patterns which favour the right hemisphere. Interpretation of these results, in terms of functional brain asymmetry, depends on the assumption that a difference in level, or in pattern of electrical activity between left and right sides, reflects the extent to which each hemisphere of the brain is actively involved in processing the stimuli.

Cohen (1971) found that language stimuli elicit asymmetric electrographic patterns favouring the right hemisphere. Molfese (1978) looked at evoked potential recordings over the temporal region and found no obvious sex differences in the response of the left hemisphere to verbal stimuli presented auditorially. Both authors noted that inconsistencies in sex effects among the studies may be due to the uses of different types of "verbal" or "non-verbal" tasks to reflect differences in the modality of presentation.

However, it is possible that EEG symmetries, which differ between males and females, may be monitoring asymmetrical cerebral control of movement rather than the cerebral lateralization of verbal and non-verbal function per se.
The fact that the EEG symmetries may be recording movement rather than cerebral lateralisation of skill functions is important to keep in mind when considering the evidence.

This is an important distinction, even if the underlying mechanisms controlling movement and cognitive functions are subserved by the same hemisphere. Davis and Wada (1978) concluded that findings of sex differences in EEG asymmetry may be structure based.

It may be concluded that few of these EEG studies are consistent in their evidence regarding whether one sex may be the more asymmetrically organized than the other.

7. **HORMONES**

The important role of hormones has been identified by Kimura (1988)(1993). Her evidence strongly supports the structural basis for gender differences in the brain. Males, particularly after puberty (when increased testosterone levels appear), surpass females in visuospatial skills. Additionally, women show variances in cognitive tasks and skills according to their menstrual cycles (when the levels of oestrogen are highest).

A number of studies using testosterone have been conducted to investigate the male-female differences in cognitive ability. The most important of these was by Petersen (1976) who found that androgynous male adolescents, who had deficits in testosterone levels, performed better on measures of spatial ability than normal males. It was from this and other studies, that sex-related differences in lateralization were considered biologically based. However it may be that experiential factors are more relevant.

8. **SINISTRALITY**

Levy (1978) found that many left-handers show evidence of some language ability in the right hemisphere in addition to language ability in the left hemisphere, pointing out this must have implications for the visuospatial function, typically controlled by the right hemisphere in the right-hander. She proposed that language and visuospatial function compete for available neural tissues within a hemisphere and that language functions predominate at the expense of others. This results in the "crowding out" of visuospatial centres. Levy proposed that left-handers should do more poorly than right-handers on visuospatial tasks. This was supported
in a set of experiments using the W.A.I.S. Left-handers do appear to have a more bilateral distribution of language function.

The debate as to whether this leads to significantly different or superior abilities has not been resolved by research. For simplicity and improved reliability it was easier to eliminate left-handed subjects in research because they present atypical speech laterization in one third of non-right-handers. Zangwill (1980) stated that these effects are actually very strong and can entirely override whatever sex effects exist.

9. LIMITATIONS OF CLINICAL STUDIES

The studies mentioned so far have made considerable contributions to the knowledge base regarding laterality and sex differences. McGlone (1980) produced a state of the art review of the research and considered that comparisons among the various clinical studies are problematic for a number of reasons. Firstly, many authors have failed to publish the data on which their conclusions were based, thus preventing further evaluations and replications. Secondly, earlier research failed to control and match the male and female subjects because sex differences have only been suspected in the last twenty years.

In the field of the study of laterisation and brain damage there is much to criticise in terms of rigorous methodology; lesion site and size is nearly always unclear and the measurements of the mass damage have not been specified. When patient selection is based on neurological deficits and CNS pathologies, the degree to which the actual area has been damaged must be accurately specified, including actual size and mass measurement. This has seldom been the case.

Variations in pathology often result from systematic variations in the extent and locus of the lesion, the age of the patient and onset of pathology and age at time of testing. All these factors are known to alter performance on psychological tests. Taylor (1976) found that the etiology of temporal lobe lesions interacted with the sex of the subject and the size of the lesion in determining overall intellectual scores.
Some clinical studies have relied heavily on unilateral brain damage i.e. whether the damage is due to lesion, tumour, infarct or stroke is not mentioned. This will further compound the difficulty in replication of the study. Sometimes the research was carried out too soon after the acquisition of the brain damage, and it was limited to the immediate post-operative period, e.g. as in Landell's series of studies (1963).

Wolff (1977) in his critique, reported that a further source of confusion in the experimental and clinical literature is that investigators do not specify the demand characteristics of the behavioural tasks from which lateralization is inferred, or the context to which the assessment is made, but rather they tend to generalise from one verbal or spatial test to all verbal tasks and measures. Additionally, they fail to consider performance differences which might reflect individual variation in processing strategy.

Much of the literature indicates a strong possibility for Type I errors in the publishing of results. There is a bias for publication of research which shows positive correlations, significance of differences between groups for sex differences and asymmetry. Research which does not support the hypothesis can be deemed less valuable and is less likely to be published. As in many other areas of research in psychology, reports of conflicting results, poor experimental design, and failure to control across studies are problems in the research on cerebral asymmetry.

10. **CLINICAL IMPLICATIONS**

McGlone (1978) reports there are potential applications in the field of clinical human neuropsychology; clinical psychologists are often requested to examine patients admitted to facilities. Among other tests, W.A.I.S. and Wechsler Memory are standard psychometric tools used to predict the presence and the lateralization of central nervous system dysfunction. McGlone's studies suggest these measures may be more accurate in identifying men than women with focal brain injury. Clinicians must now be aware of the increased possibility of type II errors when examining female clients with suspected focal brain injury. It may be of further advantage to design rehabilitation programmes for the brain-injured patients, depending upon their predicted recovery pattern and rate.
Kimura's data (1988) suggests that severe aphasia associated with apraxia may be particularly debilitating, and may indicate a more negative prognosis for women than for men. By contrast, women who display this disorder might be expected to recover more rapidly or more completely. She also points out that if hormonal influences directing neuronal recovery patterns could be identified, then these may provide partial drug therapies for brain-injured patients.

The Gerschwind and Galaburda research studies (1985), concerning how testosterone affects the immune system and the subsequent susceptibility to immune disorders, are likely to provide a future area for research and much needs to be done to develop this topic both in the possible prevention of learning disabilities and the enhancement of immunities to allergies.

Annett (1979) reported that in the clinical field there is little evidence of substance, especially when looking at the adult experiments with standardised tests, e.g. the Wechsler tests in small clinical groups. The nature and reliability of the tests comes into question particularly with the adjustment of subtests. She states that the tests make a good job of assessing overall ability satisfactorily but they are not designed to make a fine distinction between the relative abilities of small groups of patients.

The clinical evidence on adult patients with localized lesions and behavioural deficits suggests there are sex differences in cerebral organization and that they do influence psychological function. (McGlone, 1978).

Annett (1979) reports that the greater dextrality of females than males in manual skills has clearly been demonstrated. This comes from a natural bias which depends on factors associated with left hemisphere specialization for speech, the stronger the right shift in females, the slightly higher the incidence of dextral hand preference, the faster the language acquisition of girls compared with boys, and the greater the effect of maternal rather than paternal sinistrality on the handedness of offspring. Annett concludes that females are more biased toward the left hemisphere and toward language skills than males.

Despite all the research to date, the relationship of lateralisation and ability can still only be speculated upon, although one can state that males and females do differ to some extent in verbal and spatial skills. Retaining an awareness of the extent of the overlap in abilities...
tends, however, to temper any suggestion that sex be used as a major criterion, by itself, for determining career options and educational opportunities. The professional and academic order of the day is individual testing instead of gender tendencies and gender basis.

11. DISCUSSION

The study of sex differences in human cognition is heavily politicised both inside and outside the scientific community. This has led to the making of many uninformed social pronouncements about sex differences in society, Ussher (1991), in particular with respect to work and selection of careers, and the question of the relevance of high spatial ability for certain disciplines and professions. According to estimates of trait requirements prepared by the U.S. Employment Service, most technical-scientific occupations require spatial ability occurring only in the top ten per cent of the U.S. population. A statistical justification has been claimed for the grossly disproportionate representation of men and women in these fields. Unfortunately, opposing forces have expressed conflicting views; some may state that the perceived differences are biologically fitting and fundamentally justified while others, rejecting the same evidence, will see the same differences as purely an accident of our social history and therefore unjust and changeable. Even Crichton-Brown (1880) stated that the tendency to symmetry in the two halves of the cerebrum is stronger in women than men. A women's movement leader in the USA has responded by saying that no one wishes to prove one way or another whether the male or female brain is alike or equal.

Levy (1978) proposed that in evolutionary terms, man needed a high level of visiospatial skills as the hunter, and that this was an adaptive development, thus creating an adaptive advantage.

McGlone (1980) summarises the clinical studies (both verbal and non-verbal); the normative studies (tachistoscopic, dichotic and manual asymmetry studies); the anatomical studies (neural symmetries, vascular symmetries); electrophysical studies (EEG and sodium amytal). She concludes there is a growing body of evidence that sex differences in brain asymmetry exist, particularly in adulthood, but conclusions should not be generalised from sex differences in brain organization, only sex differences in overall cognitive skill. There is still very little support for Buffery and Gray's (1972) model that male brains are more symmetrically organized than female brains. The data still fails to confirm fully that male
brains show greater functional asymmetry than female brains. Nevertheless, when sex differences are found, the vast majority confirm the latter.

Fairweather (1976) continues to be the strongest opponent to McGlone’s views regarding the readiness, without adequate proof, to state there are sex differences. He says there is little apparent attempt to think about the different sorts of processes which might underpin the few overall differences or "sex by hemisphere" interactions, or even hemisphere differences themselves. He points out that in many of the studies, practice effects are an almost universally ignored factor and that this might well interact with sex. Fairweather is also a proponent of the invasion hypothesis whereby the invading verbal processes displace visuospatial processes, reducing both overall ability and laterality effects for that sort of skill. He states there is a lack of thinking with regard to suitable models, as opposed to data gathering research that has taken place in this area in the last decade.

Iaccino (1993) in his book, proposes an attentional variation model which he says appears to be the most applicable explanation for such inconsistencies found between the genders and their lateralization. His model is an indicator of cortical asymmetry and states that the attentional set is a by-product of cerebral functioning, not independant processes. Attentional variations may be the norm in many studies (refering in particular to Kimura’s and Bryden’s designs) i.e subject differences will always exist. Therefore it would be better to monitor the normal variations rather than attempt to control them, and then capitalise on the strongest ones in a well thought out and improved methodology. Iaccino concludes that attentional variation is a reflection of organisational differences between the two hemispheres i.e one should not expect to find significant effects every time this variable (attention) is manipulated. Researchers should expect a good deal of intersubjective variability, and not expect consistent and reliable results unless there are multiple replications. He concludes that in using his model the most that can be hoped for is some common behavioural pattern identified with the standard procedures.

12. CONCLUSIONS

The ’70s produced a number of articles which looked at sex differences and functional brain asymmetry (Bryden 1979, Fairweather 1976, Hutt 1979 and McGlone 1977). Conclusions from these articles were that many of the methodologies were too flawed to identify clear sex
differences, and that clinical investigations of psychological deficits after unilateral brain damage contained predominantly male subjects, thus precluding cross-sex comparisons.

Fairweather (1976) concluded that there was poverty of evidence regarding overall sex differences and cognitive skills. However, it was generally accepted there were differences in asymmetry between the male and female brains, in particular related to lateralisation of speech and visiomotor skills.

The '80s research has produced a volume of diverse and contradictory findings on hemispheric functionalisation and its relationship with gender. Conclusions are still tenuous. Sex differences are almost certain to be relatively small and one must be careful not to attribute sex differences to differences in functional asymmetry when they are produced by different factors.

There is clearly a growing body of knowledge relating to individual differences and lateral brain specialisation, and the relationship between behaviour and brain organisation. Overall, the evidence is pointing more convincingly towards sex differences existing in brain asymmetry in adults. On studying the research, it is safer and easier to look at sex differences in brain organisation than at sex differences in overall cognitive skill. However, when sex differences are found, the vast majority are compatible with the hypotheses that there are functional and cognitive differences between the sexes. When statistically analyzed, sex-by-laterality interaction often tends to be weaker than the main effect of laterality and is easily altered by other factors such as age, etiology of the lesion, strategies, and test procedures. The conclusion drawn from the 80s research has been that individual variation within a group is much greater than statistical difference between groups. The impact in the debate has been to focus research more in the area of sexual variation and brain organisation (Iaccino 1993).

The 90s have moved on from the studies of sex differences and are studying sexual variation as compared to dichotomies in functional specialization of the human brain. While social and experiential influences and their interaction with the nervous system are a plausible explanation, no compelling environmental arguments have been offered to account for sexual variations in functionality. It is now proposed that there may be no inter-hemispheric differences between the sexes, but instead there may be intra-hemispheric organisational
differences on a cortical-subcortical gradient. Current research is investigating this topic.

The most obvious conclusion is that basic patterns of male and female brain asymmetry seem to be more similar than they are different. This is not to deny that there are gender differences in brain lateralization but it is not currently clear how great or what is the magnitude of the variations because they seem to fluctuate from one experimental procedure to the next. Environmental conditions and factors contribute to important gender differences as indicated by Levy's work (1978) but the genetic and biochemical variables play a very significant role in shaping eventual behavioural patterns of males and females as shown by Kimura's work (1982). As elsewhere in psychology, the nature versus nurture debate will continue for the lateralization and gender differences in the brain. Nevertheless, it is only by focusing on those differences that our knowledge of brain function will continue to expand.

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Helen Nightingale

Review No.2

A CRITICAL REVIEW OF THE LITERATURE OF PREMENSTRUAL SYNDROME AND IN PARTICULAR LATE LUTEAL PHASE DYSPHORIC DISORDER AS A CLASSIFICATION IN DSM III R.

Submitted by Helen Nightingale

for the Doctor of Psychology (PsychD)

in Clinical Psychology

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A CRITICAL REVIEW OF THE LITERATURE
OF PREMENSTRUAL SYNDROME
AND IN PARTICULAR LATE LUTEAL PHASE DYSPHORIC DISORDER
AS A CLASSIFICATION IN DSM III R.

1. INTRODUCTION

A review of the literature on premenstrual tension (PMT) demonstrates immediately that a considerable and confounding set of misunderstandings has developed concerning this phenomenon. Historically, the literature concerning premenstrual syndrome (PMS) is predominantly medical, as the physical and biological symptoms were identified firstly by doctors. Although these presenting symptoms have not changed over the years, the contributing factors are now better defined and understood. There remain, however, major problems in defining, classifying and quantifying the symptoms of PMS. Its aetiology is unknown, and definitions of the disorders have varied considerably and therefore replications of trials in search of effective treatments have been poor. Due to the medical lead taken in the study of the physical treatment of PMS, psychiatry has become concerned with this syndrome and developed it to the point of identifying the syndrome as a legitimate mental dysfunction, clarifying the psychiatric diagnosis and thereby entering it formally in 1989 to the research appendix of DSM III R (The Diagnostic and Statistical Manual of Mental Disorder 1987).

With regard to psychology, contributions have been limited in theory and also in applied interventions and management of PMS, taking the form of research papers from 1960 onwards. Since the move made by the American Psychiatric Association to classify PMS as a psychiatric disorder, a controversial debate has been followed by psychology in the literature. Psychological research has been limited and treatment methods are as limited as in the medical field. To date there is still no known effective treatment for a clinically significant aversive premenstrual experience. (Blechman et al 1988.)
2. DEFINITIONS OF PREMENSTRUAL SYNDROME

The syndrome of premenstrual tension was first described by Frank (1931) who identified feelings of tension and irritability, caused by unstable female sex hormones associated with the womb and linked to a desire to find relief by foolish and ill-considered actions on a cyclic basis and caused by female sex hormones.

Moos (1969), who designed the Moos Menstrual Distress Questionnaire, found over 150 different symptoms associated with the menstrual cycle when he reviewed the research literature. These included: physical/somatic, psychological/emotional and behavioural components. Physical and somatic symptoms included: abdominal bloatedness, swelling, breast tenderness, headache, loss of energy and backache. Psychological and emotional states included: tension, anxiety, depression, irritability, and hostility. Behavioural symptoms included: avoidance of social contact, a change in work habits, increased tendency to pick fights (mostly with their mate) and crying spells.

The time and onset of the symptoms set important criteria and these were identified by Abplanalp et al (1983). She listed several factors which should be taken into account which are not dissimilar to the criteria for LLPDD. In particular the symptoms of PMS must occur in the luteal phase of the cycle and must be dissipated with the onset of bleeding. This phase specified experience of symptoms must be confirmed over at least three monthly cycles. Usually there should be a 30% worsening in severity in the five days prior to menses.

However, the severity of all of the above symptoms is still an ill-defined area and relies heavily on self reporting by the subject. This can be a further source of unreliability, as Ruble (1977) found that conclusions using this method may be exaggerated.

Clare (1979) reported that the symptoms which make up the premenstrual syndrome are not uncommon and can occur intermittently in all women of childbearing age, there being no one set of symptoms considered to be the standard criteria. In such cases only the evidence of a premenstrual exacerbation of symptoms which occur at other times may indicate a premenstrual component.
The term "premenstrual complaint" is often preferred by psychologists as the term "complaint" implies an emotional disturbance in the life of an individual (Broome 1984). Since mood disturbance is generally accepted as a major component of the syndrome, this is probably the best alternative.

In defining PMS, a range of inexact criteria must be present and taken into account. Details of the full range are now listed in LLPDD in the DSM III R. (1989).

3. PREVALENCE

Exact statistics on the prevalence of premenstrual disorders are difficult to obtain, due to problems of definition. Clearly, a large number of women appear to suffer from menstrual cycle problems but because of the methodological problems it is difficult to offer precise estimates; some vary from 25% (Coppen and Kessel 1963) to 90% of female populations (Reid and Yen 1981) depending on the definition used, the subjects, and the method of assessment.

Symptoms of premenstrual syndrome are actually very common in all women; but when the selection of subjects takes place for studies, the existence of severe debilitating PMS is apparently relatively rare and the probability that the investigator will by chance collect a sufficient number of women to study severe PMS is quite small. Schinfeld (1983) studied the symptom profiles of 241 females and described the most frequent complaints as depression(55%), headache(42%), irritability(33%), fatigue(23%), and crying (19%). "Depression" refers to feeling sad, not to the syndrome of major depressive disorder. Abplanalp (1983) and Alplanalp and Hasket (1984) drew attention to the fact that symptoms of PMS are not characteristic of major, endogenous depression but rather are specific to those of an atypical depression.

4. THE RELATIONSHIP BETWEEN PMS AND PSYCHIATRIC DISORDER

Endicott and Halbreich (1982) studied the relationship of premenstrual symptoms to psychiatric disorders. This has become an important feature for study, as it has been found that PMS is likely to exacerbate mood state changes in women during the premenstrum. The
prevalence of affective disorder in women reporting premenstrual mood changes has been shown to vary between 41% (Mackensie 1986) and 60% in Endicott et al., although Endicott had a very small sample (10).

5. **MEDICAL INTERVENTIONS**

To date medical treatments have been the main focus of intervention, partially because of the biological/physiological nature of the problems (the menstrual cycle is governed by an extremely complex sequence of hormonal changes), and partially because somatic complaints eg. aches and pains are more commonly reported by women.

Premenstrual syndrome was labelled by Green and Dalton (1953). They reported that PMS was a biological-hormonal based disorder (Dalton 1977) due to a deficiency of progesterone. For almost twenty-five years Dalton and colleagues claimed to cure PMS with natural progesterone. It was this model that supported the use of PMS for the defence of murder, and the subsequent compulsory treatment order of offenders. However, subsequent surgery found that hysterectomy failed to cure the premenstrual syndrome and may even actually initiate it, and further research failed to confirm the positive treatment effects.

There is clearly a general assumption by workers and researchers that PMS is a biologically based disorder (Abplanalp 1983), and while that view has continued the research has considered treatment by medical interventions, mostly of a chemical nature. Research using chemical treatments suffered from poor methodology, either in the selection of subjects or in the failure to control and match for placebo effects. When recognised treatments through the sixties and seventies underwent double blind controls, the power of placebos often offset the claims of drug cures, showing placebo effects to be as effective in treating PMS as any medical intervention (Sampson 1977, Clare 1979, Reid and Yen 1981, Steiner and Carroll 1977). Such treatments have included: oestrogen and progesterone, and variations; bromocriptine; prolactin; prostaglandin; vitamin B6 and oil of evening primrose.
6. COGNITIVE AND BEHAVIOURAL COMPONENTS OF PMS

Fielding and Bosanko (1984) state that premenstrual affective changes do not occur in a large proportion of women, but when mood disorder has been found, the results suggest that the disorder is not a unitary one. When self-report is used, women report negative affective changes during the cycle. However, when the measures are taken at different points in the cycle, there are no significant differences between premenstrual and menstrual states.

Anecdotal studies in the form of case studies and descriptive vignettes are frequently quoted, which suggest that women are more likely to be hyperactive, aggressive, or violent during the PMS stage of the cycle. Further correlations are cited in the early literature but are often methodologically unsound (Parlee 1973). In her famous and oft-cited paper, Parlee warns against the failure to identify and control causal relations, although there are many identified correlations between hormonal changes and the occurrence of various behaviors. She concluded that it is difficult to predict anything about an individual's behavior from the fact that a subject is in the premenstrual phase of the cycle. She also concluded that there is no widespread support for the view that affective changes in the cycle are accompanied by cognitive or performance decrements.

Trunnell (1986) presented results similar to those obtained by Taylor (1979). They stated that PMS results from the interaction of biologic, psychologic and social factors which are unique to each woman. A predisposition to PMS interacts with an individual's past and present life experiences, attitudes, beliefs and coping styles, attributional styles and social forces which also interact with stress. It is best considered as a multi-factorial syndrome.

Elsner et al (1980) stated controls for placebo effects in all research methodologies are essential, because women with PMT benefit from treatment regardless of what is used. Often the placebo effect was undetermined but occurring at a high frequency. Many of the double blind trials reflected an interestingly high placebo response in the control groups.

During the late seventies a series of experiments was run at Manchester University to improve the understanding of attitudes towards menstruation and the feminine role. Vila and Beech (1978) found that women had a lower threshold for learning responses to aversive H.Nightingale

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stimuli which were presented to them when they were in the premenstrual phase. Beech (1980) proposed a model for phobic learning during the premenstrual phase.

Blechman E. (1983) proposed a danger-signal hypothesis of premenstrual complaints. She has applied Seligman's hypothesis to the premenstrual experience. This model describes how some women progress from normal premenstrual changes to clinically severe premenstrual complaints and how a few of these high risk women progress from acquired premenstrual complaints to life long psychological and physiological disability.

Another factor which researchers identify as relevant is the presence of stressful life events (Wilcoxon, Schrader, and Sherif 1976). Personal coping style may be an important determinant in exaggerated pain perception. Slade et al (1983) and Paige (1973) reported that women who treat menstruation as an illness may experience higher levels of PMS symptomatology.

7. SUMMARY

Difficulties are created by the lack of an agreed set of clinical features which define clearly the disorder of PMS and discriminate it from other physiological disorders such as dysmenorrhea, with which there is potentially considerable overlap. Without clear agreement on clinical features, research is hindered in terms of subject selection and treatment evaluation. Further compounding variables, such as the use of hormones for treatment, have been mixed with subjects using hormonal birth control and some researchers have failed to separate these conditions across controls. With this level of confusion concerning the range and onset of symptoms, unclear methodologies, poor subject selection and the lack of controls for placebo effects, little progress has been made towards the clarification of the syndrome, its treatment and management interventions.

8. THE CLASSIFICATION OF LLPDD

In one of her many succinct review articles Abplanalp (1983) called for urgent clarification of the definition of PMS. This was achieved in 1988 when the American Psychiatric Association decided to set a criterion for a subset of PMS provisionally called Late Luteal
Phase dysphoric disorder (LLPDD) and to place this in DSM III R (Diagnostic and Statistical Manual). This text defines a clinically significant behavioural or psychological syndrome or pattern which is associated with present distress or disability (1985). The inclusion of this category in the manual was the most controversial aspect of the third revision and has not been accepted by the non-psychiatric world.

The background to the decision was published in a paper by Spitzer et al (1989) in which he identified the committee members who had made the decision (all except one, psychiatrists). This decision was met with condemnation both by medical physicians, interested women’s groups, and other mental health professionals including psychologists. The blow was somewhat softened by placing the disorder in the appendix for research, under a proposed diagnostic category needing further study - though few believe this is where the disorder will stay (Caplan 1992).

The criteria helped to clarify for research purposes a homogenous group of women with a disorder which effects a disturbance which regularly and repetitively disrupts psychosocial functioning in the days before menses. The criteria included:

a) the phase of cycle,

b) the symptoms of the disorder,

c) the severity,

d) differential diagnosis, and

e) confirmation by daily ratings by the subject.

However, there are still no standards operationalised for symptom severity.

The main features of the LLPDD criteria are a disturbance in mood as an essential feature and then five out of ten possible physical symptoms. Classification as mood disturbance could include: marked affective lability, persistent anger, marked anxiety, or marked depression.
The following table is a summary of the arguments presented both for and against the case for inclusion of LLPDD in DSM III R. The arguments against the case have been summarised from the A.P.A Committee on Women:

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<tr>
<td>1. Not a gyn/obst syndrome</td>
<td>1. Potential harm to women for nosologic reasons.</td>
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<tr>
<td>2. Absence of consensus</td>
<td>2. Previous PMS definitions are adequate.</td>
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<td>3. It will promote replicable research and the committee had little difficulty in defining it [unlike hypochondria and personality disorder.]</td>
<td>3. Premature, little is known and it will promote a false sense of knowledge and discourage research. Little known about etiology and treatment.</td>
</tr>
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<td>4. It will facilitate research to clarify etiology and effective treatment. Diagnostic criteria encourage research.</td>
<td>4. Already exists as ICD (625.4) category of physical disorder (gyn). PMS: Not needed to be placed as a classification of mental disorder.</td>
</tr>
<tr>
<td>5. Medical insurance for treatment may be available. Quote&quot;... such fiscal considerations should not be the basis for excluding the category from classification and it is due to clinical and scientific issues...&quot;</td>
<td>5. Classification implies biological factors are not central to LLPDD; it requires psychotherapy/psychopharmacology, therefore a possible loss of medical insurance for treatment of a mental disorder rather than a biological one.</td>
</tr>
<tr>
<td>6. No clear definitions have been given under ICD (625.4) no diagnostic category and no definition (especially for mood disturbance) and functional improvement.</td>
<td>6. All women experience some PMS changes so how can LLPDD be considered a disorder?</td>
</tr>
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7. This could also apply to many other well established diagnoses, eg Intelligence and Mental Retardation. Sadness and grief.

7. Changes at PMS are universal LLPDD only arbitrary selection of criteria in extremes.

8. There is always clinical judgement in DSM IIIR following patient self report.

8. There is no objective measure in LLPDD criteria for functional impairment therefore validity of diagnosis is questionable.

9. No biological abnormality has been identified and LLPDD like other names is descriptive and does not imply any particular theory about etiology.

