

Dental aspects of stigma in relation to mental and physical handicap in a Chinese population of Hong Kong.

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**Dental Aspects of Stigma in Relation to
Mental and Physical Handicap
in
A Chinese Population of
Hong Kong**

By David O'Donnell

A thesis submitted to the University of London
for the degree of Doctor of Philosophy

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1998

1



ABSTRACT

The purpose of this study was to investigate the stigma of mental and physical handicap and its affects on the provision of dental care.

Three groups of mentally and physically handicapped children, 4 year olds (n = 309), 14 year olds (n = 174) and 25 to 35 year olds (n = 265), were randomly selected from institutions in Hong Kong. The sample was dentally examined and dental status and treatment need assessed. Their parents were also interviewed. Two psychometric scales, the Scale to Determine Attitudes Toward Disabled Persons (SADP), and the Parental Attitude Scale, a scale derived for this study, were used to assess attitude towards disabled persons in general, and specifically towards their own child. A questionnaire was also developed investigating parental experiences and feelings towards their handicapped child. Socioeconomic data was also collected and information on the dental care delivery pattern experienced by their child.

Dental practitioner members of the Hong Kong Dental Association were circulated with the SADP, the Dental Practitioner Attitude Scale, a scale derived for this study, and a questionnaire relating to qualifications and practice. A 62.5% response rate was achieved.

Caries experience was comparable to the non handicapped in the 4 year old group, lower in the other age groups, but with a high D component in the 25 to 35 year olds. Dental utilisation was low, the main reasons being financial, transport problems and a belief that the dentist would not treat.

There was a gradation of parental attitude towards handicapped persons corresponding to education, age and socioeconomic factors.

Dentists were not enthusiastic about treating handicapped patients for mainly financial reasons. Both parents and dentists felt strongly that government should provide facilities and be responsible for the treatment of handicapped individuals.

The hypothesis of the study was mainly fulfilled. The stigma of handicap is a barrier to dental care, but is more socioeconomic than the way that handicapped persons present themselves.

ACKNOWLEDGEMENTS

I would like to express my gratitude to the following people who have helped me in the completion of this project.

Professor Aubrey Sheiham, my project supervisor, for his expert advice, guidance and patience.

Dr. Carl Leung whose help in smoothing the way into gaining access to the various institutions in Hong Kong was greatly appreciated

Mr Shadow Yeung for his invaluable help in the statistical analysis of the study data

All the staff of all the institutions visited and the parents of the children examined for their unconditional co-operation

The Spastics Association of Hong Kong

Carritas Hong Kong

The Hong Kong Association for Mental Handicap

Lastly, but most importantly, my long suffering wife, Jennifer, for her support, patience and understanding over the past years.

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1.1 Background to the Study

This study attempts to evaluate stigma as a significant barrier to dental care of mentally and physically handicapped persons in the Chinese community in Hong Kong.

People who are mentally and physically handicapped are different from the "normal" population. They look different and behave differently. It is the contention that it is the stigma of this difference that is a major barrier to obtaining the dental care they need.

Various studies on the dental status of the population of Hong Kong have been carried out (Lind et al 1986, King et al 1986, Wei et al 1993). Very little information is available on the dental status of the handicapped population, except for a few studies on small sections of that population (O'Donnell 1988, O'Donnell 1992), and one on handicapped children and young adults (Davies et al 1985). They indicate, quite strongly, that dental treatment needs of handicapped children in Hong Kong are not being met, despite the fact that the majority of handicapped children are amenable to simple, routine dental care.

Similarly, there is little information on dental health care providers' attitudes towards treating handicapped patients in Hong Kong (Bedi et al 1989). Only one study on parental attitude towards their handicapped child (Tang et al 1976) has been

undertaken in Hong Kong. The present study will provide current information on the dental status of the major handicapped population in Hong Kong, and assess how important a barrier, stigma is, to them obtaining dental care.

1.2 Hong Kong Population

The population of Hong Kong is just under six million people (Hong Kong Government 1991). Approximately 96.1% of the population of Hong Kong are ethnic Chinese. The majority of the population is Southern Chinese, most being from the province of Guandong (85%). The population has become essentially a group of predominately Cantonese speaking people who may be considered "Hong Kong Chinese".

1.2.1 The Handicapped Population of Hong Kong

The population census of 1981 included a section on disablement characteristics (Hong Kong Government 1981), which was not present in the 1991 census. From a 20% sample size, 41,728 were found to be handicapped, of which 15,423 (37.0%) were physically handicapped and 9,212 (22.1%) mentally retarded. The rest (41.0%) were blind, deaf or mentally ill (Table 1.1). A total of 59.0% of the handicapped population of Hong Kong was mentally impaired and physically disabled. The population of Hong Kong in 1981 was 4,986,560 giving an overall prevalence of handicapped persons at 8 per 1,000, 208,690 persons. Projecting that forward to the present population of 6,000,000, the number of handicapped persons is projected to be 240,000 of which 141,000 will be mentally and physically handicapped.