9. LLPDD implies something is wrong with menstrual cycle but it is yet unproven. This implies a biological disorder by its very name which will detract from other etiological factors thus denying psychological/social research.

10. This happens in many disorders which are differentially prevalent according to gender. eg premature ejaculation.

10. Gender bias is operating as it can only be diagnosed in women.

Other arguments against the DSM IIIR not mentioned above include:

11. DSM IIIR facilitates psychiatrists referring to psychologists (referrals are linked with insurance claims).

11. Even with DSM IIIR, clear categories for patients are difficult, misleading and not reliable.

12. Listing in DSM IIIR will assist funding from drug companies.

12. Ethically women will be easily diagnosed with little thought of consequences.
13. Once a DSM III diagnosis is made, insurance will pay a psychologist.

13. Patients cannot be treated by a psychologist without an MD referral.

Hamilton and Gallant (1990) have led one arm of the opposing debate, based purely on empirical evidence, rather than clinical experiences as proposed by the team of psychiatrists from APA. To prevent the category of LLPDD being excluded from DSM III R, the APA committee have denied that research evidence so far fails to support the LLPDD. Hamilton et al report that the APA has failed to provide primary sources on the debate.

9. **IMPLICATIONS OF PMS AND LLPDD**

The implications of the American Psychiatric Association deciding to register the syndrome as a psychiatric disorder are very far reaching for women in general, woman as patients, and mental health professionals including psychologists.

10. **IMPLICATIONS FOR WOMEN**

Ussher (1991) points out that there is now identified a number of syndromes of madness related to "raging hormones" which will cover almost all of a woman's life (adolescence, post-natal depression, menopausal syndrome and PMS). Each syndrome describes debilitating effects on day to day living, and of course renders women unstable and causes performance deficits (often rendering women unfit for work, sports and child-care). In some cases the instability caused by these hormones has led to increased suicide (Mandell and Mandell 1967), increased accidents (Dalton, 1964) and murder (Hey 1985).

Ussher and others point out that there has never been any empirical evidence for any of these supposed deleterious effects and performance is not significantly affected by menstruation. She states that the notion of menstrual liability is a fiction linked to fantasy, with no basis in reality. Ussher subscribes to a feminist view of such syndromes, i.e. not to deny the sensations woman experience eg. irritability or depression, but to ask why these are being labelled in this way and supported. She points out that large sections of society stands to gain from the view that women are mad due to hormones, e.g. drug companies, employers,
medical experts - and because the root of the problem is physical, only physical treatments will produce a cure. A patriarch’s view of controlling the world. Ussher also points out that many woman now derive genuine benefits from an ideology which functions to explain and obscure social contradictions in their lives and those of other women. This view is also supported by Parlee (1989) and Caplan (1991).

11. IMPLICATIONS FOR WOMEN AS PATIENTS

In order to receive comprehensive treatment, recognition of the syndrome by a DSM III R category is very important, especially in the USA where, because of private funding of health care, women may not get access to appropriate services, and in particular psychologists. The disbenefit is that insurance companies insist upon the labelling of all treatments, which raises the issue of confidentiality as insurance is often paid by an employer, who often can have access to confidential information. This becomes of even more importance when APA definitions of LLPDD are classified as a mental dysfunction. The effects of such a label carry with them all the frequently identified stigmas of mental illness and associated dysfunctions. However, it must be noted that despite the stigmas, women are increasingly referring themselves to specialised clinics for the treatment of premenstrual syndrome, and most employee assistance programmes now offer specialist services.

12. IMPLICATIONS FOR THE PSYCHOLOGIST

It is clear that few psychologists support the addition of LLPDD to DSM III R, both for scientific reasons (Hamilton and Gallant 1990) and for political reasons. Caplan (1991) draws attention to the failure of the AMA or APA to take into account recent literature reviews and research evaluation of LLPDD since its inception. Politically there will remain an issue of control of access, cost and referral from psychiatrists for patient management and assistance for PMS.

With regard to treatment, behaviourally orientated clinical psychologists can often treat the syndrome symptomatically, e.g. anger or pain management and low affective states, regardless of a clear diagnosis but based on an individual functional assessment. When diagnosis is not related to an insurance reimbursement, it may not be important for hypothesis testing to
identify the diagnostic category of the presenting behaviours. It may be seen to be more important to investigate and assess the nature and outcome of the reported difficulty with a view to changing that behaviour. The author would propose that if cognitive changes are required to take place, labelling is often detrimental to change, especially when there is such confusion surrounding definitions.

13. IMPLICATIONS FOR RESEARCH AND TREATMENT

An important finding in the research so far is that placebo effects are important in the treatment of PMS. This area of research is likely to fall to the psychologists for a number of reasons. Their applied research knowledge is likely to set up methodologies which will isolate and control for these placebo effects. Furthermore it is likely that placebo effects may fall into the "demand characteristics" of treatment and require interpretation accordingly. Factors which could be included as such, are likely to be attributions, role learning reinforcement, and a range of other cognitive variables.

Other non-specific but contributory factors which will need investigation or follow-up include coping with menstrual pain, experience of stressful life events, personality factors and coping strategies, effects of promotion of health behaviours including exercise, dietary controls and life-style self management.

Meanwhile, specific treatment methods such as biofeedback, pain management, coping strategies for irritability and anger management, and respondent conditioning procedures to menstrual complaints, should be evaluated. The importance of life-style management (a contemporary trend), which includes diet and exercise programmes, is also gaining support from self-help groups and counsellors, but once again this must be evaluated.

Another somewhat secondary area of development for the psychologist is the recording and interpretation of data from self report, and an increase in the validity and reliability of that data. Symptom measurement in PMS is important to achieve and standardise, particularly with respect to the intensity and duration of symptoms, the relationship of the symptoms to menstruation, and the defining of the asymptomatic baseline as discussed by Steege J.F.(1990). He points out that individual symptoms, or clusters of symptoms, can be
assessed for their tendency to reappear at similar levels of intensity, and for their duration across different menstrual cycles. Physical symptoms may be more robust than emotional ones, but the closeness of this association has not been assessed. Furthermore, the relationship of personality profiles to robust clusters of symptoms and their patterns, still requires investigation. Methods of statistical summarization which allow time-series analysis of data, and the exploration of symptoms surrounding specific biologic markers, may facilitate the understanding of the behaviours.

14. SUMMARY AND CONCLUSIONS

Perhaps one of the important contributions psychologists can make, both in clinical and research terms, is to assist in the different methods of assessing symptomology and to present appropriate models for understanding those symptoms. One criterion for diagnosis is the retrospective account of menstrual difficulties and self report (Cox and Mayer 1978). For some symptoms self report is the only method available apart from the the use of symptom checks lists (Moos 1969). These subjective methods are difficult to standardise and present further difficulties in research methodologies (Parlee 1973).

No comprehensive theory exists to account for the complexity of menstrual cycle symptomatology. However, a number of factors have been reported to have important etiological significance: physiological, psychological and social. Advances in the treatment of menstrual cycle disorders will only be achieved through a thorough understanding of these sets of factors and how they influence each other.

Fifty years of research into PMS has failed to produce a satisfactory method of treating this disorder (regardless of improved definitions and research methodology in the last five years). The quality of research has been poor and seldom multi-disciplinary. Controls and placebos have not always been used in the evaluations, especially in the medical research.

There is a need to co-ordinate the biological research in order to link the cyclic function of the hypothalamus-pituitary-ovarian axis with a psychological behavioural-mood-personality, with the sine qua non of "PMS".
Future research lies in the combination of a multi-disciplinary approach and the use of multifactorial statistical analysis, which should assist the consideration of whether PMS is a range of symptoms which constitutes a continuum of subsets of PMS, or a number of clusters, or a multi-model collection of syndromes - i.e. whether PMS exists as a single entity, or if it may take many different forms.
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IS THE MENOPAUSE A SYNDROME?

Submitted by Helen Nightingale

for the Doctor of Psychology (PsychD)

in Clinical Psychology

March 1995 - Surrey University
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IS THE MENOPAUSE A SYNDROME?

1. INTRODUCTION

Women's life span has increased over the last two decades and with that has come a greater expectation of a fulfilling life beyond the childbearing years. This includes an improved quality of life with associated wellbeing and good health. The menopause, which usually occurs around the age of fifty, is defined as the cessation of menses, the failure of the ovaries to produce any further eggs to be fertilised. This is a physical marker of this particular life stage, i.e. the forties to sixties which is referred to as the climacteric. There are clearly individual variances in the different symptoms and experiences which women go through during the climacteric. During this stage of life it is likely that a number of life events may occur for a woman, including managing children in late adolescence and their leaving home, parental ageing and ill-health, a self-questioning about career and other life choices, and possible changes in marital and relationship conditions. Menopause occurs for all women and although it is a universal phenomenon it is seldom discussed openly and is a source of fear and confusion.

This essay considers whether menopause is best described as a medical condition consisting of biological symptoms and signs (the medical position) or whether other elements or models can explain the menopausal experience. Consideration must be given as to whether psychological factors and psychosocial factors combine together at this stage of life and if their correlations may have an impact on the individual.

To date, the role played by other factors with regard to the menopause has been ignored by the medical profession. The biological model allows for little input from external, environmental factors to influence the body. But there is considerable evidence available that other factors contribute to the symptoms women experience.
2. **THE MEDICAL POSITION**

Medicine is based on clearly defined biological models. Illness is caused by a physical dysfunction in the body. Based on this paradigm, medicine has claimed menopause is a syndrome. This means it is a disease causing illness, and for correct diagnosis there are clear symptoms and signs identified. These are listed in order for physicians to diagnose and prescribe treatment. Utian and Serr (1976). The syndrome is considered to be caused by an oestrogen deficiency, which is the root cause for all symptoms associated with the menopause. The symptoms are varied but the main ones are: deficiency of oestrogen, an increase in FHS (Follicle Stimulating Hormone) in the blood, vasomotor changes including hot flushes and night sweats, atrophic vaginitis, loss of libido, depression, loss of confidence, irritability, sleep disturbance, mental instability and finally osteoporosis (brittle bones). For these symptoms, medicine purports to have found a successful treatment based on the hormone deficiency model, namely to replace the loss of the hormone oestrogen causing all of these problems.

In the late sixties drug companies funded menopausal clinics to research the Hormone Replacement Therapy (HRT) and to test the use of oestrogen to treat menopausal symptoms. The sales and use of this treatment grew rapidly, HRT became used as a general panacea for all ailments associated with the menopause, and it was marketed and advertised heavily to physicians. This continued until the early eighties when independent research showed some serious side effects. Endometrial and breast cancer incidence had increased with HRT users.

This exposure brought to light the very large numbers of HRT users, especially in the U.S., who had been given HRT during menopause. These women had been placed at serious risk without gynaecologists and G.P.s justifying adequately the need for oestrogen. This discreditation of the medical profession concerning the inappropriate use of HRT brought a wide response from within the profession, womens' health groups and a range of other professions.

The first to express concerns were psychiatrists who evaluated the belief that menopause was a time of high risk for psychiatric disorder. Ballinger (1976). Ballinger found no evidence to support this view and concluded that the menopause syndrome was a medical myth.
Despite the lack of empirical evidence, many physicians and in particular gynaecologists still supported the theory of hormonal deficiency leading to mood imbalance. Similar medicalization had occurred for post-partum depression and premenstrual syndrome. Both Utian (1990) and Cobb and O'Leary (1990) identified the political and financial role played by drug companies who funded these menopausal clinics to promote HRT. Although Cobb refuted the need to call menopause a syndrome since the reported symptoms were not universal and therefore could not constitute a disease, Utian supported the syndrome diagnosis and stated that HRT had also offered women preventative protection for vasomotor risks, e.g. coronary and stroke incidence had decreased and the incidence of osteoporosis had been reduced in HRT users. In defence of medicine Conrad and Schneider (1980) stated that definitions and clarity of diagnosis were under continual internal scrutiny by the medical profession and results from research were always incorporated into the diagnosis review. However, experiences in the research of Late Luteal Phasic Disorder demonstrated that reappraisal of classification in the light of research has not been the case. Spitzer (1989).

Nachigall (1990) in support of the syndrome of menopause offered a pragmatic and altruistic view. As a physician, she stated that the individuality of the patient must be taken into account and that prescribing of HRT should be based on an assessment of the severity of individual symptoms, which should be balanced against the possible side effect of endometrial cancer. She stated that if a patient has a complaint and the doctor can relieve that ailment then s/he is obliged to prescribe for it.

In defending the placing of menopause into a pathology category, Kaufert and Gilbert (1987) pointed out that women made choices about going to visit a physician during menopause. Some women would prefer to explain unusual symptoms as "hormone related" rather than perhaps psychological. Additional support to the biological model has come from women requesting HRT because it offered relief from the physical symptoms of menopause and often kept them looking younger (oestrogen can improve skin quality, especially in preventing dryness).

Utian (1990) identified four reasons for supporting the biological causation of menopause: the number of follicles in the ovary decreases with age (as seen in post mortem); changes in the blood hormone profile; receptor tissues are affected by changing hormones, e.g. vagina, urinogenital system, skin, hair and mucus membranes become dried and bones more brittle.
Utian stated that patients present with clinical signs which are usually a combination of oestrogen related complaints. The above symptoms are all physical and fit the biological model of a syndrome causing illness or disease.

In concluding the medical position it is reasonable to say that until some alternative models and treatment are offered, resulting in suitable interventions, it is highly likely that medicine will continue to describe menopause as a syndrome, even though the biological model is not comprehensive and fails to explain all of the associated somatic experiences.

3. THE PSYCHOLOGICAL POSITION

Psychology is not able at the present time to offer an alternative comprehensive model in understanding menopause. The energy of researchers has been directed at studying the identified medical symptoms and demonstrating that they are not necessarily caused solely by hormone deficiency but often by some other environmental effect.

Psychology has challenged the appropriateness of the medical diagnosis by considering the biological versus environmental debate. It may be that the medical paradigm is not helpful in understanding all the complexities of menopause. Psychology faces the usual predicaments and pitfalls in studying menopause, which scientific research has met in other fields because there is considerable confusion in presenting clear and accurate definitions of the menopause and the climacteric. The researcher is presented with many methodological problems and concerns about subject selection. Hunter (1990) states that often subjects selected for research are a biased sample taken from menopausal clinics and who are self-referred with menopausal difficulties. Seldom are subjects used from the normal population, many of whom pass smoothly through the menopausal transition without concern. Hunter's research also demonstrated that most menopausal women did not see themselves in worse general health and they showed positive scores on the General Health Questionnaire. / Goldberg (1972). This is important evidence in proposing that a diagnosis of the syndrome of menopause is unlikely to be of help to womens' perceptions of treatment. Neugarten et al (1968) showed that women who had negative expectations about menopause experienced higher symptom levels, and hypothesised that if menopause is a medical syndrome associated with disease, it may increase a woman's symptom level due to fear. The psychological constructs of menopause are difficult to operationalise and so no clear supported view

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emerges. Consequently, empirical evidence appears contradictory and has few conclusions (Greene 1984).

Hunter (1990) studied women before and during menopause. She found that depression in menopausal women should not be attributed automatically to one single biological cause. Analysis of her data showed depression was often due to many psychological and social factors not related to oestrogen deficiency. She stated that a depressed mood can be explained by psychosocial factors such as reactions to menopause, role transitions and life events, and stereotyped beliefs about the menopause. Negative beliefs could act as a filter through which psychological and emotional sensations were experienced, thus influencing women's perceptions and interpretations of menopause. The Hunter study was the first to provide empirical evidence to support this explanation, namely that the oestrogen deficiency model does not explain fully the experience of depression, and may be due to psychological reasons (which may account for as much as 51% of the variance) rather than chemical reasons. Hunter concluded that one cannot explain and attribute all of the different factors experienced by menopausal women to oestrogen deficiency, and strongly rejected the medical model.

Ballinger (1990) found that both her own empirical research and other psychiatric research, which included large general population studies conducted worldwide, did not support the belief that menopause is a time of high psychiatric risk. She found that women did not experience depression caused by menopause, i.e. the deficiency of oestrogen. From this, she concluded there is enough aggregated evidence to call on environmental factors as a major contributor to negative menopausal experiences.

4. THE PSYCHOSOCIAL AND THE SOCIOLOGICAL POSITION

Flint (1975) reported that the perception of menopause is bound up with cultural beliefs. In her studies of Pacific-Asian women, few reported oestrogen-dependent symptoms because menopause means something different to these women. In societies where age is applauded and valued for wisdom, and appropriate roles honoured for more mature women, then the experience of menopause and the women's views are construed differently from those of Western women, where growing old is met with disdain, and resentment or sadness. This finding discredits the medical view of the universality of menopause.
Flint concluded that menopause is defined by each culture and there are conditioned beliefs surrounded by conditioned feelings and perceptions. She states that the biological model may not be juxtaposed to the environmental view and that there is another level of complexity to the interpretation. Both physical and sociocultural factors are important in shaping the symptoms profile of different groups of women. Biologists have paid scant regard to the cultural shaping involved in the subjective reporting of the variables in a variety of cultures. For example, in Africa and Japan women do not report hot flushes. Flint asks firstly whether those changes are there or not, secondly are they present and perceived differently, or thirdly not attributed to the menopause.

Bell (1990) a sociologist, describes the implications of medicalization for women and consequently their health treatments. She refers to the history of medical treatments for childbirth, alcoholism and homosexuality. The consequences of those have been to impose restrictions on the freedom of behaviour and decision making of women concerning the subject. She concludes that medicalizing a common experience is a form of social control.

Briscoe (1982) concluded that there is definitely an excess of disorders of negative effect in women as compared with men, and more often these differences are due to biological differences, with particular emphasis on issues related to reproductive physiology such as childbirth, menstrual cycle and menopause.

Riessman (1983) states that women's experiences are more likely to be medicalized for a variety of biological, social and psychological reasons. Women have not, however, always been passive victims of this process. Kaufert and Gilbert (1987) found that women between the ages of 40 and 59 considered doctors a source of information and help, although they had not necessarily consulted with them about the menopause or reported any type of symptom to them. Their results are supported by Martin (1987) in her study of women's experiences in different phases of their lives. Her research showed systematic differences in women's views concerning menopausal symptoms, the role of physicians and treatment, according to their age. The vast majority of older women saw the menopause in a positive light. Martin also concluded that, to some extent, women choose whether or not to treat the menopause as a medical event.
There are some clear epidemiological/demographical variances concerning life style differences between groups presenting for medical treatments of menopause. Jaszmann et al (1969) found that women who came from lower socioeconomic groups with only primary education had higher symptoms levels than those from higher income groups.

Cooke and Greene (1981) state that psychosocial constructs are difficult to operationalise and so one often finds that no clear supported view emerges. They studied vulnerability factors in peri-menopausal women which Brown and Brown (1976) found had a deleterious effect on life events. These included early loss of one's mother, three young children at home, no employment outside the house, and no confiding relationship. Cooke and Greene found certain aspects of social networks which made climacteric women particularly vulnerable to the effects of stressful life events. They also found psychosocial factors which contributed to the level of psychological symptoms that were independent of the life events experienced. They concluded that major influences on the risk of developing depression at this time were worries about work, adolescent children and aging parents, and that such evidence confirms the importance of psychosocial factors in the climacteric. In a further study, Greene and Cooke (1985) looked at the relative contribution of biological and social factors to psychiatric disturbance at this time of life, and concluded that social life events were more important.

Although no clear and precise alternative models for understanding menopause have been proposed by social scientists, they have collected sufficient empirical evidence to suggest strongly that the biological model is incomplete in explaining women's experiences of menopause and to acknowledge that life events, including existing difficulties, may act to bring about the exacerbation of symptoms at the climacteric. Greene concludes that it is factors pre-dating the climacteric, rather than psychosocial changes occurring specifically at that time, which are found to determine adverse reactions.

5. DISCUSSION

In weighing up the evidence for and against calling the menopause a syndrome, it is helpful to consider the debate and clarify the positions taken. Is menopause a syndrome? This asks, whether a medical model suitably answers the current understanding, and evidence, of the aetiology of menopause. In the medical arena there is a specific cluster of symptoms, seen to occur at the menopause, for which medicine has produced a particular treatment.
This treatment has been partially successful; that is, very successful for some women in reducing vasomotor symptoms, while for others successful only at the price of lethal side effects or other lesser problems. It is because of the treatment that drug company funding has been made available for research. This practice has political implications associated with objectivity, and is criticised for excluding social scientists and limiting their powers of investigation. In addition to the treatment, there is a medical diagnosis which emphasises illness as the cause which, for the subject, may be more socially acceptable. With this diagnosis is linked the power of the medical profession, including the right to control treatment, legislation, access to the prescription, and those factors associated with a paternalistic style of authoritarianism, i.e. the unlikelihood that treatment will be a bilateral decision between the woman and her doctor. Cobb et al (1990).

There is now evidence available to challenge the causal relationship concerning each of the identified symptoms and oestrogen defiency.

Mood disturbance and depression has been shown to respond more successfully to antidepressants than HRT, and psychiatric morbidity is a myth. Ballinger (1990) states that two main issues which complicate the assessment of the effect of oestrogen on the symptoms in the menopause are the very large placebo effects of oestrogen and the use of the term "syndrome". It is very possible that the use of this term is having a limiting impact on perceptions, research and education. The evidence concerning loss of sexual libido caused by menopause has been disproved by Kinsey (1953) and Masters and Johnson (1966).

Cooke considers that the empirical evidence in support of the psychosocial factors is neither overwhelmingly convincing nor particularly detailed in nature, but there is a sufficiently large aggregation of evidence to call into question the "deficiency disease" concept and Kaufert (1990) concludes there is a dangerous assumption that one model should fit all.

Strikler et al (1977) conclude there is not enough evidence to assume that physical changes cause the psychological symptoms of depression, irritability and failure to cope. Strikler calls for professions to take a broader perspective and include a psychosocial approach to all research concerning menopause.
There are many calls for a multidisciplinary approach to treatment, and the literature states that management of menopause should not be left to just one discipline. This will however only happen when medicine releases its control over this supposed syndrome.

Much of the argument against the identification of menopause as a syndrome does not lie solely in the scientific arena of hypothesis testing and results; there is a political and social aspect producing evidence against the medicalization of experiences. The history of medicine is one of labelling and legally controlling many processes, often against the interests of women, which in today's democratic society is wholly unacceptable. Any diagnosis concentrated on an abnormality or a sickness. The historical view of psychiatry (Kraeplin 1906) saw women controlled by their wombs and put forward a perspective which emphasized women as physical inferiors. Historically, medicine has not been kind to women and this is remembered by Women's Health groups and Feminist groups. Ussher (1991).

Society too, has to be educated against old fashioned myths which still prevail, particularly from Victorian times, and accurate information for education is not easily available. There is considerable confusion, not least with definitions and methodology in the research field, but also regarding one of the greatest fears for women, which was described by Neugarten (1968) - "just not knowing what to expect" in menopause. This lack of information may reflect the lack of clarity in a very complex process and, while "syndrome" may not be an appropriate way of describing menopause, there is no other clear, simple and comprehensive model available. Lack of information may also be a further medical method of control, a form of chauvinistic elitism which is maintained by the use of the term "syndrome". When women seek information for a health related issue it is to the General Practitioner they go; G.P.s are the gate keepers of community health care and while this remains the situation they will continue to work in the area they know and understand best - medicine. The information they impart will therefore be medical not psychological in nature. Perhaps what is needed is improved education for General Practitioners concerning alternative modes of help - modes which will reflect the role that psychological intervention can play. However, we must also appreciate the limitations in treatment offered by each health profession, and that psychological interventions appear to be very circumspect and seldom referred to in the literature.
Menopause is a complex phenomenon and in weighing up all the evidence it is clear that to call menopause a syndrome is not just incorrect but is inaccurate. The wide variety of experiences and the lack of universality of those factors should prevent the use of "syndrome". Clearly, all the conditions and experiences cannot be answered by the oestrogen deficiency model. However, while refuting the use of the "syndrome of menopause", there are certain physical symptoms experienced by some women in a degree and intensity which constitutes a serious physical illness that precludes them from experiencing normal everyday life. For these physical symptoms the physician will have some assistance and treatment. Care must be taken not to discard the good with the bad.

Theoretically the syndrome of menopause is not adequately substantiated but in practice, if women need assistance with apparent physical health problems during menopause, it will be a doctor from whom most women will seek help. The most important aspect requiring change is for research to become far more multidisciplinary and for the various teams of researchers to consider broader and combined models which are not just medical. The psychological factors contributing to menopausal experience have been recognised in the research literature but there has been considerable failure to incorporate this evidence into the practical treatment; this failure must be placed at the door of medicine.
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SECTION THREE: Clinical Audit

A MARKETING STRATEGY FOR A REHABILITATION SERVICE IN THE CONTEXT OF THE NATIONAL HEALTH SERVICE INTERNAL MARKET

Submitted by Helen Nightingale

for the Doctor of Psychology (PsychD) in Clinical Psychology

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A MARKETING STRATEGY
FOR A REHABILITATION SERVICE IN THE CONTEXT
OF THE NATIONAL HEALTH SERVICE INTERNAL MARKET

1.0 INTRODUCTION

1.1 This report is concerned with a small outer London Community and Mental Health Care Trust in West London, providing a wide range of services to an average sized population from various geographical areas, social backgrounds etc. Whereas several years ago many of the concepts of marketing would have been inapplicable, recent reforms within the NHS have made fundamental changes to the overall business orientation of the organisation. The largest change has been the introduction of an internal market, dividing hospitals and other service units (providers) from health authorities and general practitioners (purchasers). The Trust as an organisation is required to tender for contracts from the Purchasers of Health care in order to supply the service for the population and thereby to receive funding to support the costs of its operations. Thus, although in its infancy, the development of a marketing orientation has become a key management agenda item.

1.2 There are a number of definitions of marketing. Levitt (1977) stated that marketing is the ability to create and keep profitable customers, and this definition is often considered an acceptable definition. Marketing as a business philosophy is dedicated to the achievement of effectiveness in the ability to keep customers. This was defined by Drucker (1973) as "doing things right", which means conducting the company's affairs in a way which maximises efficiency and will attract customers, satisfy them and encourage them to come back. But in principle, it refers to existing basic concepts surrounding the relationship between the customer and the business,
"Marketing creates and keeps the customer" (Brown 1987) and, more specifically, to the exchange of values between them, i.e. in a contractual situation the provider is offering a set of values to the purchaser, who offers values in return, (money, in the case of this exchange). To conclude, Levitt would describe marketing as meeting the customer needs.

Historically, marketing referred to the way companies presented their products but over time marketing has moved away from just being a series of sales functions which included advertising, selling, product management, pricing and distribution (Brownlie 1985).

Diagram of Exchange Process (Bathie 1992)

The function of marketing is to assist in this exchange process as displayed in the diagram above. The process includes the identification of the desired values, by analysis of customer needs, the identification of various external factors which impact on the market, such as competitors and market environmental issues e.g. legal, social, political and demographic factors, the creation of those values by the planning of relevant services, the communication of the values by the organisation to the customer, and the delivery of them through systems and staff, who in a service industry such as health care play a critical role. In summary, the process of marketing is the management of the understanding of the market, and the creation, communication and delivery of customer desired values.
1.3. This report considers each of the elements in the process of marketing, firstly in theory, and secondly as applied in practice in an actual marketing strategy for rehabilitation services, which has been accepted by an NHS Trust as the direction in which its service is to go.

To compete successfully in the NHS market place the Trust must be able to define and understand its customers' needs and satisfy them. The Trust should recognise the primacy of its customers and focus the business on its relationships with them. Satisfying customers will win contracts and ensure the survival and growth of the Trust. To do this successfully one must:

* Understand the market, and customers' values

* Create the desired values

* Deliver them

2.0 UNDERSTANDING THE MARKET

2.1 The Trust operates in a complex dynamic environment and to compete adequately it must understand the nature of the market, where the boundaries of its market should be, and how it is changing, in order to deliver appropriate and adaptable services over time. Information is extremely important in this situation and this will include demographic, audit and cost information. Hence, information systems need to be developed to support this process. The following elements need to be considered:

i) The customers: who are they? (purchasers, GP fundholders, private sector etc)

ii) The competitors: who are they (the private sector, other Trusts, local authorities)?

iii) Social aspects

2.2 Internal and external factors: Glueck and Jauch (1984) identified a Strengths, Weakness, Opportunities, Threats (SWOT) analysis as the essence of the envisaged problem solving process, but identified a proliferation in the variety of conceptual models of strategic planning in recent years. To identify where the Trust is positioned in the market, it is useful to conduct a SWOT analysis of current services in the light of the environment and available resources including staff, finances and estate.

A SWOT analysis (Peters and Waterman 1981) defines the strength and weakness of the organisation and its product in terms of production, and then considers the opportunities and threats of the external environment. This assists in realising a better understanding of the organisation and its environment, and the competitive gap.

Another technique which may be of assistance is described by Ansoff (1965); that is the development of different marketing strategies in order to reduce the competitive gap. These strategies are summarised as developing (i) a market penetration strategy, (ii) a market development strategy or (iii) a new product development strategy. Each strategy describes the actions which an organisation would need to take in order to close the competitive gap.

2.3 Suppliers: Of main interest in terms of suppliers are the staff. Health service is extremely labour intensive and the supply of the manpower resource is of critical importance. In order to provide a high quality service it is necessary to access a good supply of often highly trained and qualified staff, a factor very much affected by the activities of competitors. The health service offers much in the way of professional training, support and professional development in order to assist recruitment of these specialists. Competitors in the private sector may counter this by offering higher salaries, and often greater professional autonomy.
A comprehensive marketing strategy means adopting resources to match the characteristics of the market environment. This requires a scan of the environment including a SWOT analysis, and then an organisation of resources accordingly.

King (1982) states that there are four reasons why so many strategies fail. These are:

* Over simplification, e.g. marketing is interpreted as just price cutting;
* Good research into consumer needs is not followed up by integrating the information gained into the other functions of the organisation e.g. production;
* Accountancy marketing, which is the pursuit of short-term financial performance;
* Formula marketing, where a rational approach is dominant over entrepreneurship and risk taking, thus producing middle of the road products or services.

The four key aspects of what he terms "real marketing" are:

i) Start with the customers and meet their needs, based on customer knowledge.

ii) Adopt an incremental approach to developing a strategy, focusing on product quality and its improvement, and on increasing productivity.

iii) Focus all the departments within the organisation on a common corporate goal, i.e. the corporate culture should be one which conveys that marketing is a function in which all departments have a role to play.

iv) Innovation, i.e. the organisation should adopt a flexible approach to producing its services, in contrast to adopting a safe or static product/service mix.

A marketing system should identify the influences impacting on the Trust (Drucker...
1973) and recommend marketing orientated responses to creating a customer. A marketing system is defined as those aspects of the environment which impact directly on the Trust, e.g. the Trust's suppliers, its competitors, customers, and the physical and communications intermediates in the exchange process between the Trust and its customers.

2.6 Finance: The introduction of major changes into the health system has been finance led. Scarce funds must be directly competed for and are granted at the point of production of service. Any strategy should therefore include keeping costs to a minimum.

3.0 CREATING, COMMUNICATING AND DELIVERING VALUES

3.1 Values are central to the whole concept of marketing, although the actual value per se may be symbolic rather than explicitly physical. Bagozzis (1975) states, marketing (as opposed to economic) man may be irrational, responding to psychological and not just economic forces, and making decisions unconscious of the actual costs and benefits. Furthermore he may be influenced by cultural and social factors. In summary, the customer may be responding to a combination of functional and symbolic elements.

3.2 Following analysis of the elements in the marketing system, the Trust needs to decide which services it should provide in the future, either by expanding into new areas, maintaining its present services, or by withdrawing some of the current service. This can be determined by deciding the values it wishes to promote. Market research may show that customers require more flexibility and so the options for offering this will need to be explored, e.g. links with other providers, flexible working patterns, peripatetic staff etc. The type and method of service delivery should be researched. It is presumptuous to assume that customers value high volume at low cost, as quality or accessibility may be perceived as preferable to price.
To ensure the desired values are created, staff must be clearly informed of what those values are. All staff (not just those in patient contact) need to be aware of them, as the provision of relevant services is the objective of the corporate Trust. All communications should reflect these values. This acts as a reminder and will consistently reinforce to the staff who will convey those values.

Communicating the values occurs in three major ways: the product or service, the systems, and the people. All marketing strategies must address these three systems. In service terms, the care delivered must communicate the desired values, e.g. speed of delivery, desired quality, desired level of integration etc. The systems involved in communication are those administrative, clerical and environmental processes through which the patients pass in the course of their treatment. As the service is delivered at the point of production (in contrast to an organisation producing physical products) the hospital buildings themselves are a communicator of values. The people are of particular importance as in health care, with its labour intensive nature, it is the staff which play a key role in communicating (or not) the Trust’s values.

The delivery of services to meet customer values must be proven by monitoring and evaluation, through reliable and valid outcome measures. Although the latter may be difficult to define, they should be pursued. In addition, the Trust should attempt to measure overall customer satisfaction.

PROVISION OF SERVICES IN A COMPETITIVE ENVIRONMENT

Successful competition is about knowing the nature of the market, defining which values are most sought by customers and providing services which reflect them. As the situation is dynamic, these aims can only be achieved if the Trust is receptive to change and innovation, and creates conditions to allow flexibility in its deployment of resources.
5.0 MAJOR INFLUENCES ON MARKETING STRATEGIES

5.1 A large number of influences arise from the market system to which the organisation must respond in order to shift its customer base and in order to ensure future viability. Among the most important are the following.

(ii) The nature of the services. This is because different services require different levels of trained staff, levels of capital investment and resources.

(ii) The internal market was only introduced to the NHS in 1991 and it is therefore still relatively unsophisticated. It has passed the initial launch stage, when information systems and knowledge were poor. In terms of product life cycle analysis, the range of services can be seen at the growth stage, as values have been more widely disseminated. However, in certain fields e.g. rehabilitation and long stay care, there has been a rapid increase in activity from private sector competitors. A successful Trust will respond to this stimulus by committing more resources to the identification of those values which are held in high regard by purchasers, and to ensuring that individual service delivers those values, thereby breaking the historic non-customer orientated approach of medicine and associated professions, in which staff delivered what they thought best but without due consideration of what the customer wanted.

(iii) Similarly, G.Ps are now entering the market as fund holders and they will also become very highly discerning purchasers who will buy an increasingly large volume of care. In order to win this business it is important to carry out customer analysis as detailed earlier in this document. They will be a very different type of purchaser from the Health Authorities, and may have different values to be satisfied, e.g. some GPs prefer a responsive service rather than a cheap one. To convince these new purchasers to buy a particular Trust's services it is necessary to differentiate the product from other Trusts' products, e.g. by making it a low cost alternative, or high quality, or integrated etc. Additionally, and key to satisfying GP's values, is the
completion of a suitable database, as this will be required to segment the market, in order to identify better the more individual needs of the customer. It is highly likely that, due to the personal care a GP often offers to his or her patient, the type of contract that GPs will demand will be far more patient-need orientated.

5.2 Market research at present is a very under-developed resource in the NHS and there is an urgent need to develop more knowledge about the customer. As the database is collected on patients and their outcomes of care, so is there is need to gain feedback on their likes and dislikes. The poverty of market research in the NHS will be overcome in the next few years, as methods already extensively developed by insurance companies and private healthcare in the USA become deployed here in the UK.

5.3 Another major influence has been the introduction of legislation which identifies specific targets relating to customer service, as outlined in the Patient's Charter. In overall terms each Trust must respond to this by adopting a customer orientated approach. There are requirements to increase internal efficiencies in terms of increased output in order to reduce waiting lists, but the major thrust is to take into consideration the values of the patient and to improve communications with the patient, ensuring that the organisation's values are made known so that the exchange process is two-way, i.e. the patient is satisfied as well as the service provider. This is a fundamental cultural shift for health care organisations, who historically have adopted a production orientation (Doyle 1987).

6.0 PLANNING, MEETING THE NEEDS OF THE MARKET

6.1 As the Trust must be self sufficient in all its activities, there is a need to establish a structured strategic marketing planning system. Planning activity should focus managers from various functions on information gaps and on the need for direct service delivery and support functions, in order to produce an integrated effort. Channon (1986) states that if consumer needs are to be met then service changes must provide a good "fit" with the changing market system.

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6.2 Future influences: In the longer term, as a customer needs orientation increases in Trusts, organisational structures will need to change in order to reflect that orientation. Thus functions such as corporate planning, whose duties include the identification of customer values, the planning of their creation and the monitoring of the service to ensure their delivery, will assume a greater importance vis à vis service production functions, and therefore structures will be modified to reflect this.

6.3 Demands will change, from both the patient and also the GPs. Patients' increasing awareness and expectations will have an upward pressure on service quality. GPs are likely to impact in terms of the quality, speed and nature of the service, e.g. the increase of integrated, so called "one stop shop" services. The private health sector, although stable in the acute sector, will show significant growth in the long stay sector due to recent legislative changes and initiatives to encourage the sub-contracting of such care to the private sector with the public sector acting as commissioning agent, not provider.

7.0 CONCLUSIONS

7.1 Although it is still early days for the internal competitive market, to be a successful Trust in the NHS it is important for the Board to develop a clear marketing strategy, i.e. services must be designed to deliver values identified from market analysis and, where possible, should be differentiated from other Trust's products to win contracts through the creation of a unique selling proposition.

7.2 It is also necessary to construct a database of the values, characteristics and needs of customers, and of the characteristics and intentions of competitors, to enable market segmentation.

7.3 Foster an integrated approach internally to respond better to customer values, by defining a stated mission and goals, with clear and explicit values of patient care.
7.4 In order to survive successfully, the Trust must maintain a strategic marketing plan to determine the best portfolio of services, given the external and internal factors impacting on the Trust.

7.5 Having considered a marketing strategy in theory, the remainder of this work considers the application of these theoretical concepts in a practical situation which took the form of a marketing strategy for an NHS Trust as applied to a Rehabilitation Service.

7.6 The outcome of the market strategy for the Rehabilitation Services for the NHS Trust was that the purchasers postponed the awarding of the contract for rehabilitation until more information had been collected. The purchasers requested a seminar and discussions with the author, regarding the document's contents, and subsequently used the document for assisting their specifications for all future contracts in the area of rehabilitation. The Trust has now requested further assistance in identifying who are the consumers and what are their needs, and a full market research project has been set up in conjunction with the development of the database (being funded jointly and developed jointly with the purchasers).

7.7 Developing out of the recommendations of the document with regard to the need to establish overall customer satisfaction, the research conducted for the next unit of this portfolio was requested by another NHS Trust.

---oooOooo---
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MARKETING DOCUMENT FOR THE PREPARATION OF
THE TENDER FOR REHABILITATION SERVICES
Hounslow and Spelthorne Community
and Mental Health Trust

AUGUST 1994

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PART ONE: THE "STATE OF THE ART" REHABILITATION SERVICE:

The first step is to define the product and boundaries of the market. For most products, definition is mainly in terms of a discrete list of physical properties, but as rehabilitation is a service the definition is more problematical, since the product has perceived as well as physical values. In addition, as there are several models of care, the definition may be less definitive, and more conceptual.

1.0 DEFINITION OF REHABILITATION

Rehabilitation is a problem-solving and educational process aimed at reducing the disability and handicap experienced by someone as a result of a disease, within the limitations imposed both by available resources and the underlying disease. In health terms it is the management of a neurological disability and thus is not defined necessarily by the improvement of a condition.

1.1 MEASUREMENT

Neurological rehabilitation has made little progress over the last few decades, partly due to the complete lack of agreed methods of measurement (Wade, 1992). One way to improve this situation is to generate information from systematic, detailed observations using well tested measures.

1.2 MODELS FOR REHABILITATION

The World Health Organisation defines a model of illness including the concepts of pathology, impairment, disability and handicap. These concepts have utility in clinical practice from which a classification can be developed. An illness model is not however acceptable to the disabled, who have fought long and hard to be seen otherwise.
In contrast, consumers and many non-medical experts state that a successful rehabilitation process should be defined in terms of an education and training model which removes the emphasis from acute medical care and places it on patients' ability to manage as independently as possible.

The model adopted is important in shaping the vision and mission of the service both for the staff and the consumer. There is often conflict if this is not resolved at an early stage of the development of the service. Centres of excellence providing community outreach services which are client centred have mostly adopted an educational/training model, as have many private establishments.

A clear consideration of the appropriate model must be made, together with associated ramifications, e.g. consumers are no longer perceived as patients. Once this decision is made, it should be openly acknowledged and stated in all policy documents as the method of service delivery.

1.3 COMMUNITY REHABILITATION

The purpose of rehabilitation is to return a patient to his own chosen environment, usually his own home, and therefore the ideal is for all rehabilitation interventions to be carried out at home. There are however several drawbacks to this. For example, it is more cost effective for expert staff to be focused in one place, where they can see more people, exchange views with other disciplines and use specific equipment available. On the other hand it may be more effective for that patient to be treated in situ for the specific problem, since most patients with disability spend most of their time at home.

Having defined the product in general terms, it is then required to identify the values which customers consider most desirable. However, partially due to the intangible nature of some of the values, but mostly due to the immaturity of the market, purchasers are not currently sufficiently informed to express definite opinions. As analysis of the external marketing environment does however include other elements, such as competitors who are providing a service much in demand i.e. providers considered to be "centres of excellence", desired
values can nonetheless be identified. Section 1.4 illustrates the values to be created in terms of rehabilitation services processes.

1.4 COMPONENTS OF A SERVICE

The state of the art service must in terms of process have the following components:

* Assessment - The identification and measurement of problems
* Planning - Analysing the problems and setting goals
* Treatment - Intervention to reduce disability and handicap
* Care - Intervention to alleviate consequences of disability
* Evaluation - Measuring and monitoring the effectiveness of any intervention.

All of the above should take place in a suitable environment, whether that be in the home, the rehabilitation unit or in the occupational work place.

Next is the consideration of the communication of values. In the case of this market and its specific characteristics, communication methods are heavily tailored to fit the circumstances. As this is a specialist area, and realistically there are only a very small number of actual or potential customers, communication is most akin to those used in marketing processes for large organisational/industrial situations i.e. communication is individual, one-to-one between provider and potential customer, and given the bureaucratic nature of the NHS is by documentation as well as verbal means; hence the production of this document which is serving as the basis of contractual negotiations.

The delivery of values is the final and most important part of the process, if the Trust is to compete effectively. This is achieved via the optimum channels of distribution which translate in NHS market terms into an efficient organisational and physical structure, together
with appropriate systems and staffing.

1.5 ORGANISATION

Important factors in terms of the organisation of available state of the art service, which are considered in the literature and by experts in the field to be necessary, should include:

1. A local and easily accessed service. In practice, this means within five miles for most disabled, with transport assistance. For the less disabled, it is within ten miles.

2. Rehabilitation to commence in normal circumstances within twenty-four to forty-eight hours of injury or illness.

3. A multidisciplinary team to make a comprehensive assessment which should lead to rehabilitation. This should include a treatment plan and jointly agreed (where possible with the patient) treatment goals.

4. Decision making should be shared with the patient, carer and staff throughout the period of rehabilitation. Care should be client centred, with the focus on independence and community support. The mission statements and guidelines of the service must include six principles: CHOICE, CONSULTATION, INFORMATION, PARTICIPATION, RECOGNITION AND AUTONOMY for clients receiving services.

5. Identified treatment goals with dates for achievement and where possible a definite date to move back into the community.

6. A seamless service, i.e. the same team of people working with the patient throughout the rehabilitation process, from hospital via rehabilitation unit and return to home. This should continue until the rehabilitation service is no longer required. Further continuity can be offered by identifying a primary nurse/key worker.
7. The team composition would include:

Physiotherapists, occupational therapists and speech therapists. Other staff should be recruited according to range of specialist skills required, e.g. art therapist, music therapist, bearing in mind that disabled people learn the most from other disabled people. Nurse specialists and community support nurses with a special interest in disability would make up the rest of the team. A part-time consultant (rehabilitation/neurologist) would be needed, together with access to disability councillors or a clinical psychologist with an interest in neurology/challenging behaviours and disability.

Nurses would have a specialist support service to facilitate weekend leave, both to assess and monitor adaptation to the home environment and the behaviour of the patient.

8. The service could offer regular health reviews with the multidisciplinary team by direct patient/carer request (self referral).

9. Information services should be available on site to inform carers and consumers. This could be augmented by providing office facilities and information stands for use by charities and self help organisations (e.g. Headway, Disabled Living Foundation, Radar), to allow direct contact with other relevant agencies. The information would cover:

- Employment and training schemes eg. Remploy
- Further education opportunities
- Transport
- Respite care and alternatives
- Home care relief
- Social services
- Care attendant schemes
- Co-ordination of other domiciliary services
- Charities and self help/advocacy groups
Mobility allowance and other benefits

Charities and organisations should be encouraged to use the facilities for meetings and for fund raising.

10. Staff should be peripatetic, with offices on site for daily therapy and meetings, but afternoons should be set aside for home visits and community visits. The focus for therapy to be on site in the morning.

11. The multidisciplinary service should meet twice a week. Case conferences and Individual Programme Planning meetings should be an integral part of the service delivery.

12. Multidisciplinary notes should be shared and measurement focused, and should be used to form a database of outcome variables for use in the audit of the service.

13. Transport. This is the most limiting factor for all disabled, as well as being very costly to provide. Patients do not wish to be moved in a large bus with a logo or title of the handicap; one large capacity van limits flexibility and this does not meet individual needs. Many patients require drivers for their own cars, or adaptations to their own cars.

14. Transport must be available, to be booked by staff or patients, with the main aim to escort patients to and from the unit in the morning, but when possible to take patients in the afternoons to other facilities, e.g. Disabled Living Foundation, Harrow Road. Transport should be small, non-identifiable as health service, with drivers available. A volunteer driver scheme set up by a charity should be investigated.

15. Where possible disabled people should be employed in this unit, especially for all clerical posts. Clauses in the relevant employment legislation (positive discrimination) should be exploited.
16. Case load and case load mix should be monitored to prevent staff overload and burn out. Cases often need maintenance despite no further improvement from treatment being offered. This should be addressed via unit policies and staff appraisals.

17. The high risks for patients have been identified, which include:

* The first two weeks on returning home from hospital. A guarantee should be offered of a daily home visit from a team member for the first two weeks on returning home.

* Boredom and loneliness.

* Elderly patients who do not participate in a full therapy program.

* Young patients, who are finishing school and require occupational guidance and personal independence.

The service should address these issues in particular, as a priority.

18. The range of extended services could include group and individual work with art therapist, music therapist, sports therapist etc, visits to the community, shopping, preparing meals, and outings arranged in conjunction with volunteers and charity groups.

19. This service must have access to other health specialties:

* Urology
* Stoma care
* Psychiatry
* Neurologist
* Dietetics
* Social work
20. Equipment may be assisted by the use of electronic and computer assisted systems. There is a focused need of patients to have this expertise available to the unit. A specialist technician who can assist with wheel chairs, artificial limbs and build custom-made equipment would be a unique selling point and potential income generator for the service. This might be considered worth purchasing on a part-time basis, and might be shared with the main hospital or with one of the local charities. Links could be made with artificial limb services and other prosthetic specialists.

21. The mission statement, guidelines and policies should bear in mind the educational and training model, and the belief system behind how high quality services should be delivered. These organisational procedures should be written by a service committee which contains service users or their carers.

22. A service development/management team which includes a disabled citizen/carer, needs to develop the following policies and protocols:

- Multidisciplinary team membership and management
- Organisation of the service
- Criteria for receiving service
- Assessment formats and measurements
- Decision making and goal identification with carers and patients
- Relationships with carers and clients
- Continuous quality improvement and audit measurement.
- Avoidance of pressure sores
- Management of incontinence
- Management of swallowing
- Nutrition
- Management of behavioural problems
- The use of transport
- When to refer to Regional Unit
- Liaison with other services
A resuscitation policy
Primary and secondary prevention
Prevention of crisis admissions.

23. Criteria for rehabilitation should be as broad as possible providing that the person is gaining some benefit from at least one form of therapy. A small local unit could not afford to be specialist, but particular specialist needs should be referred on to Regional Specialist service.


1.6 PHYSICAL STRUCTURE OF THE UNIT

As much of the service as possible should be on ground level. Staff offices can be open plan with some single offices which can be used for individual therapy (by a booking arrangement); all must be accessible by lift if placed on the first floor. One large therapy room/gym where a number of patients can be seen at the same time is helpful. Patients are encouraged by modelling and observation, and also more can be seen by fewer staff.

A large entertainment room with equipment and refectory should be available, with adjoining information booths and charity offices.

Facilities for toilets, baths and showers would need to have room for training and support staff assistance. All would need to have ground floor access.

Outside access will need to be ground level to manage wheelchairs and walking frames. There should be as wide an area as possible in front of the main entrance, to facilitate easy access when delivering patients. Staff and visitor parking should be set back from the entrance to the unit.

Residential accommodation should be as flexible as possible, to anticipate possible changes in future care packages. Until actual need is clarified, self contained flats will be the most cost-effective method of accommodation by reducing costs of hotel and domestic services.
Two to four, four-bedded, self-contained flats should be provided, for training in independent living facilities, pre-discharge. These could be built at ground floor level, adjoining the large lounge and refectory, to facilitate integration. There should be one flat for younger people and others for an older population; these groups are unlikely to mix and their needs will be different in terms of sleep patterns and activities.
PART TWO : QUALITY MEASURES IN REHABILITATION SERVICES

Service industries have particular problems in achieving the measurement of the delivery of desired values. Clearly, in the case of physical products, consumers have the ability to judge the product by physical, functional criteria. In services, however, where values are less tangible e.g. a relative improvement in a feeling of well-being, the critical yardstick is measures of perceived quality. A significant consideration of quality measures is thus required.

2.0 COMPREHENSIVE QUALITY procedures for this service will fall into four categories:

* Continuing Quality Improvement
* Audit and Output Measures
* Staff and Environmental Evaluation
* Customer Satisfaction and Feedback

2.1 CONTINUING QUALITY IMPROVEMENT

The most up to date approach to quality is contained in the Serial V development from Total Quality Management, which combines the process of quality improvement with the setting of outcome measures. It is currently being discussed by the Department of Health and is likely to be part of a new initiative to be announced shortly.

The method uses outcome measures to identify variations in care and to determine corrective actions which may minimize them, by using a process of improvement which breaks down the components of a specific process of health delivery and identifies problem areas in the process. It then rebuilds the process, with changes and outcome measures specifically designed to record the change. Continual improvement involves pinpointing a particular area for improvement, proposing specific changes, testing the changes and evaluating the success.
Serial V is a tool which facilitates a merger of clinical outcome measures with system improvement.

Batalden (1994) states that, while measurement of outcomes is important, in or of itself it does not improve the results of care. Improvement in outcomes requires that action be taken in the patient care process, and this must be based on understanding of the complete system of causation and the underlying processes. Results produced by complex systems can be improved predictably only by understanding how each major process in the system affects the results and continually improves each process.

The strategy would be as follows:

Basic process flowchart ——— Detailed process flowchart ———

Identify/re-work errors ——— Redesign process.

The above process would take place with managers and staff who are personally responsible for the clinical service. Such a quality system would require an organisational policy that includes a clearly understood mission, vision, a set of guiding principles for delivery of the service and a quality definition. A final aspect of this method is that basic tools must be introduced which will help people to think differently about the quality of the service and also work more effectively.

The first step of the improvement is to state the aim of the improvement work and identify the criteria and measures to determine whether change will actually bring an improvement. After joint consideration, the identified improvement which is most likely to be effective and practical is pilot tested. The change is undertaken before and after data is gathered and results studied, and if improvement is achieved the change in performance is consolidated into the system. Thus begins a never-ending improvement cycle into a daily work process.

This method of quality improvement is a superior method to others that are available. Its advantages are:

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It encourages all staff to be involved and participate in quality.
It works for any level of staff, senior and junior, professional, technical and hotel management.
It takes suggestions from the whole work force that is offering a service, i.e. hotel estate and clinical services.
It analyses complex systems simply for all to understand.
It avoids the blaming and naming which can be demotivating for staff.
It can circumvent the belief that many statistics which staff record are irrelevant.

Sterman (1989) asserts that the value of outcome measures for people seeking to optimize a system is inversely related to the complexity of the system that produces the outcome. When the system of causation is simple, outcomes can lead directly to pinpointing root causes that could be changed to make an improvement. When the causal system is complex, outcomes feedback will have much lower value because the causal system is opaque to the potential change agents.

This system would require a co-ordinator familiar and conversant with the methods of facilitation, flow charting and leading groups. (See Appendix 2)

2.2 OUTCOME MEASURES

Selecting outcome measures is a difficult scientific task; it is not a matter of picking out questions that need to be answered. These measures may be nominal, ordinal, interval, and ratio, and the factor dictating the choice of measure is that it should be relevant and sensible, and provide the information wanted.

Measurement is the quantification of an observation against a standard; it is not assessment and therefore no interpretation of data is necessary. When choosing the measure, the most important consideration is why the measure is being used and the major reasons for undertaking measurement are to establish diagnosis, prognosis, severity and outcome.

At present there are no available standard global measurements in rehabilitation (Wade 1994).
Any measures that are used will have to meet two criteria: Reliability (more than one person will use the measure in the same way) and Validity (is the measure really measuring what it says it is?).

Sensitivity is also important, and refers to whether the measure can detect the change expected.

Measures need to reflect the input provided. In practice, the value of collecting this information could be questioned, especially given the resources needed simply to collect the data, e.g. there is little evidence that the frequency and/or duration of patient contact is necessarily related to patient benefit (Wade et al 1984).

What is needed for audit are short, simple measures which are applicable to the broad generality of patients going through the service. A logical, consistent system of classification would aid the construction and selection of measures. To date each discipline will have a range of specific tests that it may use, for example, occupational therapists may use one of the many ADL (Activities of Daily Living) surveys, e.g. Barthel. Physiotherapists may use one of the many mobility assessments, e.g. Functional Ambulation Categories (FAC), or the Rivermead Mobility Index, and speech therapists may use one of the many communication assessments for aphasia. It is likely that they will always wish to continue using their own profession's measurements.

It is probable that to find a reliable outcome measure for global change will be difficult. A review of the literature suggests that such a system has not yet been developed. The classification of impairment, disability and handicap is difficult for various reasons, in particular impairment measures available are often specific to a particular pathology. However Wade recommends the six WHO categories as no better categorization is known:

Physical independence, mobility, orientation, social integration, occupation, and economic self-sufficiency.

The ICIDH model has given these variables a scaling system for each ranging from 0-8 (for the most severe). This assessment measures change in patient over treatment time, and
focuses on handicap and global disability.

For overall global measures of disability, the simplest, least disease-specific and focused scales are the OPCS (Office of Population Censuses and Surveys) disability scales (Wade, 1992). They are a coherent attempt to assess all disabilities, and in addition the scales have been weighted so that different disabilities can be compared.

To date the Functional Limitations Profile (FLP) has been designed to be a standard measure for recording outcome in rehabilitation centres. It is a global measure with twelve subsections to cover most of the main variables likely to have an impact on recovery from the disability.

Finally, the FAM (Functional Assessment Measure) or FIM (Functional Independance Measure) has been developed as a standard measure of disability for use in specialist rehabilitation centres within the U.S. Reliability has been tested for most subsections but not all. It may be used to compare service with service but is unlikely to be reliable in this context.

For use in assessing the disability needs of the population, Martin et al (1988) have developed a validated and field-tested postal questionnaire, OPCS, which would be helpful for establishing the prevalence and needs of the disabled population.

Most of these measures are reviewed and discussed further by McDowell and Newell (1987) and Wade (1992).

It is important to recognise that there are no national norms available on outcome measures for this type of service. There are no current measures available that include valid and reliable tests which predict outcome of treatment, neither are there likely to be; it is an impossible task. No one assessment will ever be comprehensive enough to assess the range of variables which may play a part in outcome. These variables include:

* activities of daily living
* behavioural measures
* communication skills (receptive and expressive ability)
* mobility skills
* motivational and mood changes
* perceptual, cognitive and memory skills
* many physical abilities.

Monitoring arrangements of outcome indicators:

i) Development and selection of outcome measures must be decided within the first year of service, by the clinicians and the purchasers.

ii) Review meetings between the purchaser and provider will be held quarterly to discuss performance and quality of care.

iii) The provider should inform purchaser of any significant trends in services at an early stage to allow discussion and action accordingly.

2.3 AUDIT MEASURES

Data collection for audit purposes should be made as easy as possible for staff, and therefore dedicated time should be made available in their work to complete this function. Furthermore, collection of such data is more likely to be reliable if it is made easy to follow and an integrated part of the treatment package for each patient, rather than a monthly chore of filling in meaningless statistics for each clinician. This could occur using Integrated Care Pathways as a data collection method, but service time should be allocated to allow this.

Audit measures could include:

* Type of patient: resident, day or outpatient.

* What services a patient has required: range and duration.

* Care components: assessment, diagnosis, I.P.P., discharge plan, other.
* Level of self help/care required (and monitor change over time).

* Hours of direct service time, per discipline and total.

* Use of transport.

* Use of other services.

* Use of primary care (range: G.P., district nurse, other)

* Attendance to other facilities: NHS and non-NHS.

* Monitoring time between referral, e.g. assessment, admission and discharge.

* Assessment of need within forty eight hours of referral.

* Transfer within five days of agreement to accept referral.

* Waiting period of three days for treatment.

* Multidisciplinary meeting within five days of transfer.

* Care plan available for each patient with discharge date.

* Destination of discharged patients.

* Readmission and reason.

* Complaints and serious incidents monitoring.

These are possible audit measures and this is not meant to be a comprehensive list.
All the above measures can be set up on a simple spreadsheet and collected on a patient basis daily or weekly. Feedback of collated results should be given to the clinicians on a regular and frequent basis, in order to encourage and reward staff for collection. Clinicians are interested in the unit and their performance, and this should be part of the Continuous Quality Improvement initiative.

The data collection and information should assist in the development of packages of care. The data should identify if there are different needs for different sub-groups of patients and so assist in the development of costing particular packages of care and also a weighting of costs against case-mix.

A dedicated staff member (not necessarily a clinician) may collect information for a spreadsheet configuration using nominal and ordinal measures, thus giving useful outcome measures in an aggregate database. These should be fed back, for regular and meaningful discussion.

2.4 STAFF AND ENVIRONMENTAL EVALUATION

i) Staff evaluation: All staff should have Key Result Areas defined with them by the service manager and professional supervisor; the K.R.A.s should include interpreting the goals of the service, with job descriptions and professional development into specific observable performances in the job. These goals should be reviewed on a six monthly basis (or more often during supervision) and changed according to service developments and professional needs and experience. An annual appraisal for all staff should take place. A yearly award should be considered for an outstanding member of staff, which is defined by the service consumers.

ii) Environmental evaluation: An independent assessment and report on the Quality of Life and environmental conditions should be sought every two/three years. Such evaluations could include the use of the Programme Analysis of Service Systems (PASS), or the Moos scale of environments.
2.5 CUSTOMER SATISFACTION AND COMPLAINTS

A feedback system should be set up to enable service users and the carers to give information freely regarding their experiences at the unit. It is often misunderstood (as occurred in British Telecom) that an increase in complaints does not necessarily mean a deterioration in service. It can mean that the system of feedback is successful and is reaching out to consumers. Feedback cards, including an offer of a quality satisfaction interview, should accompany every discharge plan which is given to each patient. A dedicated staff member should be responsible for collating this information and feeding it into the Continuous Quality Improvement forum, and for relaying the results to service purchasers. The continuous quality improvement forum should be identified as the formal complaints system and a disabled person and/or carer must be an integrated member of the forum.

2.6 FURTHER COMMENTS:

While rehabilitation often focuses on the physical side of abilities, positive outcomes are often hampered by the psychological issues affecting patients, e.g. depression and motivation, and these are even more difficult to operationalise and measure.

There are a wide range of assessment tools being used and the Department of Health has established a committee that is currently studying the use of these assessments, in the hope of standardising some. The most popular assessments at present are Bartel and FAM, which are functional assessments but do not assess patients' psychological wellbeing. FAM is currently used at Northwick Parks Regional Unit. Purchasers may compare data across services, although it should be noted that such data is likely to be unreliable.

It is recommended that baseline data is collected over the first year while the outcome measures are developed and selected. Valid and reliable data for cross-service comparisons is not available. Should this be required, it would necessitate a researcher to review measures and run a pilot scheme across the two services.
PART THREE : NOTES FROM ACCOMPANYING REFERENCES

3.1 It should be resisted at all costs for the Rehabilitation service to come under acute medical care and management. This is not wanted or needed by the disabled and will increase overall costs.

3.2 Rehabilitation is not specific to nurses although they have a specialist and supportive role; the prime service deliverers are therapists. Special consideration may have to be given to recruitment of these - the form of perks and benefits or allowances may need careful thought.

3.3 Emergency respite should be prevented by the Rehabilitation team but when required options should be available including: home care support scheme into the home environment, short term breaks in the many private homes available for holidays, and the voluntary sector to be encouraged to develop these services. Health care should not be offering emergency respite, unless there is a serious medical condition which has never been managed in the home. Hospital admission may then be appropriate but where possible clients should be encouraged to organise, through the information service available, to have respite at the range of holiday homes available for the disabled.

3.4 The service should set itself a mission statement that reflects local community use. For any extraordinary or specialist requirements, the Regional Unit at Northwick Park should be used, e.g. for behavioural difficulties, or particular spinal injuries. The rehabilitation service should act as a liaison service for patients whose needs require that they go to regional or national centres for rehabilitation.

3.5 This service should fund a one year research post to assist primary care to identify people at risk of stroke. This project should include:

* the prevention of strokes
assist G.P indicate patients at risk

prevention of further strokes

lifestyle factors, and use of aspirin and carotid endarterectomies.

3.6 If residential accommodation is not required then bedroom space may be changed into either office accommodation or training and therapy rooms. A four-bedded flat could become a physiotherapy unit where treatment rooms are available, and the centre lounge a gymnasium.

3.7 It is important to meet with Social Services and discuss the range of services they have available to assist home-based care. If rehabilitation services are set up in Hounslow and Spelthorne then there will be a benefit to Social Services i.e. less use of O.T. in home assessments and home aids. A quid pro quo basis should be established.

3.8 Within the rehabilitation service, a package of stroke rehabilitation care may be available. This should be costed so that it covers all extras available. Unit cost of stroke rehabilitation may need to be the highest that the market will take (as compared to Northwick Park) in order to maintain the full range of services for others.

3.9 If the unit offers day care, it will need to transport people in and out everyday and offer meals at lunchtime. If it offers just outpatient appointments overheads will be less.

3.10 Access to a hydrotherapy pool or swimming pool may be important for treatment. This may be negotiated with local leisure facilities.
4.1 The evidence so far would recommend a small, local, generalised rehabilitation service to meet the short and medium term rehabilitation needs of the local population, sited at the West Middlesex which has excellent accessibility already, including bus routes and ambulances.

4.2 This service would offer local support and assistance immediately after acute care finishes and through the peripatetic service it would assist in making a seamless and comprehensive service for patients discharged from acute medical care and preparing to move home. The service would offer the same team of staff throughout, and continue maintenance with follow-up health checks at the patient's request.

4.3 The Middlesex site would also benefit a seamless service after the acute medical care is complete, by actual proximity. Furthermore, it offers the continued assistance of further specialist care on the hospital site, if required.

4.4 There is an urgent requirement to establish what the size and nature of the need for the service is. This could be carried out using the OPCS by postal questionnaire, together with a detailed study of the demographics.

4.5 The rehabilitation service should not offer any acute medical care but should focus purely on rehabilitation until such time as a clearly identified need for acute beds may be established. This may reflect in requiring a part-time consultant initially, and reducing the large medical overheads that a consultant will bring. The service would also offer specialist referral from G.P.s to a rehabilitation, multidisciplinary team.

4.6 The service could offer quick access for G.P.s to specialist nursing support services including stoma and urinary care, pressure sores and prevention.

4.7 A research post should be funded. Two aspects of research could be covered by two part-time posts:
i) A nurse specialist could address, in the primary setting, stroke prevention with G.Ps.

ii) A second part-time post could analyse the quality data with a view to developing packages of care.

4.8 The primary staff in this service are the therapists, who are difficult to recruit. Conditions of service should be studied carefully in order to offer attractive employment packages.

4.9 Where possible, disabled people should be recruited to work in this unit and the Employment Act should be used to facilitate this.

4.10 Continuous Quality Improvement should be the organisational method of managing quality in the service. This method is a functional and practical process of quality management and is highly recommended by industry. It combines immediate outcome measures with direct service changes, and at the same time all staff are responsible for the ownership of quality. Consumer feedback may be integrated into this system.

4.11 Outcome measures that will cover the heterogeneous group of patients receiving treatment at the unit will by necessity have to be extremely global. However, validity and reliability checks will have to be performed in the first year of the service.

4.12 It is suggested that a new service be allowed one year to collect audit baseline data for an aggregated database.

4.13 Staff appraisals and service evaluation should occur regularly. An independent service evaluation should be requested every three to four years. A service evaluation should include an assessment of the environment, staff and delivery of service.

4.14 Customer surveys should be carried out on a finished treatment episode and at six months following service completion or on a yearly basis if ongoing. This may be done by post.
Many thanks to the following experts for their time and advice:

Peter Wilcox: Committee advising the Department of Health on Quality.

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Mike Floydd: Rehabilitation Resource Centre, City of London University.

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SECTION FOUR: Research Audit

Study One: The use of instructional set and type face factors in determining chronic psychiatric patients' performance on a printing task assessment.

(A thesis submitted to the University of Manchester in partial fulfilment of the Degree of M.Sc. in Clinical Psychology in the Department of Psychiatry in the Faculty of Medicine. August 1978.)

Study Two: Patient Satisfaction: A quality evaluation of an outpatients' department in a General Hospital setting.
THE USE OF INSTRUCTIONAL SET AND TYPE FACE FACTORS
IN DETERMINING CHRONIC PSYCHIATRIC PATIENTS'
PERFORMANCE ON A PRINTING TASK ASSESSMENT

A thesis submitted to the University of Manchester in partial
fulfilment for the Degree of M.Sc. in Clinical Psychology
in the Department of Psychiatry in the Faculty of Medicine.
August 1978

BY HELEN NIGHTINGALE, B.A. MOD.,
TRINITY COLLEGE, DUBLIN
A printing task was designed to assess the psychomotor performance of chronic psychiatric patients undergoing rehabilitation. The two factors investigated were Instructional Set and Type Face. Instructional set had three levels of increasing demand in terms of speed and accuracy. There were two levels of type face: upper and lower. Measures were taken of performance speed and errors made on the printing format. Also examined were age and chronicity. Results showed that instructional set did not affect absolute speed of performance. However, looking at transformed data, certain aspects of the task were sensitive to the demand of instructions. Data transformation also indicated type face to be an important determinant of performance on certain aspects of the task. No effect was found of either of the two independent factors on errors. Chronicity and age were both found to affect performance speeds. In the context of developing an objective assessment procedure, these results will be important.
ACKNOWLEDGEMENTS

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Section 4: Study 1
1.1 General Purpose of Study.

Prediction of outcome of treatment and rehabilitation of chronic patients has now gained substantial attention in the literature. This is particularly due to the large increase in the number of rehabilitation centres and recent changes in day hospital structure of psychiatric units. However, it is evident that the various facilities provided for the chronic patient should not be thought of as providing just a training or therapy, but as providing a sheltered way of life and that the employment provided should be described as sheltered employment.

Occupational therapists working with psychologists have played an important role in the organization of skilled training programmes for these chronic patients. This in turn has led to the absolute need for assessment of progress in these patients. It is in this area that psychologists are now applying their knowledge of assessment procedures with two main aims:

(i) To aid and guide the design of rehabilitation programmes.

(ii) To assess the progress and outcome following completion of any skilled training programme.

This piece of research was specifically aimed at assessing the function of different task parameters such that it would lead onto
producing part of a formal standard assessment procedure for a particular chronic psychiatric population at present involved in specific token economy rehabilitation procedures in the Day Hospital Psychiatric Unit at Withington Hospital. The aim was to produce a procedure which assesses performance on a composite task which yields objective data in such a way that it may be administered and interpreted by any member of the Occupational Therapy department. The procedure was developed in the form of a printing task, an important adjunct to rehabilitation used in the Occupational Therapy Unit. This printing task will be one of a number of assessment procedures designed to evaluate the effectiveness of the token economy programme mentioned.

1.2 The Need for an Objective Assessment Regime.

Glaister (1970) has developed a systematic assessment procedure for chronic psychiatric patients, GTAB III. This does not seem appropriate to the present needs in assigning rehabilitation programmes and assessing progress. Glaister's procedure is orientated to predict work and later employment outcome, rather than the immediate progress of the subject. Therefore, the emphasis on the present test procedure is predicting useful information on a composite task bearing a close relationship to "occupational" situations encountered on a day to day basis on the rehabilitation programme.

A literature research shows that this more applied method of assessment, i.e. measures of specific aspects of functioning, appear to be more useful than tests of general intelligence. A number of studies have demonstrated that aspects of psychomotor functioning are useful predictions
of outcome in chronic patients (Robertson, 1962; Burstein, Soloff and Mitchell, 1968). Griffiths says that detailed and standardized assessments of work ability and behaviour in rehabilitation workshops are probably more useful than the single and general measures which are at present provided by cognitive tests. Similar conclusions have been found by Williams, 1958; Cheadle et al, 1967; Soloff et al, 1968. One recent development involves the construction of assessment instruments which include realistic samples of work measured under standard conditions (Institute for the Crippled and Disabled, 1967).

1.3 Literature Research: Present Status and Needs.

In the bulk of the literature researched for this dissertation few papers, if any, referred to ongoing assessment techniques used as pre-post testing during rehabilitation. The majority of publications are of designs to assess or predict outcome of rehabilitation instead. The majority of writers conclude that there is a strong need for the type of assessment technique designed in this present research. Hempel and Fleishman (1954) were probably the first to study and analyse psychomotor abilities of chronic patients. They performed a factor analysis on a number of dexterity tasks.

Brooks and Weaver (1962) were the first to design a psychomotor test battery for chronic patients in order to predict successful candidates for psychiatric rehabilitation. Further extentions of their work by Burstein, Soloff and Mitchell (1967 and 1968) have shown this to be a powerful predictor. Up to recently the interview has been the most prevalent selection method for these patients entering rehabilitation.

these multiple deficits aims and treatments can be rationally determined for each individual. Combinations of organic, psychological, social and industrial treatments are initiated in order to reduce the handicaps and promote the return of the patient to the community.

Cronback and Gleser (1965) found predictive factors for rehabilitation to be in order of importance: working conditions and rewards; methods of work and vocational training; work place design and career suitability and personal selection. This emphasises the need to look at both biographical and environmental systems, including the biographical features of the individual and the organization in which he works. Cronback et al suggest that these two systems interact at the point where the individual has a job in the organization. Zimmerman, Stuckey, Garlick and Millar (1969) emphasise the importance of a reward system for patients who have entered into a rehabilitation programme. Their research found that token economy reinforcement showed higher work rates than non-reinforcement and that work production decreased when reinforcement was removed.

From the above research stated we may conclude that environmental conditions for the group of psychiatric patients we have selected should be rewarding.

4 Study Setting.

The task was designed for use in the Occupational Therapy department which operates in the Psychiatric Unit of Withington Hospital. This is an acute psychiatric unit which has now a problem of rapidly increasing numbers of long term patients. At present rehabilitation procedures
schemes (Meehl and Rosen, 1955). Meehl reviewed clinical versus statistical methods engaged in subject selection areas of occupational psychology for work prediction. He found that the statistical method in all but one study was superior in predicting successful selection. Anderson, Knuce and Baxter (1962) in their study of maze scores and job performance in psychiatric patients state "The selection of appropriate activity assignments for psychiatric patients can be difficult. Therapeutic work activities are often made upon the basis of individuals expressed interests, his past work or current ability to carry out an assignment". This results in, as Glaister (1970) found, patients placed initially in work above their ability suffer frequent setbacks and that some patients, long employed in undemanding work, had been found capable of much more demanding work.

Griffiths (1977) found a number of studies which suggest that the value of cognitive testing in predicting the work success of psychiatric patients is rather limited. In many cases there has been a complete lack of relationship between test scores and concurrent or subsequent assessments of work behaviour (Patterson, 1962; Taylor, 1963). Griffiths states that results of studies of the value of cognitive measures in psychiatric patients must however be considered to be suggestive rather than conclusive.

Griffiths (1970) proposes that rehabilitation should normally be derived from a detailed assessment of the disabilities suffered by individual patients. These disabilities can be wide ranging. Griffiths observed significant variety of handicaps in his group of chronic patients; these included age, lack of work skills, lengthy unemployment, low intelligence and maladaptive attitudes. Griffiths says that on the basis of
appear to have had limited effect on reducing the numbers of long term psychiatric patients. Rehabilitation of these patients is an ongoing and ever increasing problem.

At present the occupational department run a token economy group every morning for patients in the Unit. These patients are young chronics or those who show immediate signs of chronicity, e.g. lack of self help, withdrawal from social communication, lack of social skills and lack of motivation. The selection criteria for subjects entering the token economy group is very broad. In general, patients who it is felt will benefit from attendance to this group or those who nothing further can be done for medically are requested to attend each day. Although young patients are sought for, there is no definite age limit; however there are no psychogeriatrics, and the age range is approximately eighteen to fifty five years. The group size is restricted by staff and room availability. The average size of the group is usually about eight to twelve patients.

The group has only two permanent staff, a senior occupational therapist and a psychologist, and there is no actual rehabilitation unit. Often the group must meet in whichever room is available. Therefore, the level of sophistication of programmes is at present very basic. The main aim is to increase the frequency of appropriate self initiated behaviour; self skills and self help. The patients have a committee meeting each week to decide what activities should be planned for the coming week on a group basis and on an individual basis. The advantage of a group of such a size is that the staff can run both group and individual programmes. Attention is paid to social and occupational skills. These include: perceptual and motor co-ordination; reading and literacy; communication and team-type operations.
Present assessment techniques are minimal but include the General Aptitude test battery so that levels of aptitude may be described. Also a domestic skills test has been developed to assess ability of patient to feed himself and maintain a kitchen. The usual occupational skills are concentrated upon and these include literacy, perceptual motor tasks, fine motor tasks, speed restriction, plan of action and ability to follow instructions. The latter topics include the sort of skills which are necessary in following a menial task.

1.5 Purpose of the Study.

The aim of the study was to evaluate the performance of a selected group of patients on a specific printing task. The evaluation was carried out on a dependent variable, performance speed, with respect to two sets of independent variables: levels of instructions and size of type. The main problem was to find out how these variables, level of instruction and size of type face, was going to alter performance on this task so that the results will discriminate between good and bad performance, and also discriminate whether the factors of instructional set and size of type are crucial with respect to performance. This study was aimed at providing information about the relation of psychological factors characteristic of the group and individuals on a task, in order that this information might be used to decide upon which of a certain type of task the patient was most suited for in an initial placement or rehabilitation programme. At present the Occupational Therapy department have several printing machines available. The task designed would be used as a pre-post test of skill and should give reliable information on (i) level of competence; (ii) change
or improvement following a therapeutic regime.

1.6 Framework of the Experiment.

The designed test took into account a number of factors observed in the literature.

Fleishman (1953) when testing for psychomotor abilities by means of apparatus tests found that functions such as perceptual motor co-ordination, smoothness of control movement, speed of discriminative reactions, appropriateness of control movements, responsiveness to kinesthetic cues, and motor control under stress conditions were examples of skills for which apparatus tests seem more suited than printed tests. Fleishman concluded that there had been little development in apparatus tests to assess these factors which a number of job specialities included as a sizeable component of motor activity. From Fleishman's assessment techniques the following motor skills dimensions emerged:

(i) Reaction time
(ii) Manual dexterity
(iii) Motivation.

Glaister (1970) states that there are consistent indicators that individual differences in reaction time are independent of whether the stimulus is auditory or visual and are also independent of the type of response which is required. With respect to the independent variable of motivation, it is an integral part of one of the theories comprising the theoretical framework of this research. The validity of the inverted
V-shaped relationship between arousal and performance has been assumed, for both speed and non-speed performance. Thus in the present piece of research this relationship should give low performance at low levels of motivation, high performance at medium levels of motivation and low performance at high levels of motivation. This is a principle capable of integrating many findings concerning speed (Payne, 1960) and learning (Gwynne Jones, 1960).

Glaister (1970) in his design for GWAB III found that some work tasks had sex and age biases largely due to concomitant ability and physical differences. He also found that lack of visual activity was widely blamed by subjects for poor performance, but in most cases observation by testers suggested that there was no visual defect. In the present research, age was expected to provide important sources of variance for some factors, discriminating both between individuals and between groups. However, sex biases were not inspected, and the sexes were randomly assigned to the groups. Townsend (1971) with a group of normals studied upper case and lower case alphabet confusion. He results concluded that recognition performance has more between letter variability, for both recognizability and confusion pairs for the lower case alphabet, than for upper case alphabet. This result indicates that clear differences should be expected between the letter type level used in the present research.

Hirt, Guttler and Genshaft (1977) looked at chronic schizophrenics' performance on motor perceptual and cognitive tasks of increasing complexity. Their results indicate that schizophrenics perform as well as non-schizophrenics on perceptual tasks that require little processing. However, as task complexity increased non-paranoid schizophrenics were the first to
reach a level of complexity, whose processing demands caused significant deterioration in their performance. It is hoped in the present research that level of instruction should discriminate different levels of performance in the groups. The instructional sets were expected to show a difference in response performance, whether improving or disrupting performance. It was hoped that these important discrimination variables would indicate which instructional sets bring about the greatest change in performance.

Griffiths (1972) stated that patients with a history of previous hospitalization required more time in treatment and rehabilitation. It was assumed in the present research that chronicity would be an important independent variable which would have significant effects on the dependent variables. Nevertheless, in concluding his research Griffiths (1977) states that work behaviours in general were unrelated to intelligence, personality, age and chronicity. He says, "In spite of reservations about the generality of the results, the data are consistent with evidence indicating low relationships between intelligence and work behaviour". This statement again emphasises the need for specific behavioural tests using apparatus rather than those of cognitive printed tests. Griffiths (1970) also found age to be unrelated to studied work behaviours. Jordan and Rabbit (1977) in a study of young versus old normal subjects on a perceptual response mapping task found that as task complexity increased so did the differences increase in performance between young and old. An age and task interaction was observed. The old subjects tended to be less able to extract critical features from the display than the young subjects. Jordan and Rabbit also found that after practise, older subjects were making fewer errors than the young, reversing earlier observations. The
relationship of human reaction time increasing in old age is a well-established one. Age was an independent variable in the present research.

Finally, King (1954) suggests psychomotor performance is an index of the degree of mental illness. He says that other rehabilitation literature suggests that this is so and suggests that social as distinct from other variables, account in part for residence inside of or outside of a psychiatric unit. King suggests that it would be interesting to utilize psychomotor scores as independent variables in the study of subsequent hospitalization of the chronic psychiatric patient. In this experiment psychomotor performance is a dependent variable of instructional set and type face.
1.7 HYPOTHESES

The following hypotheses were selected for this study based on previous research findings in perceptual and motor skills research on chronic psychiatric patients and normals.

(i) Hypothesis 1.

The level of instruction will be a crucial determinant of performance outcome in terms of both speed and accuracy.

(ii) Hypothesis 2.

Size of type face will significantly affect performance in terms of speed.

(iii) Hypothesis 3.

At more demanding levels of instruction, performance differences manifest by the size of type will be increased.
CHAPTER 2

METHODOLOGY

1 Statement of the Sources of Data.

The main data collection consisted of the 3 record cards for each subject. These cards contained all performance scores.

(i) CARD 1 contained timed recordings for each line of print set up.

(ii) CARD 2 contained experimenter's print out of the completed stamp. From this were recorded the errors.

(iii) CARD 3 contained subject's print out on the card as near to the centre of the card as possible.

Additional information included patients' age, length of hospitalization and number of admissions.

2 Experimental Design and Statistics.

A factorial design was used with two factors:

a) INSTRUCTIONAL SET (FACTOR 1)

b) SIZE OF TYPE FACE (FACTOR 2)

FACTOR 1. Instructional Set. Consisted of 3 levels:

LEVEL 1. "Work at your own speed but accurately".

LEVEL 2. "Work quickly and as accurately as you can".

LEVEL 3. "Work quickly but do not worry about odd mistake".
FACTOR 2. Size of Type Face. Consisted of 2 levels:

LEVEL 1. Capital letters.
LEVEL 2. Small type letters.

Analysis of Variance (2-by-3-way) was used to analyse the performance results of subjects.

With the printing task the five lines were designed as follows:

1. Line 1 and Line 5 were used as base speed times. Subjects were timed on placing 10 blanks per line. A blank was a piece of type of the same size without a raised type face.
2. Line 2 was a sequence from the alphabet - a → j - and this gave a performance time.
3. Line 3 and 4 were lines of a meaningful word or phrase and these gave 2 more performance times which were averaged for analysis.

The words used were:

Line 4 - a hospital
Line 5 - on tuesday

Analysis of Variance was then calculated on each of the 3 sets of data on times taken to complete each line (performance speed) and the errors made in doing so. Secondary to the above analyses 2 proportion scores were calculated for each subject. This was done to take base speed into account in looking at performance speed. The proportion score for Line 2 was the performance speed of Line 2 divided by the base speed. The proportion score for Lines 3 and 4 was their performance
speeds averaged and divided by the base speed. The 2 sets of proportion scores were then Anova analysed.

Finally all these data parameters were intercorrelated with the additional data of age and hospitalization, errors and error type.

2.3 Subject Selection.

Thirty six subjects were selected for the experiment. The subjects were found from two chronic psychiatric populations in attendance at Withington Psychiatric Unit, South Manchester, and at Springfield Hospitals Day Centre and their Industrial Therapy Unit in North Manchester.

Since a factorial design was devised to statistically evaluate the data, six subjects were allocated to each of the six experimental groups.

The following criteria defined their group allocation:

1. Age;
2. Length of hospitalization.

It had been intended to include a third criteria of medication. However, throughout the data collection period it was found that the maintenance of medication for these patients was not reliable.

(i) The Age criterion was split into two groups:

\[ A_1 < 35 \text{ years} \]
\[ A_2 > 35 \text{ years} < 50 \text{ years} \]
(ii) The length of hospitalization was split into 2 groups:

- $B_1$: more than 1 year and not more than 2 years
- $B_2$: more than 2 years

The subjects were then allocated to the cells in the design to balance the effects of age and length of hospitalization. Thus each cell, as far as was possible, contained a similar representation of Age and Hospitalization. Subject allocation to the cells of design can be seen in Appendix.

2.4 Scoring of Errors. (CARD 2).

The following types of errors were scored 1 unit for each occurrence:

1. Line error
2. Space error
3. Inversion
4. Substitution
5. Omission
6. Displacement

2.5 Definitions of Each Error Type.

1. Line Error.

This occurred if the subsequent first letter of each line 2, 3, 4 and 5 were not placed immediately under the first letter of the first line. In order for 1 unit of error to be recorded the indentation must equal the width of one letter space.
2. **Space Error.**

This scored 1 unit of error if a space of one letter was not left between words.

3. **Inversion.**

1 unit of error was scored for every reversal of a letter. Thus a letter would read as a mirror image when printed out.

4. **Substitution.**

1 unit of error was recorded for every incorrect letter placed in the print.

5. **Omission.**

1 unit of error was recorded for every omitted letter from the print out.

6. **Displacement.**

1 unit of error was recorded for every blank space of one letter which occurred in the print out, apart from spaces inbetween words.

**ERROR. SCORE CARD. (CARD 2).**

Each subject card was scored and the total number of errors calculated. Also calculated was the number of each type of error for
each subject.

2.6 The Assessment Procedure.

(1) The Test Material.

This consisted of a metal printing stamp 2" x 3" which contained 5 lines to hold print. Two boxes of print, capitals and small type, were used and each box was categorized so that the letters of the alphabet were separated and each compartment marked according to the letter. An ink pad was used for printing out.

There were 3 sets of instructions. (Appendix X) to be used by the experimenter and were read to the subject; (Appendix Y) - the Instructional Set - the appropriate set of instructions were selected for each subject:

A. "WORK AT YOUR OWN SPEED AND BE AS ACCURATE AS YOU CAN AND DO NOT MAKE ANY MISTAKES."
B. "TRY AND WORK AS QUICKLY AND AS ACCURATELY AS YOU CAN."
C. "WORK AS QUICKLY AS YOU CAN AND DO NOT WORRY ABOUT THE ODD MISTAKE."

Appendix Z - Instructions - were 5 cards each marked with the requirements for each line of print.
Procedure for Testing.

All patients were assessed in a quiet, well-lit room which contained a table and two chairs. The experimenter sat on the left hand side of the patient. Before commencing the patient was asked if he could see clearly and requested to wear his glasses for the test.

The box containing the categorized alphabet was placed in front of the subject with the printing stamp. The SUBJECT'S Instructions (Appendix X) were read to the subject and the experimenter showed the subject using the print how to place it in the stamp and print out the words 'THE CAT'. The experimenter demonstrated putting the stamp on the ink pad and then placing it on a white card so that it could be printed. Next the experimenter placed a printed card with the Instructional Set (Appendix Y) in front of the subject. The experimenter repeated the Instructional Set to the subject before each line was attempted. Then a card was placed in the subject's sight which contained the letters to print for the first line. This was read to the subject by the experimenter (Appendix Z). After each set of instructions the subject was asked if he had any questions and if he understood what to do. The experimenter then instructed the subject to start and the subject was timed until he finished each separate line. Each line was given a separate instruction printing card and the experimenter repeated the Instructional Set before starting the stop watch. When the setting up of the 5 lines of print was completed the subject was then instructed to print out the stamp on
a white card. The experimenter said "Place the stamp as near to the centre of the card as possible". Again the experimenter modelled to the subject the method of inking and in this way the experimenter also made her own copy of the print out which was used to score the errors in printing from.

(iii) **Recording the Data.**

3 recording cards were prepared for each subject consisting of:

**CARD 1**

The experimenter recorded each timed line:

Subject's Name. Line 1 10 BLANKS. Time Taken 360 secs.

- Line 2 A - J. 180 secs.
- Line 3 A HOSPITAL. 182 secs.
- Line 4 ON TUESDAY. 240 secs.
- Line 5 10 BLANKS. 280 secs.

**CARD 2**

Contained the experimenter's print out of the patient's completed stamp. From this were scored the errors.

**CARD 3**

On this card the patient printed out the stamp as near to the centre of the card as possible. This is to be used in a further piece of research not discussed in this project.
CHAPTER 3

RESULTS

3.1 Results were analysed to show how the measures discriminated between the factors. This was done by:

a) Analysis of Variance (Anova)

b) Pearson's Product Moment Correlation

The Anovas were to identify independently discriminating measures. In cases of significant results a Tukey test was employed to distinguish the relationship between the levels and each factor. The Pearson's Product Moment Correlation was used to distinguish any further relationships.

To demonstrate more clearly the results, Table 1 has been constructed. This shows the means for each variable. Table 2 shows the means for interaction between instruction and the type face for all variables.

3.2 Analysis of Variance.

Looking at the stated hypotheses in the order:

(i) The level of instruction will be a crucial determinant of performance outcome in terms of speed and accuracy.

(ii) Size of type face will significantly affect performance in terms of speed.

(iii) At more demanding level of instruction performance differences manifest by the size of type will be increased.
TABLE 1

<table>
<thead>
<tr>
<th>LEVEL OF INSTRUCTION</th>
<th>TYPE FACE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Own Speed and Accurate</td>
</tr>
<tr>
<td>LINE (1 + 5) BASE SPEED (SECS)</td>
<td>130.83</td>
</tr>
<tr>
<td>LINE 2 PERF. SPEED (SECS)</td>
<td>208.66</td>
</tr>
<tr>
<td>LINE 2 PROP. SPEED</td>
<td>1.70</td>
</tr>
<tr>
<td>LINE (3 + 4) PERF. SPEED (SECS)</td>
<td>192.91</td>
</tr>
<tr>
<td>LINE (3 + 4) PROP. SPEED</td>
<td>1.59</td>
</tr>
<tr>
<td>ERRORS (INVERSIONS) NUMBER</td>
<td>8.00</td>
</tr>
<tr>
<td>AGE (YEARS)</td>
<td>37.21</td>
</tr>
<tr>
<td>HOSPITALIZATION (YEARS)</td>
<td>5.50</td>
</tr>
<tr>
<td>Level of Instruction</td>
<td>Own Speed and Accurate UPPER TYPE</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>Line (1 + 5) Base Speed</td>
<td>118.00</td>
</tr>
<tr>
<td>Line 2 Perf. Speed</td>
<td>170.00</td>
</tr>
<tr>
<td>Line 2 Prop. Speed</td>
<td>1.64</td>
</tr>
<tr>
<td>Line (3 + 4) Perf. Speed</td>
<td>162.25</td>
</tr>
<tr>
<td>Line (3 + 4) Prop. Speed</td>
<td>1.35</td>
</tr>
<tr>
<td>Errors (Inversions)</td>
<td>8.66</td>
</tr>
<tr>
<td>Age (Years)</td>
<td>38.69</td>
</tr>
<tr>
<td>Hospitalization (Years)</td>
<td>2.83</td>
</tr>
</tbody>
</table>
First we must consider Hypothesis (i), the results for the effect between the level of instructions on performance speed. There was no significant effect of level of instruction on base speed. See Graph 1. Similarly on analysis of Line 2 performance speed no difference was found between speeds for the level of instruction. See Graph 2. Lines (3 + 4) combined performance score showed no effect of instructions on performance speeds. See Graph 3. Results of Anovas shown in Table 3.

In terms of accuracy (Hypothesis (i)) results for analysis of errors showed no effect at any level of instruction with base speed, Line 2 or Line (3 + 4) combined. In analysing the data for errors, the frequency of errors in all subjects with the exception of the inversions was too low for statistical analysis. On conducting an analysis of variance of inversion scores at all levels no differences were shown to be significant. (Appendix A7).

The second hypothesis (ii) stated that size of type face would significantly affect performance in terms of speed. The two levels of type face, upper type and lower type, showed a significant result with instructions on Line 2 ($F_2 = 12.194, p \leq 0.05$), Table 3. A Tukey test was then used to distinguish the level of instructions interaction with the level of type. Results shown in Table 4. This interaction showed that the mean speed for lower type with instructional set "Quickly but odd mistake" is significantly faster than the mean speed for upper type and instructional set "Own speed but accurate", and that upper type with instructional set "Own speed but accurate" is significantly slower than upper type with instructional set "Quickly but odd mistake". This relationship is demonstrated on Graph 4. On Lines (3 + 4) combined performance speed no effect was found of level of type; this relationship is demonstrated on Graph 5.
GRAPH 1: Instructional Set and Base Speed for LINE (1 + 5).
GRAPH 2: Instructional Set and Performance Speed for LINE 2.
GRAPH 3: Instructional Set and Performance Speed for LINE (3 + 4).
# Table 3

**Table of Calculated F Ratios and Significance Values**

1. **Line (1 + 5), Base Time.**

<table>
<thead>
<tr>
<th>Factor</th>
<th>d.f.</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>0.49</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

2. **Line 2, Performance Speed.**

<table>
<thead>
<tr>
<th>Factor</th>
<th>d.f.</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>1.962</td>
<td>N.S.</td>
</tr>
<tr>
<td>Type Face</td>
<td>1</td>
<td>1.686</td>
<td>N.S.</td>
</tr>
<tr>
<td>Type Face x Level of Instruction</td>
<td>2</td>
<td>12.194</td>
<td>p &lt; 0.05</td>
</tr>
</tbody>
</table>

3. **Line 2, Proportion Speed.**

<table>
<thead>
<tr>
<th>Factor</th>
<th>d.f.</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>12.24</td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Type Face</td>
<td>1</td>
<td>0.37</td>
<td>N.S.</td>
</tr>
<tr>
<td>Type Face x Level of Instruction</td>
<td>2</td>
<td>2.10</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

N.S. = Not Significant

H. Nightingale
## TABLE 3 (Cont.)

### 4. Line (3 + 4). Performance Speed

<table>
<thead>
<tr>
<th>Factor</th>
<th>d.f.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>0.4453</td>
<td>N.S.</td>
</tr>
<tr>
<td>Type Face</td>
<td>1</td>
<td>0.00016</td>
<td>N.S.</td>
</tr>
<tr>
<td>Type Face x Level of Instruction</td>
<td>2</td>
<td>0.159</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

### 5. Line (3 + 4). Proportion Speed

<table>
<thead>
<tr>
<th>Factor</th>
<th>d.f.</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>1.58</td>
<td>N.S.</td>
</tr>
<tr>
<td>Type Face</td>
<td>1</td>
<td>5.50</td>
<td>p &lt; 0.05</td>
</tr>
<tr>
<td>Type Face x Level of Instruction</td>
<td>2</td>
<td>0.08</td>
<td>N.S.</td>
</tr>
</tbody>
</table>

N.S. = Not Significant
### TUKEY TEST: TABLE 4

<table>
<thead>
<tr>
<th>1. T Value</th>
<th>p</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>p &lt; 0.05</td>
<td>Upper Type x Own Speed but Accurate v.s. Upper Type x Quickly and Odd Mistake</td>
</tr>
<tr>
<td>27.88</td>
<td>p &lt; 0.05</td>
<td>Lower Type x Quickly and Odd Mistake v.s. Upper Type x Own Speed but Accurate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. T Value</th>
<th>p</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.05</td>
<td>p &lt; 0.05</td>
<td>Quickly but Odd Mistake v.s. Own Speed but Accurate</td>
</tr>
<tr>
<td>0.76</td>
<td>p &lt; 0.05</td>
<td>Quickly and Accurate v.s. Own Speed but Accurate</td>
</tr>
</tbody>
</table>
GRAPH 4: Instructional Set and Type Face for Performance Speed and Proportion Score for LINE 2.
GRAPH 5: Instructional Set and Type Face for Performance Speed and Proportion Score for LINE (3 + 4).
Proportion scores were calculated for Lines 2 and Lines (3 + 4) combined. This was done by dividing the performance speeds by the base speeds. These scores were analysed to study the interactions of type face and level of instructions with the absolute line performance speed. Significant results were found for both Lines 2 and Lines (3 + 4). Level of instruction showed a significant effect on Line 2 proportion scores ($F_2 = 12.24, p < 0.01$), Table 3. It was found that the mean proportion score for instruction level "Quickly but own mistake" was significantly less than the mean proportion score for instruction level "Own speed but accurate". Also the mean proportion score for instruction level "Quickly but accurate" was significantly less than the mean proportion score for instruction level "Own speed but accurate". (Tukey Test, Table 4.)

A significant effect was found between level of type and Line (3 + 4) combined proportion scores, ($F_1 = 5.50, p < 0.05$). The mean proportion scores for lower type were lower than the mean proportion scores for the upper type. Table 3, Graph 5.

The third hypothesis (iii) stated that at more demanding levels of instruction, performance differences manifest by the size of type will increase. This trend was confirmed with a significant interaction for Line 2 performance score with level of instructions and level of type ($F = 12.194, p < 0.05$). Table 3.

Finally in the analysis of data an analysis of variance was performed on the ages of the subjects to check that there were no significant differences across the groups. There were no significant differences. (Appendix A6).

Errata: Base Speed: Graph 1 and Tables 1 and 2: The display of means and graphic data is meaningless since the only variables was level of instruction.
3.3 Correlations.

In the second part of the data analysis, product moment correlations \((r)\) were calculated, (Correlation Matrix, Table 5). Significant results were found for age and base speed performance, \((r = 0.38, Z = 2.40, p < 0.01)\). A significant correlation was found for age versus hospitalization, \((r = 0.46, Z = 3.04, p < 0.01)\); a significant correlation was calculated for age versus errors, \((r = 0.43, Z = 2.77, p < 0.01)\); a significant correlation was also calculated for hospitalization versus errors, \((r = 0.28, Z = 1.69, p < 0.05)\).

Correlations for performance scores were as follows:

Line 2 performance speed showed a significant correlation with base speed, \((r = 0.70, Z = 5.74, p < 0.001)\); Line \((3 + 4)\) performance speed showed a significant correlation with base speed, \((r = 0.76, Z = 6.81, p < 0.001)\). The proportion scores versus base speed correlations were: Line 2 proportion score versus base speed, \((r = -0.31, Z = 1.89, p < 0.05)\), and Line \((3 + 4)\) proportion score versus base speed, \((r = -0.40, Z = 2.56, p < 0.05)\).

A significant correlation was found between Line 2 performance speed and age, \((r = 0.44, Z = 2.84, p < 0.05)\), and a significant correlation was found between Line 2 proportion score and hospitalization, \((r = 0.28, Z = 1.68, p < 0.05)\). Finally, a significant correlation was found between errors and inversions, \((r = 0.83, Z = 8.05, p < 0.05)\). No other significant correlations were found from the matrix of data compiled (Table 5).
\begin{table}
\centering
\begin{tabular}{|c|c|c|c|c|c|c|c|c|}
\hline
 & Base Speed & Age & Hospitalization & Errors & Inversion & Line 2 Performance Speed & Line (3+4) Performance Speed & Line 2 Proportion Score & Line (3+4) Proportion Score \\
\hline
Base Speed & 0.38 & -0.06 & 0.14 & 0.04 & *** & ** & 0.70 & 0.76 & -0.31 & -0.40 \\
\hline
Age & *** & *** & 0.43 & 0.18 & *** & *** & 0.44 & 0.42 & 0.23 & 0.24 \\
\hline
Hospitalization & * & 0.28 & 0.19 & 0.09 & & -0.18 & & 0.28 & 0.11 \\
\hline
Errors & *** & 0.83 & 0.21 & 0.11 & 0.12 & 0.04 & -0.09 \\
\hline
Inversion & & & & & 0.08 & 0.01 & & & \\
\hline
\end{tabular}
\caption{Correlation Matrix for Performance, Age and Hospitalisation Parameters (N = 36)}
\end{table}
CHAPTER 4

DISCUSSION

Major Findings of the Study.

Analyses of Performance Speeds.

First looking at the absolute performance speeds the following were found:

(i) That the level of instruction had no effect on base speed, i.e. placing blank type into the holder (Graph 1).

(ii) On Line 2 it was found that there was an unexpected interaction which can be seen on Graph 2. As indicated by the Tukey test results for the placing of upper type set 'quickly and with odd mistake' time was longer than for setting the same type at 'own speed' or setting lower type 'quickly' or with 'own speed' allowed.

(iii) For Lines (3 + 4) there was no significant effect of any factor on performance speed (Graph 3).

From the above analyses it can be seen that there is a lack of clear results. It was hoped that differences in the instructional sets A, B and C would have produced some difference in the base locomotor speed in the placing of type face in the holder. In fact no such differences were found. This partially refutes Hypothesis 1 that level of instruction is an important variable for producing performance differences in this task. The significant interaction term for Line 2 is difficult to
interpret. It might be predicted that the pressure indicated by the different levels of instruction should be greatest for SET B ('Quickly and Accurately') where both elements (speed and accuracy) are involved in the same set. This, it may be predicted, should have caused the greatest disruption of performance. For Lines (3 + 4) a similar picture of non-discrimination for level of instructions or type face is seen. This unfortunate picture was somewhat clarified when the subject differences were assessed for how they may have affected performance. Large individual differences of base speed occurred, which may have tended to obscure the results of pure effects of instructional set and type face. Because of these individual differences it was decided to normalize the data in someway with respect to base speed and this was done by dividing performance speed for Lines 2 and (3 + 4) by base speed. Repeated analysis on this normalized data indicated some quite marked effects.

Analyses of Proportion Scores.

Firstly on Line 2 we find a significant effect of instruction on the proportion scores (see Graph 4). The location of this significant effect indicated that the proportion scores for 'quickly and odd mistake' were significantly larger than for either of the other two instructional sets, and that the latter sets did not differ from each other in their respective proportion scores. This has been interpreted that the added complexity of placing letters over and above the placing of plain blanks, i.e. base speed, brings about a greater slowing of speed when the instruction has the accent on speed rather than either just accuracy or accuracy and speed. Simply, this result suggests that the instructional set 'go as quickly as possible' slows performance relative to an instruction which requires 'accuracy' which speeds performance. This is the
inverse of what was expected. A similar analysis of Lines \((3 + 4)\) indicated a significant effect of type face on proportion score (see Graph 5). Graph 5 indicates that the proportion score is significantly greater for the lower type face than for the upper type face. This shows that performance on all levels of the instructional sets is, when proportionally compared with base speed, slower for the lower type face as compared with upper type face. One interpretation of this difference is that the added complexity of discriminating lower type face is greater than discriminating with upper type face, hence slowing performance. This interpretation is consistent with that of Townsend (1971) who found greater confusion for lower case alphabets than upper case with normal subjects. These results would then bring some confirmation to Hypothesis 2, that size of type face will significantly affect performance speed, yet at the same time this refutes Hypothesis 3 that this will interact with level of demand of instruction.

In conclusion of the major findings we have only seen partial confirmation of Hypothesis 1. Level of instruction only seems a crucial determinant of performance for Line 2. Level of instruction is not a crucial determinant for performance either for base line speed or for performance speed of Line \((3 + 4)\).

Analysis of the separate errors was not possible since the frequency of all but the inversion scores was too low for a statistical test to be applied. However, analysis of variance on the inversion scores showed no significant differences across either levels of instructional set or type face.
Other Findings of the Study.

(i) Age was found to bear a significant relationship to the following factors: base speed, hospitalization, errors and performance speed on Lines 2 and (3 + 4) - Correlation Matrix (Chapter 3). This indicated that a greater age is associated with longer hospitalization, a higher number of errors, slower base speed performance and a slower performance speed on Lines 2 and (3 + 4). Although it was shown that the mean ages were not different across the levels, there were large differences of age within each group and these age differences would have contributed to the error variance.

(ii) Hospitalization correlated also with errors, and proportion scores for Line 2. It seems that longer hospitalization was associated with greater errors and associated with a slowing of performance in Line 2. Hospitalization does not correlate with base speed but age does. Therefore, age appears more closely linked to performance than length of hospitalization. This is an interesting finding. Chronicity may, therefore, not be an important discriminating variable for this task.

(iii) Errors it was found did not correlate with performance speeds or base speeds. This is interesting since one might expect dependence of variation errors with speed.

(iv) By considering the three different parts of the test, that is base line, Line 2 and Line (3 + 4), as stages of increasing task
(iii) This task was designed independently from other tasks and, therefore, at present has no extended validation.

(iv) In the selection of subjects, patients were used from two different psychiatric units, Springfield and Withington. This may have produced a heterogeneous group, due to institutional and environmental differences, which may have increased subject differences. However, patients used were those who met the experimental criteria. Such a heterogeneous group is more beneficial with respect to general applicability of such a test.

(v) In the analysis of the data, Analysis of Covariance was not used due to the complexity of the statistical model which was required.

(vi) The group of subjects used was a psychiatric sample only. It would be of great interest and benefit if a normal group of subjects who were matched for age could have been tested to look for effect on performance of the similar independent variables.

(vii) Sex differences were not studied, and sexes were randomly allocated to the groups. It would have been interesting, in the light of Glaister's work (1970) where he found sex differences on work tasks, to look at any possible sex differences on the present task. But Glaister described his results being largely due to physical differences. These physical differences would not have occurred in this study.
complexity the following could be suggested. The median complexity printing level (Line 2) of performance may be sensitive to level of instruction. At a higher level of complexity, level of type face becomes a significant factor.

(v) It was also interesting to find that speed effects and errors were not related, and it must be perceived that these variables are independent of each other and not related together in this sort of task.

3 Criticisms of this Research.

The following criticisms must be mentioned for the present piece of research:

(i) The sample size of \( N = 36 \) is the minimal level of acceptance for the statistical analysis used. Obviously an increase in group size would be advisable, especially in the light of the large individual differences which were present with respect to age and hospitalization.

(ii) There was no control for medication of the subjects, and this would be of especial importance with respect to the speed of performance on a psychomotor task such as the one which has been described in this research. However, such a proposed control of medication would have been impractical to overcome with such a design unless control groups had also been used.
Finally, efforts to equally represent age and chronicity factors in each experimental condition have been vindicated in the light of the results obtained on the correlation matrix for age, chronicity and performance. It is not clear whether separating out base speed effects has been the only worthwhile data transformation. It would clearly be of great interest to partial out the effects of age with respect to performance, since this might clarify the picture further; this has not been included in this project.

How Might We Use This Information in Further Research.

We need a test which will be easy to administer, objective to score and which will tell us reliably whether some subjects' performance has changed or stayed the same. We hopefully should gain some clues with respect to the sensitivity of the performance measures to the independent variables tested here.

Finally, it would appear that looking at absolute speeds is an insensitive measure, and correlations indicate that such a basic measure would be quite liable to bias to subjective factors, e.g. age, hospitalization. The picture has been clarified a little by looking at proportion scores.
CHAPTER 5

CONCLUSIONS

The general findings of this piece of research were as follows:

Instructional set had no effect on absolute performance speed with the exception of instructional set "quickly and odd mistake" which showed significant effect with the medium complexity line of print (LINE 2).

The instructional set showed significant effects on proportion scores.

Instructional set had no other effects on performance speeds and was not a discriminating factor. Performance was found to be slower for lower type face than for upper type face when proportion scores are considered.

When proportion scores were considered, no interaction between level of demand of instruction and the type face was found.

There was no effect found of instructional set or type face on errors.

Age was a highly significant factor showing correlations with base speed, length of hospitalization, errors and performance speed.

Chronicity was found to correlate with errors and proportion scores on LINE 2.
chronicity may not be an important discriminating variable for this task.

Data suggests that at higher levels of complexity in the printing task, the level of type face becomes a significant factor.

The absolute performance speed was an insensitive measure, but when transformed to proportion scores yielded significant results. Overall it was led that the results yielded from this experiment were useful and interesting.
Selected References.


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Background References.

49.


### TABLE 4: SUMMARY TABLE OF ANOVA ON BASE TIMES (1 + 5)

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Square Error</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>7879.16</td>
<td>3939.58</td>
<td>0.49</td>
</tr>
<tr>
<td>Level of Type</td>
<td>1</td>
<td>1127.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>11370.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Groups Error</td>
<td>30</td>
<td>237160.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>257537.69</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE 2: SUMMARY TABLE OF ANOVA ON LINE 2 PERFORMANCE TIMES

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>Error</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>10190.7</td>
<td>5095.35</td>
<td>1.962</td>
<td></td>
</tr>
<tr>
<td>Level of Type</td>
<td>1</td>
<td>4378.7</td>
<td>4378.7</td>
<td>1.686</td>
<td></td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>63322.8</td>
<td>31661.4</td>
<td>12.194</td>
<td></td>
</tr>
<tr>
<td>Within Groups Error</td>
<td>30</td>
<td>77893.0</td>
<td>2596.43</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>457071.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### TABLE A3 SUMMARY TABLE OF ANOVA ON LINE (3 + 4) PERFORMANCE TIMES

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>51370.5</td>
<td>25685.25</td>
<td>0.4453</td>
</tr>
<tr>
<td>Level of Type</td>
<td>1</td>
<td>9.5</td>
<td>9.5</td>
<td>0.00016</td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>18449.2</td>
<td>9224.6</td>
<td>0.159</td>
</tr>
<tr>
<td>Within Groups</td>
<td>30</td>
<td>1730185.8</td>
<td>57672.86</td>
<td></td>
</tr>
<tr>
<td>Error Total</td>
<td>35</td>
<td>1800015.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table A4: Summary Table of ANOVA on Line 2 Proportion Score

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares Estimates</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>7.11</td>
<td>3.55</td>
<td>12.24</td>
</tr>
<tr>
<td>Level of Type</td>
<td>1</td>
<td>0.11</td>
<td>0.11</td>
<td>0.37</td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>1.22</td>
<td>0.61</td>
<td>2.10</td>
</tr>
<tr>
<td>Within Groups Error</td>
<td>30</td>
<td>8.88</td>
<td>0.29</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>17.32</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### EA5 SUMMARY TABLE OF ANOVA ON LINE (3 + 4) COMBINED PROPORTION SCORES

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares Estimates</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>0.76</td>
<td>0.38</td>
<td>1.58</td>
</tr>
<tr>
<td>Level of Type</td>
<td>1</td>
<td>1.32</td>
<td>1.32</td>
<td>5.50</td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>0.04</td>
<td>0.02</td>
<td>0.08</td>
</tr>
<tr>
<td>Within Groups Error</td>
<td>30</td>
<td>7.26</td>
<td>0.24</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>9.38</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE A6 SUMMARY TABLE OF ANOVA ON AGES

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages Across Columns</td>
<td>2</td>
<td>19.04</td>
<td>9.52</td>
<td>0.08</td>
</tr>
<tr>
<td>Ages Down Rows</td>
<td>1</td>
<td>53.78</td>
<td>53.78</td>
<td>0.49</td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>124.06</td>
<td>62.03</td>
<td>0.57</td>
</tr>
<tr>
<td>Within Groups Error</td>
<td>30</td>
<td>3255.32</td>
<td>108.51</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>3452.20</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE A7 SUMMARY TABLE OF ANOVA ON INVERSION SCORES (ERRORS)

<table>
<thead>
<tr>
<th>Source</th>
<th>d.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares Estimates</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Instruction</td>
<td>2</td>
<td>25.72</td>
<td>12.86</td>
<td>0.61</td>
</tr>
<tr>
<td>Level of Type</td>
<td>1</td>
<td>1.36</td>
<td>1.36</td>
<td>0.06</td>
</tr>
<tr>
<td>Interaction</td>
<td>2</td>
<td>61.23</td>
<td>30.61</td>
<td>1.46</td>
</tr>
<tr>
<td>Within Groups Error</td>
<td>30</td>
<td>628.00</td>
<td>20.93</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
<td>716.31</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Calculated Values of $r$, $Z$ and $p$

<table>
<thead>
<tr>
<th>Relation</th>
<th>$r$</th>
<th>$Z$ Score</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed x Age</td>
<td>0.38</td>
<td>2.48</td>
<td>$p &lt; 0.01$</td>
</tr>
<tr>
<td>Speed x Hospitalization</td>
<td>-0.06</td>
<td>0.34</td>
<td>N.S.</td>
</tr>
<tr>
<td>Speed x Errors</td>
<td>0.14</td>
<td>0.81</td>
<td>N.S.</td>
</tr>
<tr>
<td>Speed x Inversions</td>
<td>0.04</td>
<td>0.23</td>
<td>N.S.</td>
</tr>
<tr>
<td>Speed x LINE 2 Performance Speed</td>
<td>0.70</td>
<td>5.74</td>
<td>$p &lt; 0.005$</td>
</tr>
<tr>
<td>Speed x LINE (3+4) Performance Speed</td>
<td>0.76</td>
<td>6.81</td>
<td>$p &lt; 0.005$</td>
</tr>
<tr>
<td>Speed x LINE 2 Proportion Score</td>
<td>-0.31</td>
<td>1.89</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Speed x LINE (3+4) Proportion Score</td>
<td>-0.40</td>
<td>2.56</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Hospitalization x Errors</td>
<td>0.46</td>
<td>3.04</td>
<td>$p &lt; 0.005$</td>
</tr>
<tr>
<td>Hospitalization x Inversions</td>
<td>0.43</td>
<td>2.77</td>
<td>$p &lt; 0.005$</td>
</tr>
<tr>
<td>Hospitalization x LINE 2 Performance Speed</td>
<td>0.44</td>
<td>2.84</td>
<td>$p &lt; 0.005$</td>
</tr>
<tr>
<td>Hospitalization x LINE (3+4) Performance Speed</td>
<td>0.42</td>
<td>2.68</td>
<td>$p &lt; 0.005$</td>
</tr>
<tr>
<td>Hospitalization x LINE 2 Proportion Score</td>
<td>0.23</td>
<td>1.38</td>
<td>N.S.</td>
</tr>
<tr>
<td>Hospitalization x LINE (3+4) Proportion Score</td>
<td>0.24</td>
<td>1.43</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x Errors</td>
<td>0.28</td>
<td>1.69</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Inversions x Inversions</td>
<td>0.19</td>
<td>1.32</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x LINE 2 Performance Speed</td>
<td>0.09</td>
<td>0.52</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x LINE (3+4) Performance Speed</td>
<td>-0.18</td>
<td>1.06</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x LINE 2 Proportion Score</td>
<td>0.28</td>
<td>1.69</td>
<td>$p &lt; 0.05$</td>
</tr>
<tr>
<td>Inversions x LINE (3+4) Proportion Score</td>
<td>0.11</td>
<td>0.11</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x Inversions</td>
<td>0.83</td>
<td>8.05</td>
<td>$p &lt; 0.005$</td>
</tr>
<tr>
<td>Inversions x LINE 2 Performance Speed</td>
<td>0.21</td>
<td>1.25</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x LINE (3+4) Performance Speed</td>
<td>0.11</td>
<td>0.64</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x LINE 2 Proportion Score</td>
<td>0.12</td>
<td>0.69</td>
<td>N.S.</td>
</tr>
<tr>
<td>Inversions x LINE (3+4) Proportion Score</td>
<td>-0.09</td>
<td>0.52</td>
<td>N.S.</td>
</tr>
<tr>
<td>Relation</td>
<td>Pearson's Co-efficient</td>
<td>Z Score</td>
<td>p</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------------------</td>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Rsions x LINE 2 Performance Speed</td>
<td>0.08</td>
<td>0.46</td>
<td>N.S.</td>
</tr>
<tr>
<td>Rsions x LINE (3+4) Performance Speed</td>
<td>0.01</td>
<td>0.05</td>
<td>N.S.</td>
</tr>
<tr>
<td>Rsions x LINE 2 Proportion Score</td>
<td>0.04</td>
<td>0.23</td>
<td>N.S.</td>
</tr>
<tr>
<td>Rsions x LINE (3+4) Proportion Score</td>
<td>-0.07</td>
<td>N.S.</td>
<td></td>
</tr>
</tbody>
</table>
INSTRUCTIONS TO SUBJECT
ACTIONS TO SUBJECT

The task you are going to do, I want you to set up lines of print on a card so that you can produce printed letters and words from the block onto the card.

Here are the letters. They are all in these boxes which are labelled alphabetically from A to Y, and here are the blanks for placing in between words."

Show you what to do.

The print in the top right hand side and start each line going from right to left. Do not forget that the letters are reversed so that when you actually put out the stamp it will read correctly, i.e. THE CAT.

Put the letters as close together as possible and place a blank between words.

Go from right to left.
Do not forget that the letters are reversed.
Place each letter as close to the next as possible.
Have you any questions because after you start please do not ask any questions."
INSTRUCTIONAL SETS

TA

"Work at your own speed and be as accurate as you can and do not make any mistakes."

TB

"Try and work as quickly and as accurately as you can."

TC

"Work as quickly as you can and do not worry about the odd mistake."

HAL SET D FOR ALL SUBJECTS

"Stamp the block as near to the centre of the card as you can."
PRINTING INSTRUCTION CARDS

SET UP THE FOLLOWING LINES OF PRINT (CAPITALS)

CARD 1

ON FIRST LINE - 10 BLANKS

CARD 2

ON SECOND LINE - A - J

CARD 3

ON THIRD LINE - A HOSPITAL

CARD 4

ON FOURTH LINE - ON TUESDAY

CARD 5

ON FIFTH LINE - 10 BLANKS
PRINTING INSTRUCTION CARDS

SET UP THE FOLLOWING LINES OF PRINT

(Small Type)

CARD 1

ON FIRST LINE - 10 blanks

CARD 2

ON SECOND LINE - a .

CARD 3

ON THIRD LINE - a hospital

CARD 4

ON FOURTH LINE - on tuesday

CARD 5

ON FIFTH LINE - 10 blanks
<table>
<thead>
<tr>
<th>Hospital</th>
<th>Age</th>
<th>Hospitalization</th>
<th>Date of Birth</th>
</tr>
</thead>
<tbody>
<tr>
<td>M. (m)</td>
<td>Springfield</td>
<td>49 years</td>
<td>16 years +</td>
</tr>
<tr>
<td>M. (f)</td>
<td>Springfield</td>
<td>49 years</td>
<td>15 years +</td>
</tr>
<tr>
<td>B. (m)</td>
<td>Springfield</td>
<td>49 years</td>
<td>5 years +</td>
</tr>
<tr>
<td>G. (f)</td>
<td>Springfield</td>
<td>44 years</td>
<td>2 years +</td>
</tr>
<tr>
<td>D. (f)</td>
<td>Withington</td>
<td>50 years</td>
<td>3 years +</td>
</tr>
<tr>
<td>P. (f)</td>
<td>Springfield</td>
<td>48 years</td>
<td>6 years +</td>
</tr>
<tr>
<td>M. (m)</td>
<td>Springfield</td>
<td>35 years</td>
<td>2 years +</td>
</tr>
<tr>
<td>B. (m)</td>
<td>Springfield</td>
<td>44 years</td>
<td>3 years</td>
</tr>
<tr>
<td>H. (m)</td>
<td>Withington</td>
<td>52 years</td>
<td>7 years</td>
</tr>
<tr>
<td>F. (f)</td>
<td>Springfield</td>
<td>52 years</td>
<td>2 years</td>
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<tr>
<td>F. (m)</td>
<td>Springfield</td>
<td>44 years</td>
<td>16 years</td>
</tr>
<tr>
<td>L. (m)</td>
<td>Springfield</td>
<td>30 years</td>
<td>1 year</td>
</tr>
<tr>
<td>M. (f)</td>
<td>Withington</td>
<td>37 years</td>
<td>5 years</td>
</tr>
<tr>
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= 36 Males 16 ) Springfield 10 ) A_1 = 18 B_1 = 12
Females 20 ) Withington 26 ) A_2 = 18 B_2 = 24
## PATIENTS MEDICAL DIAGNOSIS

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<td>5. E. D.</td>
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<td>7. V. M.</td>
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<tr>
<td>8. M. B.</td>
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<td>P. C.</td>
<td>Schizophrenia</td>
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</table>
# ALLOCATION OF PATIENTS TO GROUPS

## Upper Type

### Own Speed but Accurate

| 38 | Y. E.       | A₁ B₁ |
| 22 | V. M.       | A₁ B₂ |
| 26 | L. M.       | A₁ B₁ |
| 52 | J. G.       | A₂ B₂ |
| 8  | M. M.       | A₂ B₂ |
| 3  | T. B.       | A₂ B₂ |

### Quickly and Accurately

| 46 | A. H.       | A₁ B₂ |
| 31 | C. R.       | A₁ B₁ |
| 29 | L. P.       | A₁ B₂ |
| 2  | E. M.       | A₂ B₂ |
| 36 | K. B.       | A₂ B₂ |
| 10 | R. F.       | A₂ B₂ |

### Quickly but Odd Mistake

| 62 | M. M.       | A₁ B₁ |
| 25 | I. L.       | A₁ B₂ |
| 61 | J. C.       | A₁ B₁ |
| 49 | J. H.       | A₂ B₂ |
| 6  | D. P.       | A₂ B₂ |
| 4  | K. G.       | A₂ B₂ |

## Lower Type

### Own Speed but Accurate

| 36 | G. M.       | A₁ B₂ |
| 63 | P. C.       | A₁ B₁ |
| 39 | A. Y.       | A₁ B₂ |
| 41 | J. K.       | A₂ B₁ |
| 9  | J. H.       | A₂ B₂ |
| 23 | D. S.       | A₂ B₁ |

### Quickly and Accurately

| 37 | D. P.       | A₁ B₁ |
| 24 | M. O.       | A₁ B₂ |
| 16 | S. L.       | A₁ B₁ |
| 48 | H. S.       | A₂ B₂ |
| 7  | V. M.       | A₂ B₂ |
| 35 | M. M.       | A₂ B₂ |

### Quickly but Odd Mistake

| 59 | G. W.       | A₁ B₂ |
| 33 | M. B.       | A₁ B₁ |
| 30 | D. W.       | A₁ B₂ |
| 5  | E. D.       | A₂ B₂ |
| 12 | B. F.       | A₂ B₂ |
| 1  | D. M.       | A₂ B₂ |

\[N = 36 \quad n = 6\]
APPENDIX E

SAMPLE RECORDING SHEET

No. 37 D. P. - Subject

LOWER TYPE

INSTRUCTIONAL SET "QUICKLY AND ACCURATELY" (SET 2)

TIME TAKEN

| LINE 1 | 10 blanks | 152 secs. |
| LINE 2 | a-j       | 209 secs. |
| LINE 3 | a hospital| 275 secs. |
| LINE 4 | on tuesday| 191 secs. |
| LINE 5 | 10 blanks | 114 secs. |

(1) $1+5x = 133$
(2) $2 = 209$
(3) $3+4x = 233$

ERRORS

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<th>S. E.</th>
<th>INV.</th>
<th>SUB.</th>
<th>OMIS.</th>
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PROJECT PROGRAMME; PLAN OF RESEARCH

Preliminary Reading and Writing for Research Papers  October/November 1977

Preliminary Task Design; Literature Research  November/December 1977
continued

Pilot Research

Data: on 10 normals; 8 psychiatric patients  December 1977

Final Test Design  December 1977/
January 1978

Data Collection on 36 Selected Patients  January 1978
April 1978

Scoring of Data  May 1978

Statistical Analysis  June/July 1978

Results. Further Reading and Write Up  July/August 1978
PATIENT SATISFACTION: A QUALITY EVALUATION

Submitted by Helen Nightingale

for the Doctor of Psychology (PsychD)

in Clinical Psychology

March 1996 - Surrey University
Abstract

1.0 Introduction

2.0 The Construct of Patient Satisfaction

2.1 The History of Research into Patient Satisfaction
2.2 Definitions and Determinants of Patient Satisfaction
2.3 Proposed Models and Their Limitations
2.4 Evaluating the Usefulness of Patient Satisfaction Measures
2.5 Methodological Problems and Dilemmas in the Measurement of Patient Satisfaction
2.6 The Reliability and Validity of Patient Satisfaction Measurements
2.7 Other Biases which can Affect Patient Satisfaction Evaluations
2.8 Research questions
2.9 Selection of key variables

3.0 Methods

3.1 Setting
3.2 Sample
3.3 Ethical consent
3.4 The Interview schedule and Derived Measures
3.5 Validity of schedule
3.6 Reliability of schedule
3.7 Procedures

4.0 Results

4.0 The main data from the interview schedule
4.1 How satisfied are the patients with aspects of the service?
4.2 Which factors are affecting patient satisfaction?
4.3 Importance of the sociodemographic factors

5.0 Discussion of Results

5.1 How satisfied are the patients with aspects of the service
5.2 What factors are affecting patient satisfaction?
5.3 Importance of sociodemographic factors
5.4 Recommendations for future research.

6.0 Conclusions
APPENDICES

I. Overall Organisational Evaluation Format.

II. The Patient Satisfaction Schedule and Preamble instructions given to patients.

III. Kappa, Calculations of Content Validity for schedule.

IV. Test Retest Reliability for Schedule.

V. Tables of statistical analysis of the Patient Satisfaction Schedule.

VI. Confirmatory Factor Analysis for 5 factors obliquely rotated.

VII. Qualitative Feedback from patients for Chief Executive of the Trust.
A thirty-five item questionnaire was designed to evaluate the contribution of five constructs previously identified in the literature as predicting patient satisfaction. The questionnaire also included the eight item version of the Client Satisfaction Questionnaire (CSQ 18) standardised elsewhere to give a reliable global patient satisfaction rating. The content validity of the questionnaire was assessed by six psychologists and found to have a mean Kappa of 0.81. The questionnaire in the form of an interview schedule was initially administered to 19 patients on two occasions and achieved a test retest reliability of between 0.82 and 0.96 on various subsections of the interview schedule. The schedule was then given to one hundred and ten orthopaedic out-patients, waiting for appointments at a large general hospital. The focus of the study was to identify the contributing factors to patient satisfaction and in particular the contribution of patient participation (Galassi et al 1992) to the level of satisfaction of patients.

The questions posed by the hospital for the research were:

1. How satisfied are patients with the service?
2. What are the most important factors contributing to patient satisfaction in that service?
3. Are sociodemographic factors (age and sex) important?

The patient satisfaction structured interview was focused on identifying those factors and their relative contributions. The main findings showed that 72% of variance in global satisfaction could be predicted from measures of patient expectation, patient participation, and staff attitude. Sociodemographic data were not predictive of patient satisfaction. However, several measures were not found to be empirically distinct despite having high reliabilities and good content validity, thus supporting previous evidence that patient satisfaction is a multi-modal and multi-faceted complex construct.
1.0 INTRODUCTION

The overall aim of the research is to monitor and evaluate the re-structuring of hospital services. The project is a year long comprehensive evaluation of a district hospital undergoing considerable re-engineering of its organisational processes. The current study is part of a comprehensive evaluation project for a district general hospital in the Midlands (see Appendix I).

This study looked at the patients' views of the delivery of one particular service and was focused on identifying the main factors of overall significance in achieving satisfaction from the service. The patient satisfaction measurements were established as one of the main tools of evaluation for the patients' indices of quality. A standardised and international measure of global patient satisfaction was taken and used as part of a larger evaluation procedure.

1.1 This study analyses the responses of one hundred and ten patients at the point of discharge, in terms of their satisfaction with the service they received. It was aimed at identifying the main factors which affect patient satisfaction in this hospital in general and in the orthopaedics out-patient service in particular. These measures will be used as baseline measures which can be compared on subsequent evaluations in other specific areas, e.g. Accident & Emergency.

For this project a thirty-five item questionnaire, including the shortened version of the Client Satisfaction Questionnaire (eight item), Attkisson and Larsen(1989), was given to patients in order to identify the global level of patient satisfaction and to assess the relative contribution of five factors in influencing patient satisfaction in the area of orthopaedics out-patients. Those five factors were proposed by the empirical
literature and were patient participation, staff attitude, patient expectation, communications and the environment. The questionnaire was adapted into a structured interview and the data from this schedule was analysed using regression analysis to identify the relative degree of contribution made by these relevant factors.

The consequences of identifying the importance of the contributing factors included the prioritisation of service changes and the identification of resource requirements, e.g. staff training and the need to boost particular staff attitudes and behaviour. Improvements to decor and environment were also considered. These conclusions were reported in the recommendations of the evaluation to the Chief Executive of the NHS Trust.

2.0 THE CONSTRUCT OF PATIENT SATISFACTION

The main difficulty for researchers has been to define the construct of patient satisfaction and, in particular, whether it is an attitude or a behaviour, or both, and whether it differs across various patient populations or medical encounters.

Patient satisfaction is a multi-modal and complex concept. Nguyen et al (1983) stated that the research to date identified many difficulties in using satisfaction data in studies, including the fact that there was an over-reporting of high rates of satisfaction, and considerable difficulties in obtaining unbiased samples. The major problem was the ubiquitous finding that service recipients reported high levels of satisfaction regardless of the method used, the population sampled, or the object of the rating. Nguyen stated that this finding may be accounted for by, for example, demand characteristics such as grateful testimonials, or by the observed data being taken at face value as unquestioned proof of the effectiveness of the service. Critics (Attkisson, 1982) say this position is shortsighted and misguided since, due to the lack of meaningful comparisons, the level of satisfaction in absolute terms is often impossible to determine. Nguyen additionally reports a clear...
difference in recorded levels of satisfaction and age. He concluded that younger patients are less satisfied than older patients and, associated with this, younger patients had higher levels of expectation concerning health care.

The nature of the factors which have been identified with patient satisfaction is still not clear. The mechanism for forming judgements of patient satisfaction has yet to be well specified, and the type of relationship which it supports, needs to be identified. Rubin (1990) proposed that patient satisfaction is a multi-dimensional construct. Using in-patient and out-patient settings, he found that patients used a number of constructs for both settings, but also formed unique summary judgements for individual settings. He concluded that both types of construct (multi-dimensional and summary) may be allowed for.

Locke and Dunt (1978) noted the preoccupation of most researchers with identifying sociodemographic correlates of satisfaction rather than developing a socio-psychological theory of satisfaction. As yet, none of the proposed theoretical models for understanding patient satisfaction have been tested and proved.

Linder-Peltz (1982) and Strasser, Aharony and Greenberger (1993) point out that very little of the research is theory-testing or theory-building.

Pascoe (1983), who compiled a comprehensive review of the subject, views patient satisfaction as a comparative process which includes a cognitive based evaluation of the service and an affective based response (an emotional reaction) to different aspects of the service.

Work by Strasser, Aharony and Greenberger (1993) is consistent with Pascoe's formulation. Their model is based on both social and cognitive psychological explanations of how satisfaction attitudes are formed. Strasser's et al (1993) review paper notes that the role of the patient has yet to be defined. It questions whether patients are simply passive judges of events
which befall them or activists whose behaviour may affect their own levels of satisfaction. In effect, for most formulations, patients are perceived as Skinnerian black boxes and patient behaviours are considered to be environmentally manipulated. This may not be entirely accurate, but it is usually considered impossible to measure other internal aspects of the psyche. More recently there are requests in the research literature for designs which will study quantitatively patients' comments on open ended questions (content analysis), so that a study of the internal cognitions of patients can be made (Aharony and Strasser 1993). These cognitive processes can be followed and conducted on an unconscious level and may also be, or seem to be, irrational, but they are performed by all patients. This was adequately demonstrated by Strasser and associates (1993) who looked at 7,000 patient satisfaction surveys. Their explanations concern certain process steps, i.e. firstly, stimuli are identified by patients and secondly, judged descriptively but the judgements made of different stimuli may not, as a group, be logical or rational, e.g. patients may identify individual elements of the service as poor, but the overall service as good.

2.1 The History of Research into Patient Satisfaction

The history of this topic is reported as far back in the academic literature as 1957, when Abdullah and Levin studied patient dissatisfaction and its reliability as judged by hospital staff. Since then, patient satisfaction has received considerable attention and research, and has received both government and private sector funding in the U.S.A. This has been due mostly to the medical care insurance industry's interest in identifying the main factors which will indicate whether patients will return to or leave particular medical practices and hospitals.

There has also been an increase in the appreciation of the significance of patients' perception of care and, in the 1980s, patient satisfaction was a main concern of quality assurance, and the expected outcomes of care (Donabedian 1982).
The subject of patient satisfaction has become more seriously valued in the U.K. since the introduction of a market system in the NHS. The NHS Management Enquiry (the "Griffiths Report") (1988) stressed that the NHS needed to be accountable to the consumer or the patient, and thus the importance of consumer choice and patient satisfaction was not entirely unconnected to the prevailing ideology that health care should be closely tied to the market economy (Calnan 1988). In addition to economic issues, there has been a proliferation of total quality management programmes in which patients are targeted as a critical consumer group (Strasser et al 1993).

However, despite this general and considerable interest, it has proved difficult to develop a sensitive measure which can be implemented inexpensively. Thus the construction of a psychometrically adequate scale with demonstrable validity has become a considerable struggle. Meanwhile, hospital and health service management has recognised that satisfied patients are more likely to continue using medical care services (Ware and Snyder 1975) and also maintain a relationship with a specific provider (Bowman et al 1992). Management therefore continues to request patient satisfaction surveys.

From the medical viewpoint there is a growing body of research showing a positive correlation between patient satisfaction and patient compliance with medical care regimes (Barlett, Grayson, Barker et al 1984), which will probably increase the effectiveness of the medical treatments.

Reviews by Pascoe (1983) McNeil (1988) and Rubin (1990) have concentrated on the content, reproducibility, accuracy, sensitivity, and feasibility of methods used to survey patients’ views on the quality of hospital care. Most recently, Aharony and Strasser (1993) have attempted to categorise the extant literature according to specific topics relating to patient satisfaction measurement, rather
than provide an exhaustive review of specific studies.

Historically the study of patient satisfaction began with empirical investigation rather than theoretical formulation and re-formulation. Much of the work consists of correlational studies, only a handful of which are based on theory (Pascoe 1983, and Aharony & Strasser 1993). Consequently, information has been accumulated on how variables co-vary but still little is known about how patient satisfaction attitudes are formed.

Strasser et al (1993) argue the case for including in their model individual difference variables, such as gender, age and consumer expectations and, although they do not consider the case to be overwhelming, they do believe their inclusion increases understanding of the patient satisfaction process, and will lead to more precise methodological empirical studies, designed to identify determinants of patient satisfaction and the nature of the relationships between those determinants.

Preliminary evidence from more recently reviewed research designs (Strasser et al 1993) suggests that analyses which consider the patients' self-assessment of their health and their social circumstances, are supporting the likelihood that patient satisfaction will vary from in-patient to out-patient settings, or from one disease classification to another.

Strasser and Schweikhart (1992) suggested that for an in-patient service, family members and friends are more difficult to satisfy than patients, which makes the practitioners' directive of satisfying family members and friends more challenging than one might initially expect.

2.2 Definitions and Determinants of Patient Satisfaction

Definitions of patient satisfaction have varied according to the nature of the research and there is no agreement on
any one definition, or even any common criteria which may contribute to the term "patient satisfaction". Ware, Davies-Avery and Stewart (1978) conducted a content analysis review of the literature in order to develop a definition. They concluded that the published empirical studies of patient satisfaction deal with a very large number of items which could be grouped according to the construct they intended to measure. Apart from informing the reader of the multi-dimensional nature of the patient satisfaction construct, they were unable to reach a final definition.

Pascoe (1983) defines patient satisfaction as a health care recipient's reaction to salient aspects of the context, process and result of their service experience, concluding that it is an evaluation of a directly received service process in comparison to a subjective standard. This assumes two psychological activities, firstly, a cognitively based evaluation and, secondly, an affective-based response, or emotional reaction, to the structure, process and outcome of services. Pascoe's explanation offers an understanding of the often unreliably high ratings of satisfaction, i.e. that because there is ambiguity in patients' expectations of health care delivery, the latitude of acceptance may be fairly broad around the subjective standard, which leads to the assimilation of the experience and in most instances to a sense of satisfaction.

Many of the research papers such as Ware et al (1983), Strasser and Aharony (1993) indicate the multi-dimensional nature of patient satisfaction, as does Hardy and West's (1995) most recent research. They identified three components of proximal patient satisfaction but their results confirmed the presence of fourteen factors in all. Their reliable and robust instrument to measure patient satisfaction was wide ranging and, unlike previous measures of patient satisfaction, Hardy et al identified interrelationships between patient reactions to
socialisation processes, hospital facilities, staff attitudes and communication patterns, which were in contrast to previous basic concepts of satisfaction, e.g. doctor-patient relationships Brody (1980).

Many other determinants of patient satisfaction have been identified by empirical research but the evidence is scattered and seldom cohesive or conclusive, because of the nature of the attitude survey employed.

Pascoe's seminal review (1983) notes the preoccupation of most researchers with identifying socio-demographic correlates of satisfaction rather than developing a solid socio-psychological theory of satisfaction. This was also noted by Locker and Dunt (1978).

In summary, of the research published, the various determinants have been identified as:


ii) **Health related behaviours**: Linn et al (1982), Brody (1980).

iii) **Attitudes**:

Provider-patient interaction, which includes technical competencies Ross et al (1981).

Interpersonal skills Linn et al (1975).

Communication Ware et al (1983).
More recently, research has focused on patients' service satisfaction, behaviours in service utilisation, the selection of the provider, and compliance:

i) Socio-demographic categories have demonstrated that the most important variables regarding service satisfaction are patient age and gender. Pascoe (1983) found that patient satisfaction increased with patient age and female gender. This was further supported by Clearly et al (1983).

ii) The relationship between health status and satisfaction has often been studied, and Cleary and McNeil (1988) in their review of numerous articles found that the majority reported positive correlations between health status and satisfaction. However, most of the studies lacked clear conceptual or theoretical frameworks. Research has not yet found a simple, direct correlation between patient satisfaction and improved health outcome.

iii) Studies concerning attitudes focused on opinions, expectations and life satisfaction. More recently, attitudes have been defined as behavioural consequences as demonstrated by behaviours in service utilisation, selection of provider and compliance. Swan's (1985) research found that patients with lower expectations tended to be more satisfied. The unique contribution from his study was the finding that equity, i.e. the patient's feeling that he or she has been treated fairly or unfairly, is a very important part of the process of patient satisfaction. He called this factor Equitable Treatment and found that the fulfilment of the expectation (of Equitable Treatment) would impact on patient satisfaction.
With few exceptions, research studies indicate that patient satisfaction is positively related to the accessibility, availability and convenience of care (Cleary and McNeil 1988).

With regard to the actual health care process, research indicates that patient satisfaction is related to perceptions of the provider's technical skills, intelligence, and perceived interpersonal and communications skills. However, it is noted by some authors that technical quality is particularly difficult to assess (Brody 1980 and Donabedian 1982). Ross et al (1993) found that health care satisfaction could be measured by three factors: interpersonal care, technical quality and access. They also noted the difficulty in judging technical quality reliably and stated that often it is confounded by good social skills, and the patients' failure to discriminate between the two.

Other individual elements mentioned in the literature include variables such as pain thresholds or tolerance and type of illness as coded by ICD 9. Not all of these factors have been thoroughly investigated and the variations may affect different levels of satisfaction differentially across patient populations.

The most frequently studied variables have been medical care and, in particular, the communication between doctor and patient. Brody (1980), Locker and Dunt (1978), Gabel et al (1993) and Pascoe (1983) found that patients were more satisfied when they perceived their doctor as being caring and sensitive to their needs. Trzebna (1989) in her studies in Poland, found that doctor affective behaviour seems to be the most important factor in determining patient satisfaction.

Hall et al (1988) conceptualised the patient-provider relationship in terms of task (information giving) and socio-emotional (interpersonal competence) functions.
Galassi et al (1992) added a third component, namely patient participation, to the model of patient-provider relationship, and found good empirical and statistical evidence to justify this addition, which has been supported and extended by Hardy and West (1995). Galassi indicated that increased participation is associated with higher satisfaction scores. Wall and Lischeron (1977) found that, in successful organisations, increased participation led to improved worker-manager relations, and increased trust to a greater worker sense of responsibility. Such organisational findings are now being applied to patient satisfaction. The quality of the patient-provider medical relationship has been found to influence patient satisfaction (Joos and Hichman (1990)), in that the level of trust between patient and staff affects, firstly, patient recovery and satisfaction, secondly, the awareness of a responsibility for treatment interventions and thirdly, the compliance of patients to the treatment regimes (Brody 1980).

Wilkinson (1987), in her studies of satisfaction amongst terminally ill patients in hospices, argued that consumer satisfaction is important in programme evaluation, but it is only one perspective; other factors include professional judgement (as measured by peer review and medical audits). Patient and family satisfaction may also be considered a necessary component in assessment of quality of care. She identified that measures of quality of life are even more important indicators when patients are living permanently in a hospital facility.

There are clearly situationally determined factors evident in much of the patient satisfaction research and Strasser et al. (1993) note that this seriously complicates the comparison of data across services.

Jensen and Haugegaard (1993) from their studies of patient satisfaction among day in-patient and orthopaedic patients, found that day patients were more satisfied than in-
patients, whilst atrhosocopic surgery patients were the least satisfied. Important factors with respect to patient satisfaction included the amount of perioperative information and of post operative out-patient control. They recommended that a higher degree of written information to patients, including information about the risk of complications and failures, would improve patient satisfaction.

In conclusion, the mechanism for forming patient satisfaction judgements and subsequent reactions has yet to be specified, which emphasises the need to develop useful models and theories. However, patient satisfaction is now identified as a causal antecedent to provider behaviours and the more recent research is keenly focused in this direction.

2.3 Proposed Models and Their Limitations

2.3.1. Pascoe (1983) reviewed a number of models of patient satisfaction, most of which were based on marketing and consumer research, such as gap analysis and basic expectancy models. He concluded that patient satisfaction is an evaluation based on a comparison of the salient characteristics of the individual’s health care experience to a subjective standard. The latter could be any one of a combination of subjective ideals, e.g. a sense of what one deserves, an average of past experience in similar situations, or some minimally acceptable level. These hypotheses remain untested.

2.3.2. Linder-Peltz (1982) proposed an expectancy-value model which focused on socio-psychological determinants. Based on studies of job satisfaction, her study defined patient satisfaction as the individual’s positive evaluation of distinct dimensions of health care. Patients’ perceptions, evaluations and comparisons are seen as variables which
antecede positive or negative evaluations of care and service, i.e. attitudes (defined as "... a general evaluation of feeling of favourableness toward the object in question" (Fishbein and Azjen) (1975)), are the basis of judging satisfaction. Linder-Peltz's research studies, however, failed to support her hypotheses based on a value-expectancy model, partly because satisfaction may not only cover a broad domain represented by proper expectations and general values, but also because the subject may be more influenced by the immediate experience than by their underlying set of values concerning medical practice.

2.3.3.
Woodside, Frey and Daly (1980) suggested a framework which links service quality, customer satisfaction and behavioural intentions. Their results provided some support for the general theory that customer judgements of specific service events influence overall satisfaction, which appears to emerge as a moderating variable between service quality and the behavioural intention to return.

2.3.4
The intention to return and re-use a service has become a significant research question, of particular commercial interest to insurance companies in the USA. O'Connor and Shewchuck (1991) developed a service quality model which linked perceptions of service quality to patient satisfaction and the intention to return. This inclusion of a behavioural component to patient satisfaction is in contrast to the majority of studies which have considered only cognitions. Service quality expectations in their study are based on the constructs of reliability, assurance, tangibles, responsiveness and empathy, which accounted for approximately 40% of the variance in patient satisfaction and approximately 60% in an intention to return.
2.3.5.
Fox and Storms (1981) suggested a congruency model which explains the contradictory findings concerning whether socio demographic variables in patient satisfaction are important. They proposed two sets of variables; firstly, orientations toward care, which included what people want and expect from the encounter, and secondly, conditions of care (different approaches to care) which modify the effects of socio-demographic factors on patient satisfaction. Fox et al hypothesised that if orientations and conditions are congruent, then people are satisfied; if the reverse is true, they are dissatisfied. Fox and Storms (1981) found age and sex to be the two strongest socio-demographic variables as predictors of health care satisfaction.

2.3.6
Swan (1985) proposed a model which contains four basic constructs:

i) perceptions of performance,
ii) confirmation of expectations concerning performance,
iii) perception of equitable treatment,
iv) intention to revisit or avoid the hospital in the future.

In his model the patient’s perceptions of performance operates both a direct and indirect cause of intention to return. Swan found that equity (a patient’s feeling that he has been treated fairly) is an important part of the process.

2.3.7
The Aharony and Strasser model (1993) was based on their theoretical work which is consistent with social and cognitive psychological explanations of how satisfaction attitudes are formed, in order to explain how patient judgements are made, together with their associated behaviours, and suggests that patients are not just passive
judges of events which befall them.

This model goes further in explaining patient satisfaction than any other, although it has yet to be tested empirically.

Greenberger and Strasser (1991) reported they were convinced that existing formulations, which view patients in Skinnerian terms, i.e. operating as "black boxes" under total environmental control, are not acceptable in that, whilst most other models tend to take a unidirectional causal view i.e. that provider behaviours cause patient satisfaction, the relationship is in fact probably far more complex and patient satisfaction should rather be viewed as a casual antecedent to provider behaviours.

Aharony and Strasser also asked whether human or environmental factors are more important in contributing to patient satisfaction, as answers to these questions might have a significant impact on how information is best presented to patients in terms of increasing their likelihood of satisfaction. It could also have significant implications for providers wanting to increase patient satisfaction and patients to behave in ways which will have the same effect.

The Aharony and Strasser model suggests distinctions between value judgments and attitudes, in that not all of the former result in attitudes of satisfaction or dissatisfaction, e.g. a patient may label a receptionist's behaviour as "nice" but this may not cause the patient to feel satisfied.

This model offers practitioners a variety of opportunities to improve patient satisfaction. For example practitioners can alter or add stimuli which are likely to increase patient levels of satisfaction (although further investigation is needed on the types of stimuli best encoded by patients). If this model is found to be supported by research it will assist detection and
interventions in the area of patient satisfaction. For example, providers who spend time learning about the beliefs, values, expectations, history and socio-demographic aspects of their patients will acquire valuable information which can help direct them toward providing stimuli which will be judged positively.

2.4 Evaluating the Usefulness of Patient Satisfaction Measures

The time invested in measuring patient satisfaction is often questioned, in terms of whether it is (at all) meaningful and useful. There are hundreds of research studies on the subject, but few indicate the outcome following changes and improvements requested by patients. However, some clear conclusions can be drawn from the research to date, namely:

1. Patients who show high levels of satisfaction with treatment are likely to:

i) continue using the medical care services (Ware, Wright and Snyder 1975)

ii) maintain a relationship with a specific provider (Marquis 1983)

iii) comply with medical regimes (Wartmen 1983)

iv) participate in their own treatment and co-operate with their health care providers by disclosing important medical information and by adhering to prescribed treatment regimens (Bartlett, Grayson and Barker 1984)

2. Other important aspects of why patient satisfaction surveys should be implemented include:

i) Patients can alert providers to their concerns, needs and perception of treatment.

ii) Patient satisfaction is important to the quality assessment process since it helps health care providers identify potential areas for
improvement, such as patient education, follow-up, and hospital procedures.

The overall value of patient satisfaction studies has been seriously questioned in the academic literature. For example, where surveys have been used, little is known about their actual effect on the organisation and delivery of services. In addition, surveys and their interpretation have often been limited by a lack of information regarding some of the known and potential correlates of satisfaction such as socio-demographic characteristics, health status, acuity and type of patient (private or state). Such studies have thus produced inconsistent results (Fox and Storms 1981, Cleary et al 1983).

Vuori (1987) indicated that there are a number of factors which limit potentially the validity of patient satisfaction measures as indicators of quality:

1. Patients lack the expert knowledge to assess accurately the technical competence of medical personnel.

2. The physical or emotional status can easily impede accurate judgement.

3. Patients are influenced by non-medical factors such as the interpersonal skills of the provider, e.g. a doctor with a good bedside manner can easily mask questionable technical quality.

4. Patients are often reluctant to disclose what they really think because of their sense of dependency and their fear of retribution from the provider if they voice discontent.

5. Patients cannot recall accurately aspects of the delivery process.
6. Patient surveys and face-to-face interviews are imperfect means for measuring what are highly subjective phenomena.

Cleary and McNeil (1988) however, highlighted several positive factors:

1. Patients can play an important role in defining quality care by determining which values should be associated with different outcomes. While they may not have the necessary knowledge to assess accurately the technical quality of care they certainly appreciate its importance.

2. Studies have found that the quality of physicians' interpersonal skills influences patients' health outcomes more than the quantity of teaching and instruction given to the patient. Also, it has been suggested that the effects of the physician's communication skills on the patient's adherence to medical regimes are mediated by patient satisfaction and recall (Bartlett et al 1984).

3. Actual healing has been demonstrated as a placebo effect of patients' perceptions of the medical interaction. It has been suggested that this may contribute up to one third of the actual health process (Press, Ganey and Malone 1990).

4. Non-medical factors such as attitude towards patients, interpersonal aspects of care, and physician-patient communication, can cause reduced use of pain medication, shorter lengths of stay, and improved patient compliance (Press, Ganey and Malone 1990).

In conclusion, whilst no direct relationship has been found between patient satisfaction and improved outcomes, empirical evidence does show that satisfied patients are more likely to comply with treatment, and this in turn...
ought to affect outcomes such as the patient's health status, continuity of care and the frequency and length of hospitalisation (Brody (1980)).

2.5 Methodological Problems and Dilemmas in the Measurement of Patient Satisfaction.

The literature reports considerable methodological difficulties in the measurement of patient satisfaction, which are difficult to avoid in empirical research due to the limitations of the constructs and the restrictions of measurements and analysis. In addition, descriptions of analytical methodologies (of, for example, qualitative data) are often not in evidence (Essex, Fox and Groom 1981).

The methodological limitations to the studies which have been published are considerable, and include a lack of:

1. Methodological dilemmas and a standardised approach to patient satisfaction survey research.

2. Clarity and consistency in understanding the determinants of patient satisfaction.

3. Comparative studies conducted in out-patient and in-patient settings.

4. An accepted conceptual or theoretical model of the patient satisfaction process.

5. Consensus within the system of hospital administration and professions on the role which patient satisfaction should play in the assessment of quality.

6. Adjustment of research designs for under-represented groups when using factor analysis.
The reliability and validity of any measurement is usually the most fundamental aspect of empirical research, yet it is recognised that attitude measurement has always been especially vulnerable in these aspects. Rubin (1989) suggested that a major scientific challenge is realised by the delineation of an adequate methodology which meets the critical requirements of the reliability of ratings, the validity of patient evaluations and the comparison of overall patient ratings with other validation standards.

With regard to the reliability of patients' ratings, test-retest reliability for a scale measuring patient attitudes toward hospital care needs to meet a minimum significant level of reliability, i.e. 0.75. Scales measuring patient attitude should also be internally consistent and meet the accepted psychometric standard for group comparisons (Cronbach's alpha greater than 0.6).

A good example of this type of work, quoted by Aharony and Strasser (1993), is illustrated by Ware (1983) and his colleagues, who relied on sound methodology to establish the measurement reliability of their patient satisfaction questionnaire. However, Aharony and Strasser pointed out that this is in contrast to the number of publications on patient satisfaction which do not report the reliability (both internal consistency and test-retest) of their measures.

Another measurement difficulty is the discriminant validity of patient evaluations, i.e. whether patients' ratings really discriminate on multidimensional ratings, and whether those ratings vary for different features of care.

There is thus a need to assess patients' levels of satisfaction more validly. Up to the present, three strategies have been used in the literature; firstly the
comparison of patient ratings to experimentally manipulated features of care, secondly the comparison of patient ratings with ratings from other sources, and thirdly the comparison of patient ratings with other related patient perceptions concerning the hospital stay (Rubin, 1989). It should however be noted that some of these strategies can encounter serious ethical difficulties in implementation, and may be hindered by important considerations of patient treatment.

When such independent ratings have been used, results have been inconclusive. For example, Abdellah and Levine (1957) found that staff members confirmed all patient reports of omissions of care, Ehrlich, Morehead and Trussell (1961) found that when patients' ratings of the quality of care were compared with expert physicians' ratings of the hospital charts, negative ratings concurred more often than positive ratings.

2.7 Other Biases Which Can Affect Patient Satisfaction Evaluations

Non-response bias may be evident, although its effects are unpredictable. Eisen and Grob (1979) for example, found that non-respondents to questionnaires may evaluate care less favourably than those respondents, whereas Ware et al (1983) found that those patients who were more satisfied with their quality of care were less likely to return questionnaires. In addition, response rates may also vary due to the use of different data-gathering methodologies, (the length of the form, the use of follow-up reminder cards or phone calls, etc).

A second bias is the recognised response rate and time since discharge, although Rubin (1989) reported finding no relationship between the timing of the questionnaire and the response rate within the time frame represented in his study (2-12 weeks between hospitalisation and survey).
Bias has also been shown in the type of valuation scale used in questionnaires. La Monica et al (1986) and Oppenhiem (1966) also identified acquiescence bias, which is similar to a halo effect and occurs when a response format of agree/disagree is used.

In addition, Ware and Hays (1980) found that, in an out-patient setting, an excellent-poor evaluation scale with a neutral central item elicited greater variance and a less skewed distribution, and was more highly related to patients' behavioural intentions concerning health care. This is referred to as a Likert scale, but this also can present difficulties in validity, i.e. does a 1 on a Likert scale rating correspond to a qualitative comment, or does it provide the researcher and practitioner with more useful information? It should be noted that a Likert scale implies a normally distributed underlying pattern of scores. Other researchers opted for other variants, e.g. Attkisson and Larson (1979) preferred to use a four point scale with no neutral point.

In summary, it is impossible to rule out completely the biases inherent in the different sampling strategies, but it is crucial to ascertain the relative biasing consequences of various sampling approaches and then to choose the least biasing approach. Nonetheless, for comparisons over time and within the same service, any consistent sampling scheme is probably satisfactory, since the extent of the bias can be assumed to be constant across data collections.

2.8 The aims of the study and Research Questions

This study is a quality evaluation of patient satisfaction in one specific area of an out-patient service, which forms part of a comprehensive evaluation of out-patient services in a large general hospital. In future studies, the evaluation will also include a staff attitude survey and
further patient surveys of other out-patients' departments.

The research questions posed by the organisation were as follows:

1. How satisfied are the patients with the service?

2. What factors are important in affecting patient satisfaction?

3. What is the importance of the sociodemographic factors in predicting patient satisfaction?

2.9 Selection of Key Variables

The questionnaire for this study was constructed by selecting the primary factors suggested in the research literature to be related to patient satisfaction and which were included in recent research by West & Hardy (1993). These were:

i) Patient participation (Galassi 1992)

ii) Patient expectation (Swan 1985)

iii) Staff attitudes (Brody 1980)

iv) Communications (Bowman et al 1992)

v) Environment (Rubin 1989)
Taking evidence from Hall's (1988) and Galassi's (1992) research, it is suggested that patient involvement in care, and what Galassi calls patient participation, is a highly important factor influencing patient satisfaction. Galassi et al (1992) have argued that active participation by the patient is an important factor in medical care, but at the same time patient behaviour is crucially dependent upon staff behaviour. Patients are more likely to participate in their own care where they perceive staff as receptive and willing to give information and respond to questions. Therefore the factor of participation must be further studied for its relative contribution to patient satisfaction and its relationship with staff attitude. There is empirical data being accumulated, most recently from Hardy and West's (1995) research, which indicates that patient participation is vital to patients' perception of satisfaction. Furthermore there is strong evidence from organisational theory that workers who are involved in the decision processes in organisations show greater job satisfaction (Wall and Lischeron, 1992). They identified three sub-elements: interaction, information sharing and influence over decision making. Hardy and West noted from their research the important contribution of hospital facilities, staff attitudes and communication patterns, in contrast to previous basic concepts of satisfaction, e.g. doctor-patient relationships (Brody, 1980).

For each factor a series of questions were chosen following a review of other patient satisfaction questionnaires, in particular from the Hardy and West research (1995).
Due to cost and time limitations, it was considered for this study that a well established measurement of global satisfaction should be used as a standard measure. Attkisson and Zwick (1982) developed an eighteen item questionnaire, The Client Satisfaction Questionnaire (CSQ), to measure global satisfaction. This was later refined by Larsen and Attkisson (1983) to eight questions of satisfaction, which had a reliability coefficient of 0.93, indicating that the CSQ possessed a high degree of internal consistency. The reported results (Larsen and Attkisson, 1983) standardised the instrument on two independent samples of 248 outpatients in different service settings. In reported validity tests a high degree of agreement was found with items and a general satisfaction with services. Furthermore, the research states that the CSQ showed a high degree of positive correlation with staffs' estimates of client satisfaction. Interestingly, though, Larsen (1977) reported the CSQ bore only moderate to low relationships with measures of treatment outcome, suggesting that clients may be able to differentiate between satisfaction with treatment and treatment outcome. With regard to use in other studies, the authors report that the CSQ can easily be supplemented by open ended questions or items of special interest to a particular service, without introducing an undue time demand on patients (approx 3-8 mins). Despite its relative simplicity, the CSQ's assessment of client satisfaction by means of a brief standard scale, is a useful evaluative tool.

In a further report from the literature Larson, Attkisson,
Hargreaves and Nguyen (1979) claimed the CSQ is a response to the several problems and issues currently clouding the measurement of consumer satisfaction, and they report that both the 8 and 16 item Customer Satisfaction Questionnaire were designed in the light of (a) the high rate of reported satisfaction, (b) the lack of a standardised scale for assessing satisfaction, (c) the difficulty in obtaining unbiased samples, and (d) the low relevance of satisfaction data for programme management. A principal-component factor analysis, using squared multiple correlations as initial communality estimates, accounted for 43% of the total variance and roughly 75% of the common variance. When items with high first factor loadings were removed and the analysis repeated, no other factor accounted for 10% of the total variance. In the main analysis, the second factor accounted for less than 7% of the common variance. These findings suggest that only one salient dimension emerged from responses to the items in the preliminary scale. The reported coefficient alpha for the CSQ is 0.93 indicating that it possesses a high degree of internal consistency. Larson et al offer further details on the test's satisfactory concurrent validity and correlations with other variables. They conclude that the CSQ is not just a useful measure of general satisfaction with services, but it possesses a high degree of internal consistency and correlates with therapists' estimates of client satisfaction.

The following are definitions of the five selected factors of patient satisfaction and the global measure of...
satisfaction, the CSQ (*8):

1) **Patient Participation**; the extent to which a patient is involved with their treatment and was tested by, e.g. "To what extent did the doctor share all the information necessary for you to understand your care and treatment?"

2) **Patient Expectations**; the extent to which the patient expects the quality of service to be satisfying and was tested by, e.g. "Did you see the doctor as often as you expected?"

3) **Staff Attitude**; the extent to which the patient judges staff attitudes to be good or bad and was tested by, e.g. "Did you consider the doctor’s attitude to you was..............?"

4) **Communication**; the way a patient is communicated with and was tested by, e.g. "To what extent did people use technical language that was difficult for you to understand?"

5) **Environmental**; this construct looked at the level of satisfaction with a range of environmental stimuli, including a question to measure boredom. A question asked was, e.g. "Was there physical comfort for you while waiting at outpatients to be seen?"

6) **The CSQ*8. The global rating of client satisfaction.**
Questions 26-34 were those which comprised the CSQ8. A question from this section was, e.g. "How would you rate the quality of service you have received?"

The problems of research in this field which have already been identified from the literature review were addressed as far as possible, but difficulties were encountered with the environment of a large general hospital, the need to protect patient confidentiality and the transitory nature of the patient population.
3.0 METHODS

3.1 Setting
The study took place in the outpatients section of the orthopaedic department of a large general hospital in the Midlands.

3.2 Sample
One hundred and ten subjects were selected randomly and interviewed from a population of all patients awaiting their appointments in the waiting room of the out-patients clinic. The subjects consisted of 68 male and 42 female non-specific orthopaedic patients. The age range was 17 - 83 years and the length of treatment ranged from one week to eight years. The research was run over one full week of orthopaedic clinics. Firstly, the subjects were asked about their length of treatment and number of appointments at the clinic. The subjects remained anonymous but sociodemographic data were collected: age, sex, level of educational attainment and health status. Only two patients approached for the study refused, (one said he was in too much pain and the second did not believe in research). For the purpose of this study, health status was defined as the number of visits made to the G.P. in the last year (Brody (1980)).

3.3 Ethical consent
Before commencing data collection, the full questionnaire was submitted to the Hospital Research and Ethics Committee, which consented to its use. Each Clinic
Consultant and Sister was approached and full explanations given regarding the nature of the research. As patients were to remain anonymous and clinical diagnosis was not requested (due to ethical reasons), consent was granted immediately.

3.4 The Interview schedule and Derived Measures (See Appendix II)

Each of the five constructs proposed as a factor of patient satisfaction, consisted of a number of questions. Each question was rated by patients using a Likert type scale.

During an early trial of the questionnaire, it became apparent that many patients wanted to talk about their experiences and the collection of comprehensive data on patient satisfaction was limited by the rigid format of the questionnaire. Furthermore, as already noted, the closed ended questionnaire may increase the positive bias often found in such studies, and patients often wanted to talk more discursively about their experiences, especially if they had been unsatisfactory. In order to attempt to address these concerns, adjustments were made to the format, from a questionnaire to a structured interview. Furthermore it was considered more suitable for the researcher to complete the form rather than the patient, as many of the patients were restricted from full movement of limbs by plaster of Paris or bandages, or were encumbered by crutches and other mobility aids in the waiting room.
3.5 The validity of the interview schedule

The content validity of the schedule was tested by presenting the questionnaire, consisting of 35 items, to six psychologists and asking them to categorise the questions into the five given conceptual categories. The level of agreement was found to have a mean Kappa of 0.81, with the individual Kappa agreements ranged from 0.61 to 1.00. These values support the proposed items had acceptable content validity as indices of the five proposed constructs (see Content Validity Results, Appendix III).

3.6 Reliability of the Interview schedule

The questionnaire in the form of a structured interview was given to 19 patients who were retested over a period of 1-3 weeks on their return to the outpatient clinic. The test-retest reliability was found to be in the range of 0.96 to 0.82 for each of the constructs, producing a high and acceptable reliability over time. (See Test re-test Reliability, Appendix IV)

3.7 Procedures

Administration format.

The items were read to the subjects and their responses recorded by the researcher. It was found that this gave an opportunity to explore any additional feedback which patients wished to give. It also speeded up the administration. It was recognised that the administration of the questionnaire in such a format would undoubtedly compromise some aspects of the validity and reliability,
but for the benefit of patients, it was important to allow subjects to give qualitative information, especially when they were upset or distressed.

The interviews using this patient satisfaction schedule took place in a quiet area in the orthopaedic out-patients' clinic. The patients were read a preamble which explained the research and gave instructions regarding the completion of the questionnaire and once they consented, the author interviewed them using the structured interview (see Appendix II). The schedule was then read aloud item by item to patients, with a choice of four responses to each question. Their responses to each question were recorded by the researcher onto the Likert scale. Qualitative responses offered by the patients were recorded longhand onto the back of each schedule. This qualitative information was collated for feedback to the management of the Hospital via a prepared document (see Appendix VII).
4.0 RESULTS

The data collected was aimed at answering the following proposed questions:

4.1 How satisfied are the patients with the service?

4.2 Which factors are important in affecting patient satisfaction?

4.3 What is the importance of the sociodemographic factors in predicting patient satisfaction?

The main data from the Interview Schedule is shown in Appendix V. The responses from the 110 interview schedules were entered into the SPSS package. It was necessary to make a decision regarding the questions about nurses from the schedule, as it had become clear during the data collection that in this particular outpatient department nurses were not involved in the ongoing treatment of patients, as their role was limited to escorting patients to and from cubicles, and the changing of dressings. Thus questions relating to nurse-patient interactions were answered negatively, as most patients reported they had not seen or spoken with a nurse. These data were therefore eliminated from the analysis (although this information was used by way of feedback in the management report). In addition, some sample sizes varied for some analyses, due to missing data, which was usually due to the refusal of the patient to answer a particular question.
4.1 How satisfied are the patients with the service?

4.1.1 The frequency data showed that for 110 subjects, 48% were very satisfied with the service they had received, 36% were mostly satisfied, 12% of patients were mildly dissatisfied and 4.5% were very dissatisfied.

4.1.2 As far as patient expectations were concerned, 58% received the care they expected, 27% mostly received the care they expected, 11% of patients stated they did not really receive the care they expected and 3.6% said they definitely did not receive the care they expected.

4.1.3 Concerning staff attitude, 74% considered that staff attitude was good, 23% considered that staff attitude was fair, 2% considered it to be poor and 1% considered that staff attitude was bad.

4.1.4 For the measure of patient participation in their care, 40% considered they were involved a great deal, 46% considered they were involved a reasonable amount, 9% considered they were involved somewhat but not enough and 5% considered they were not at all involved.
4.1.5 For the measure of communication the frequency data showed, 44.5% had no difficulties with the communication experienced, 45.5% had just a little, 9% had quite a lot of difficulty and 1% had difficulty all the time.

4.1.6 In terms of access to receive the service (which included waiting times and waiting time for first appointment), 12% found it easy to be seen, 54% found it quite easy, 24.5% found it quite difficult and 10% found it very difficult.

4.1.7 The level of comfort of the environment was considered comfortable for 69% of patients, 8% found it very comfortable, 20% found it uncomfortable and 3% found it very uncomfortable.

4.1.8 Finding the clinic and getting to the department for each appointment was considered very easy for 41%, quite easy for 44.5%, 13% had some difficulty and 2% found it very difficult.

4.1.9 The response to the level of boredom experienced by patients showed that 39% of patients never experienced boredom in hospital, 50% of patients experienced boredom some of the time and 11% were bored all the time.
4.2 What factors are important in affecting patient satisfaction?

Reliability analyses (Cronbach’s Alpha) were conducted and showed that each subset of items comprised a reliable scale.

Table 1. Summary of Derived Measures:

<table>
<thead>
<tr>
<th>Scale</th>
<th>Alpha</th>
<th>Mean</th>
<th>Stan.Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Patient participation</td>
<td>0.66</td>
<td>9.7</td>
<td>2.6</td>
</tr>
<tr>
<td>2. Patient expectation</td>
<td>0.73</td>
<td>16.15</td>
<td>2.7</td>
</tr>
<tr>
<td>3. Staff attitude</td>
<td>0.72</td>
<td>18.6</td>
<td>1.9</td>
</tr>
<tr>
<td>4. Communication</td>
<td>0.46</td>
<td>10.0</td>
<td>1.6</td>
</tr>
<tr>
<td>5. Environment</td>
<td>0.63</td>
<td>14.5</td>
<td>2.4</td>
</tr>
<tr>
<td>6. CSQ</td>
<td>0.94</td>
<td>25.5</td>
<td>5.7</td>
</tr>
</tbody>
</table>

The internal consistency for communication (Cronbach’s alpha = 0.46) was too low and therefore this measure was omitted from any further investigation.

4.3 What is the importance of the sociodemographic factors in predicting patient satisfaction?

The Regression Analysis is shown in Appendix V.

A stepwise/direct entry regression analysis was performed in order to indicate which of the five factors (in addition to age and sex) would predict global patient satisfaction.
The regression analysis identified that three factors explained 72% of the variance. The satisfaction factors which significantly predict patient satisfaction (see Appendix V) were patient participation (Beta = 0.15), patient expectation (Beta = 0.56), and staff attitude (Beta = 0.26). Conversely, sex, age and environment did not predict CSQ scores. In ascending order of importance it is clear that patient expectation is the most important factor influencing patient satisfaction, followed by staff attitude and finally patient participation. The analysis also shows that patient participation and staff attitude are closely correlated and it may be that the contribution of participation may be underestimated because of some masking of effects. Patient participation is also highly correlated with expectations, and therefore the overall impact of patient participation may be reduced. The
relationship between patient participation and staff attitude shows that the better the staff attitude the greater the participation of patients and the higher the patient satisfaction.

Table 3. Summary of Results of Regression analysis

<table>
<thead>
<tr>
<th>var</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>sig of T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Participation</td>
<td>.28</td>
<td>.12</td>
<td>.15</td>
<td>2.35</td>
<td>.02</td>
</tr>
<tr>
<td>Patient Expectation</td>
<td>1.1</td>
<td>.17</td>
<td>.55</td>
<td>6.65</td>
<td>.00</td>
</tr>
<tr>
<td>Staff Attitude</td>
<td>0.72</td>
<td>.22</td>
<td>.25</td>
<td>3.27</td>
<td>.001</td>
</tr>
</tbody>
</table>

On further consideration of the regression analysis, the proportion of variance accounted for is very high for such research, and because there are a number of high correlations in Table 2, there was a need to establish the factorial distinctiveness of the measure. A factor analysis was therefore carried out on the data (Appendix VI).

The factor analysis was a five factor confirmatory analysis and was conducted to see whether the CSQ, Patient Participation, Patient Expectation, Environment and Staff Attitude scales were factorially distinct. The analysis failed to achieve simple structure and produced a factor pattern matrix which is largely uninterpretable. The first factor contains all the CSQ items confirming their internal coherence as reported by Larson and Attkisson (1991). However, a range of items ostensibly forming part of the other scales also loaded on this first factor. None of the remaining four factors could be interpreted easily, suggesting that the respondents did not treat the items as expected, despite the good content validity and test-retest reliability results. Exploratory attempts to find satisfactory solutions with differing numbers of factors failed to reveal a more coherent or simple structure. These findings confirm Nguyen et al’s (1983) observation that it
is difficult to identify empirically distinct aspects of satisfaction, as it seems likely that a halo effect operates in this domain when using this kind of methodology.
5.0 DISCUSSION OF RESULTS

The discussion addresses the three major questions raised in the research, and deals with them in the same order, namely:

5.1 How satisfied are the patients with the service?

Within the constraints of the methodology used to assess satisfaction there was a large degree in evidence. The results showed the degree of satisfaction in four categories, very satisfied (48%), mostly satisfied (36%), mildly dissatisfied (12%) and very dissatisfied (4%). Thus 84% of the patients indicated positive satisfaction, whereas only 16% indicated positive dissatisfaction.

However, it should be noted that these results must be considered in the light of the remaining questions for discussion. i.e. it would be simplistic to conclude that this high level of satisfaction is a definitive statement.

5.2 Which factors are important in affecting patient satisfaction?

The overall level of satisfaction was determined by an examination of several factors. However, the results showed that four factors had a major influence on the score, in that a total of 72% of the variance was shared with patient expectations, staff attitudes and patient participation. Other factors, such as sex, age and environment, were not found to be significant contributory factors, despite previous research which indicated they were significant.

In addition to the questions raised in the research, consideration needs to be given to the general concept of patient satisfaction.

Underpinning the actual research results is the major issue of whether a measure of global satisfaction exists, and, if
so, the nature of its limitations. To a large extent, such a measure is an artificial construct in that it is made up of a combination of variables, and clearly the selection of those variables impacts on the definition of the measure, and thus the results derived from its use. It is therefore necessary to examine the contributory factors used in a measure when considering the results of a global satisfaction test. In summary, there is no one single measure of patient satisfaction.

In addition to problems of definition, this (and other) research highlights other issues, predominantly, measurement problems (as detailed in the Introduction), and the impact of the 'halo effect'. Thus patient satisfaction is an area of research which poses both conceptual and empirical difficulties.

5.3 What is the importance of sociodemographic factors in predicting patient satisfaction?

Sociodemographic factors were in this research found to be of little importance, (contrary to other research findings). This somewhat contradictory position may however be explicable because of definitional problems e.g. numerous pieces of research use different definitions of satisfaction with which definitive variables e.g. sex and age, are correlated.

5.4 Recommendations for Future research

Both the literature and the current study have highlighted the difficulty in identifying and standardising operating measures, which distinctly measure patient satisfaction. Thus future research should focus on these two fundamental areas, i.e. the definition and measurement of patient satisfaction.
Definitions

Studies to date have identified that patient satisfaction is an artificial construct based on multi-factorial models, and to date no single method has been tested enough to be considered a generally accepted measure of satisfaction. Thus the CSQ, for example, which was the main standardised measurement used in this research, was of limited value. It is therefore recommended that further consideration be given to the selection of variables to be included in future models of satisfaction, and that sufficient field research be undertaken to establish a reproducible and accurate measure of satisfaction.

In addition to the variables to be included in any model of satisfaction, it is recommended that consideration also be given to how patients reach decisions on the degree of satisfaction, either in terms of their cognitive or affective processes. Such processes will clearly impact on patients' responses to satisfaction survey questions.

Measurement

The current, and other, studies suffer from relatively low validity due to gathering data from a single source - the patient. This could be remedied by taking data from other sources associated with the patient, e.g. relatives, carers, GP, in order to enable single variables to be measured by data from multiple sources. It is therefore recommended that future studies include the collection of data from multiple sources.

In addition to data sources, problems arise with the use of face to face questionnaires as a data collection method. Vuori (1987) noted that such surveys were poor measures of what are very subjective elements, and that patients tend not to disclose their true opinions for fear of retaliation. It is therefore recommended that other collection methods be considered, e.g. multiple surveys with a patient, or methods which stress patient anonymity, and thus increase objectivity.
Due to the collection method used (a structured interview), considerable qualitative data was offered by the patients, but due to its nature, was not included in the study. This is consistent with other studies, none of which has included the systematic analysis of qualitative data. As the exclusion of such data clearly reduces the volume of data available for analysis, it is recommended that future studies include consideration of methods for the evaluation of qualitative data.

Studies have shown that patient satisfaction levels may vary as between in-patients and out-patients, and between disease classifications. It is thus recommended that future research should include testing in these different categories if concerned with measures of global satisfaction.
6.0 CONCLUSIONS

Such results as this study and similar others must raise the consideration of what is global patient satisfaction and whether there is a construct of global patient satisfaction which can be measured satisfactorily.

The demand for consumer evaluation of services is likely to continue to increase. The research on patient satisfaction indicates that such information does have a role in the evaluation of health care, and in explaining health-related behaviour. However, the creation of empirical and reliable constructs of patient satisfaction is proving to be exceptionally difficult. Any quality of care evaluation needs to be supplemented by an evaluation of accessibility, resource availability and continuity of care. In addition, consumer involvement in expanding the scope of evaluation together with consumer education about the range of alternatives in service provision, are likely to increase the validity and utility of consumer ratings for service planning and development.

A strong word of caution must be issued to hospital managers against the investment of significant finances in assessing patient satisfaction by both unreliable and invalid techniques, which is clearly a regular ongoing practice in most hospitals. Future funding must be aimed at furthering theoretical models which can be tested and proved empirically reliable and valid and from which improved developments, assessments and predictions may be made. The current study confirms the contention of Rubin (1990) who noted "No comprehensive instrument or survey method in the published literature has been tested enough to be recommended as a reproducible, accurate and interpretable quality measure, but a few appear worthy of further testing."

Providers who spend time learning about the values, beliefs, expectations, history and socio-demographic aspects of their patients will acquire valuable information which can direct them towards improvements which will be judged more positively by their patients.
REFERENCES


---ooooOooo---
<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>METHODOLOGY</th>
<th>UPDATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are there any changes in unit labour costs?</td>
<td>Productivity ratio and ULC analysis</td>
<td>Work on establishing baseline completed.</td>
</tr>
<tr>
<td>Has there been any changes in skill mix</td>
<td>Training and assessment records</td>
<td>Compilation of training records in progress.</td>
</tr>
<tr>
<td>Are Care Pathways used effectively?</td>
<td>Care Pathway variance analysis</td>
<td>Analysis of 100 pathways complete assessment of findings in progress.</td>
</tr>
<tr>
<td>Has the perceived level of staff satisfaction improved?</td>
<td>Care Pathway evaluation tool</td>
<td>Proposal to adapt a research tool to be agreed.</td>
</tr>
<tr>
<td>Has the perceived level of patient satisfaction improved with the use of Care Pathways?</td>
<td>CHC structured interviews - Analysis of patient complaints</td>
<td>CHC interviews to be completed by end of January 1995.</td>
</tr>
<tr>
<td>Has the number of steps in 3 key processes decreased?</td>
<td>Data analysis of x-ray, ECG and Pathology</td>
<td>Baseline data collected October 1993. Implementation as per timetable</td>
</tr>
<tr>
<td>Has the amount of time spent “ready for action” in 3 key areas decreased?</td>
<td>Data analysis as above with feed back from staff</td>
<td>as above</td>
</tr>
<tr>
<td>Has overall response time to requests improved?</td>
<td>as above</td>
<td>as above</td>
</tr>
<tr>
<td>Have Care Pathways improved admission and discharge planning?</td>
<td>Care Pathway variance analysis - CHC structured interviews</td>
<td>Analysis of 100 pathways complete assessment of findings in progress</td>
</tr>
<tr>
<td>Do nursing and professional staff perceive documentation to be easier to use?</td>
<td>Care Pathway evaluation tool</td>
<td>Proposal to adapt a research tool to be agreed.</td>
</tr>
<tr>
<td>Do nursing and professional staff perceive communication to be easier?</td>
<td>as above</td>
<td>as above</td>
</tr>
<tr>
<td>Are there any changes in the average length of stay?</td>
<td>Care Pathway variance analysis</td>
<td>Analysis of 100 pathways complete assessment of findings in progress</td>
</tr>
<tr>
<td>Are there changes in post operative infection?</td>
<td>as above</td>
<td>as above</td>
</tr>
<tr>
<td>Are there any changes in post operative pain control?</td>
<td>as above</td>
<td>as above</td>
</tr>
</tbody>
</table>
APPENDIX II. THE PATIENT SATISFACTION INTERVIEW SCHEDULE AND PREAMBLE INSTRUCTIONS TO PATIENTS.

Preamble: I am conducting a patient satisfaction survey about the service you have received from the hospital as part of my doctoral research at Surrey University. I do not work in this hospital and I am an independent researcher, but I have permission to conduct this study. You are not obliged in any way to participate in this and it will not affect your treatment in any way. It is completely confidential and anonymous. It will take approximately 10 minutes to complete by asking you some questions. Would you consent to answering some questions on the service you have received here, it will not ask you personal questions about your treatment details.

Instructions to Patients:
I am going to ask you some questions about the service you have received here in outpatients (only) [Repeat Outpatients if necessary.] After each question I will give you a range of choices for the answer, you pick which one fits what you think about the service. I will read out the question, you can read it, if you want as well, and you can watch me fill in your answer on the sheet.

Show patients the schedule and in particular the Likert scale.
The format is the same for each question, you will get the hang of it as we go along.
Repeat the above instructions at any time as you go along especially if there is any suggestion that the patient may be referring to other services than out-patients i.e. when I was on the ward, or in accident and emergency.
Finally, if there is any doubt on the scale mark down.

Schedule:
THE PATIENT SATISFACTION QUESTIONNAIRE

PLEASE READ THE INTRODUCTION ON THE CARD TO THE PATIENT BEFORE COMPLETING THE QUESTIONNAIRE.

INSTRUCTIONS FOR COMPLETION: Circle the number that relates to how the patient feels. (Prompt minimally if necessary)

THE FORMAT DOES NOT CHANGE THROUGHOUT THE QUESTIONNAIRE

1. Refers to very little, hardly at all, awful, dreadful
2. Not a lot, not very much, some but could be better/more
3. Enough, adequate, fine, OK, alright, acceptable
4. Refers to a great deal, excellent, superior, marvellous

If in doubt, rate down, not up the scale

PATIENT PARTICIPATION

1. To what extent did the doctor share all the information necessary for you to understand your care and treatment?

| 1. Not at all | 2. Some but not enough | 3. A reasonable amount | 4. A great deal |

2. To what extent did you feel the nurse share all the information necessary for you to understand your care and treatment?

| 1. Not at all | 2. Some but not enough | 3. A reasonable amount | 4. A great deal |

3. Was the doctor available to have a discussion with you when needed?


4. Was the nurse available to have a discussion with you when needed?


5. Did the doctors ask you for your views about your treatment?


6. Did the nurses ask you for your views about your treatment?


7. Do you feel you had an influence over decisions about your treatment and care?

**PATIENT EXPECTATIONS**

5. Before you started treatment, what did you think about this hospital?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very bad</td>
<td>Poor</td>
<td>Quite good</td>
<td>Very good</td>
</tr>
</tbody>
</table>

7. Did you get the quality of care you expected?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely not</td>
<td>Not really</td>
<td>Yes, mostly</td>
<td>Definitely yes</td>
</tr>
</tbody>
</table>

10. In the context of NHS reforms/changes, to what extent do you think health care is getting better?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all, far worse</td>
<td>Getting poorer</td>
<td>Getting better</td>
<td>Has become excellent</td>
</tr>
</tbody>
</table>

11. Did you see the doctor as often as you expected?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely no</td>
<td>Not really</td>
<td>almost</td>
<td>Yes</td>
</tr>
</tbody>
</table>

12. To what extent do you have confidence in the service to treat problems effectively?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No confidence</td>
<td>Not much confidence</td>
<td>Some confidence</td>
<td>Full confidence</td>
</tr>
</tbody>
</table>

**STAFF ATTITUDES**

13. The doctors attitude was:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad</td>
<td>Poor</td>
<td>Fair</td>
<td>Good</td>
</tr>
</tbody>
</table>

14. The nurses attitude was:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad</td>
<td>Poor</td>
<td>Fair</td>
<td>Good</td>
</tr>
</tbody>
</table>

15. The other attitude were:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bad</td>
<td>Poor</td>
<td>Fair</td>
<td>Good</td>
</tr>
</tbody>
</table>

16. Were you treated fairly? (i.e. the same as the others)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
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<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Not really</td>
<td>Mostly</td>
<td>Yes, always</td>
</tr>
</tbody>
</table>

17. Were you treated respectfully?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, never</td>
<td>Sometimes</td>
<td>Mostly</td>
<td>Yes, always</td>
</tr>
</tbody>
</table>
### COMMUNICATION

8. Were you spoken to correctly? (i.e. manner and tone)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, not at all</td>
<td>Sometimes</td>
<td>Most of the time</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

9. To what extent did you feel that you were treated as an individual?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Sometimes</td>
<td>Most of the time</td>
<td>Always</td>
<td></td>
</tr>
</tbody>
</table>

10. To what extent did people use technical language that was difficult for you to understand?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the time</td>
<td>Quite a lot</td>
<td>Just on occasions</td>
<td>Not at all</td>
<td></td>
</tr>
</tbody>
</table>

### ENVIRONMENT

1. Was there physical comfort for you?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very uncomfortable</td>
<td>Quite uncomfortable</td>
<td>Comfortable</td>
<td>Very comfortable</td>
<td></td>
</tr>
</tbody>
</table>

2. To what extent was the service available to you? (i.e. easy to be seen, immediate, and waiting times)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all, very difficult</td>
<td>Considerably difficult</td>
<td>Quite easy</td>
<td>Very easy</td>
<td></td>
</tr>
</tbody>
</table>

3. Was there easy access to the service? (i.e. easy to get to, find)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>Some difficulty</td>
<td>Quite easy</td>
<td>Very easy</td>
<td></td>
</tr>
</tbody>
</table>

4. Were you bored?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>All the time</td>
<td>Some of the time</td>
<td>Not really ever</td>
<td>Never</td>
<td></td>
</tr>
</tbody>
</table>

5. Were there adequate refreshments?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Not enough</td>
<td>Adequate</td>
<td>Completely</td>
<td></td>
</tr>
</tbody>
</table>
Questions 26 - 34 are questions from the CSQ 8 to get a measure of global patient satisfaction.

5. How would you rate the quality of service you received?

1 2 3 4
Poor Fair Good Excellent

7. Did you get the kind of service you wanted?

1 2 3 4
No, definitely not No, not really Yes, generally Yes, definitely

3. To what extend has the service met your personal needs?

1 2 3 4
None of my needs met Only a few needs met Most of my needs met Almost all needs met

9. If a friend were in need of similar services, would you recommend this service?

1 2 3 4
No, definitely not No, don’t think so Yes, I think so Yes, definitely

11. How satisfied are you with the amount of help you received?

1 2 3 4
Quite dissatisfied Mildly dissatisfied Mostly satisfied Very satisfied

1. Have the services you received helped you deal more effectively with your problem?

1 2 3 4
No, not at all No, not really Yes, some things have been helped Yes, they helped a great deal

2. In an overall, general sense, how satisfied are you with the service you have received?

1 2 3 4
Very dissatisfied Mildly dissatisfied Mostly satisfied Very satisfied

3. If you were to seek treatment again, would you use the same service?

1 2 3 4
No, definitely not Not if I had an alternative Probably Definitely yes

---------------------------------------------------------- End of the Patient Satisfaction Questionnaire ----------------------------------------------------------
SOCIODEMOGRAPHIC DATA

<table>
<thead>
<tr>
<th>AGE:</th>
</tr>
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<tbody>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>SEX:</th>
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<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>HIGHEST EDUCATIONAL ATTAINMENT:</th>
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</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

**HEALTH STATUS**

<table>
<thead>
<tr>
<th>Number of appointments:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How long has this treatment been going on?</th>
</tr>
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<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>How often would you visit a medical facility last year?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Do you know how many more visits you will be making?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes ☐ No ☐</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number</th>
</tr>
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<tbody>
<tr>
<td>----------------------------</td>
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...
APPENDIX III. KAPPA, CALCULATION OF CONTENT VALIDITY

Calculations: for content validity: Kappa

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<tbody>
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<td>0.61</td>
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<tr>
<td>2</td>
<td>0.85</td>
</tr>
<tr>
<td>3</td>
<td>0.80</td>
</tr>
<tr>
<td>4</td>
<td>0.75</td>
</tr>
<tr>
<td>5</td>
<td>0.80</td>
</tr>
<tr>
<td>6</td>
<td>0.75</td>
</tr>
<tr>
<td>7</td>
<td>0.80</td>
</tr>
<tr>
<td>8</td>
<td>0.85</td>
</tr>
<tr>
<td>9</td>
<td>0.80</td>
</tr>
<tr>
<td>10</td>
<td>0.75</td>
</tr>
<tr>
<td>11</td>
<td>0.80</td>
</tr>
<tr>
<td>12</td>
<td>0.75</td>
</tr>
<tr>
<td>13</td>
<td>0.95</td>
</tr>
<tr>
<td>14</td>
<td>1.00</td>
</tr>
<tr>
<td>15</td>
<td>0.95</td>
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<tr>
<td>Total</td>
<td>12.21</td>
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</tbody>
</table>

Mean Kappa = * 0.81 *
APPENDIX IV. TEST - RETEST RELIABILITY RESULTS OF SCHEDULE

t - tests differences between means.

<table>
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<tr>
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<th>Questions</th>
<th>Reliability</th>
<th>Subjects</th>
<th>Co-eff.</th>
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APPENDIX V. TABLES OF STATISTICAL ANALYSIS OF THE PATIENT SATISFACTION SCHEDULE.

Summary of regression analysis.

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<tr>
<th>Variable</th>
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Adjusted R Square = .71667

F(3,91) = 80.25 p<0.0000
APPENDIX VI

Confirmatory Factor Analysis for 5 factors obliquely rotated.

Factor Pattern Matrix:

<table>
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<tr>
<th>Factor</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
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Factor Correlation Matrix:

<table>
<thead>
<tr>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
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</thead>
<tbody>
<tr>
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Five factors account for 61.1% of the total variance.
APPENDIX VII. QUALITATIVE FEEDBACK FROM PATIENTS FOR CHIEF EXECUTIVE OF TRUST.

1.0 Evidence collected from patient interviews and patient feedback.

1.1. Boredom is still an issue for a significant percentage (61%) of patients. The content of the TV is not relevant to the educational status of many patients, and the content is also somewhat out of date. Suggestion that they try reruns of comedy shows eg, Mr. Bean, Coronation Street, Benny Hill etc.

1.2. Patients need not be shuffled around from the waiting room to the chairs beside the cubicles and then into the cubicles, this disrupts them and builds up anxiety by separating them from their escorts; they have to leave their refreshments and sets their expectations that they are about to be seen, this is not always the case.

1.3. A significant number of patients find the seating arrangements uncomfortable (23%), this is usually due to their actual medical problems, professional staff should be asked to address this issue and make some recommendations, especially for back and hip patients who are often waiting for two hours to be seen. This was noted especially on a Monday clinic. This issue could be addressed with the following item.

1.4. The format of the clinics should be addressed there appears to be an erratic influx of patients at particular times and on particular days. Reassignment of Consultants clinics should be considered, and this should take into account pain patients and those of chronic difficulties for which the waiting time should be definitely decreased. Some older patients (80+) should be seen first and not left for four hours in their wheelchairs without toileting and refreshments. In particular those who may have complicated escort arrangements and are dependant physically on others.

1.5. The role of the qualified nurses should be urgently reviewed in the orthopaedic clinics. They are under-utilised or employed in functions that could be met by untrained staff, such as guiding patients to other seats or into a cubicle, the verbal reports and survey results showed that patients had little or no contact with nurses in these clinics.
1.6. The role of the volunteers WRVS should also be reviewed, they may have more to offer in reducing boredom and giving refreshments to people, especially the elderly patients. Patients feel confused by the instructions given by WRVS and then the auxiliary nurses.

1.7. The white Nobo board which gives patients feedback regarding the number of patients being seen in each clinic is helpful, if read. But the educational standards of patients may not assist comprehension of the written information. On many interviews patients requested verbal feedback as to the waiting situation and time. This would reduce anger and frustration of patients waiting.

1.8. There could be a level of triage or assessment made by the qualified nurse to review the incoming patients for short appointments and ones which require full examinations. The process of through-put should be investigated, in order to facilitate a quicker through-put and more discussion time for patients. Perhaps the nurse reviewing the patient first and identifying any worries or queries that the patient has, might include community care support, social services issues and mobility or pain issues.

1.9. Many patients who were dissatisfied complained about lack of follow-up on returning home from surgery in hospital, and waiting four or more weeks before attending follow-up in clinic. Perhaps consideration could be given to a qualified nurse running a separate clinic for telephone calls and immediate inquiries, or following up by telephoning patients discharged after one week to check on progress.

1.10. In particular for disabled and partially mobile patients there is considerable difficulty in gaining access to the clinic and if they are driving there are great difficulties in parking.

1.11. The booking receptionists are often not able to fulfil the medical doctors requests for next appointment.

1.12. Patients complained of failure to see the same doctor consecutively, they often see three different doctors over their treatment, and patients find this confusing, and also means repetitiveness and lack of continuity, as one patient pointed out, how would the doctor know the level of improvement, if he didn’t see it last week.
1.13. The level of nurse contact with patients in all clinics was very low indeed. Patients reported never speaking to a nurse.

1.14. It may be helpful to develop a checklist for patients which they have a nurse to check on the quality of their treatment, doubts and worries.
REFERENCES


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*Social science and Medicine* 37 (5), 591-602.

Shropshire Health Authority and the University of Birmingham.


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