Table 1.1 Number and Percentage Distribution of Handicapped Persons in Hong Kong by Type.

Type of Handicap	No	%	Per 1,000 Pop.
Mentally impaired	9,212	22.1	1.85
Physically disabled	15,425	37.0	3.73
Deaf	6,350	15.2	1.27
Blind	4,406	10.6	0.88
Mentally ill	6,348	15.2	1.27
Total	41,738	100.0	8.37

Note: 20% of Population Sample Size

The Hong Kong government provides free education for the general population up to the third form, at secondary level, at government schools. Education and training facilities for the handicapped are provided at a small number of government schools and workshops, but in the main by charitable and religious organisations, supported by government funds, with extra funding from fees and donations. This allows the institutions to run themselves with minimal government participation. The development of these services for the handicapped, in Hong Kong, is discussed in Appendix I.

1.2.2 Dental Health Care Services

There is no national health service or state insurance schemes for the provision of health care services in Hong Kong.

Dental services can be divided into three main types (Appendix II):

- 1) Public Dental Services
- 2) Private Practice
- 3) Others

The Hong Kong government does not distinguish between the handicapped and the "normal" population in terms of dental services available. Therefore, handicapped persons, seeking dental care, have the same services available to them as the general public

1.3 Definitions for the Study

Handicap

The World Health Organisation (Appendix III) developed the International Classification of Impairments, Disabilities and Handicaps based on the lines of International Classification of Disease. The classifications are in a health care context and attempt to rationalise the concepts of impairment and disability and their socialising effect by the term handicap

Strictly speaking the mentally handicapped are in fact mentally impaired, and the physically handicapped are physically disabled, as defined by the above classification. However both are handicapped by their impairment and disability. This is the basis of the use of the term handicapped in the study.

The degree of mental impairment in individual varies, and is classified by severity using Intelligence Quotient as a measure. This classification is described fully in Appendix IV.

Stigma

A great deal has been written about stigma, and this will be dealt with fully in the literature review in Chapter 2. The term "stigma" originated from the Greeks, referring to bodily signs designed to expose something unusual and bad about the moral status of the signifier. For example, signs were cut or burnt into the body, which advertised that the bearer was a criminal or slave. In a more modern context, Goffman refers to the term "stigma" as "an attribute that is deeply discrediting" (Goffman 1986)

This definition of stigma and its relation to mental and physical handicap is used in this study.

This study is concerned with the role of stigma associated with physical and mental handicap and the provision of dental care to this section of the community in the Chinese population of Hong Kong. The subject will be addressed by studying the following aspects of dental care for mentally and physically handicapped persons.

1. The historical and anthropological influences which affect the Chinese cultural attitudes towards the mentally and physically handicapped today.
2. The Parental/Family attitudes towards a mentally and/or a physically handicapped individual within their unit, and how this affects the delivery of dental care to the child.
3. Dental care provider attitudes towards mentally and/or physically handicapped individuals, and how these affect decisions to treat handicapped people.
4. The dental status will be determined and the dental treatment need of this population assessed.

Introduction

The hypothesis of the study is that the stigma of a mental and/or physical handicap is a major barrier to the delivery of dental care to people with physical and mental handicaps in the Chinese population of Hong Kong.

2.1 Handicap and Stigma, a General Overview**2.1.1 The Concept of Handicap**

The term handicapped is used with great variability both in the literature and everyday usage. The term is often used without prior definition as a vague synonym for disability and impairment (Lees et al, 1974) and a simplistic, collective term for disorders, diseases and injuries, together with their effects.

In the United Kingdom, the Office of Population Censuses and Surveys, published a report (Harris et al, 1971) aimed at giving an estimate of the numbers of "impaired" and "handicapped" people, aged 16 years and over and living in private households in Great Britain, defined their key terms as.

Impairment.

Lacking part of all of a limb, or having a defective limb, organ or mechanism of the body.

Disablement:

The loss or reduction of functional ability

Handicap

The disadvantage or restriction of activity caused by disability. Use of these definitions, and particularly that of "handicapped", has had considerable social influence in Great Britain. The social security system, in Britain, is responsible for payment of benefits to people who are incapacitated, and the Harris definition was used in this way (DHSS 1972). As a result, a "handicapped" person in the DHSS report is one "who is incapable of doing what

normal person can do, whether in terms of earning capacity or working capacity".

The problem with the Harris definition of handicap is that the emphasis is on restriction of activity, and so people suffering from mental impairment, and possibly disadvantaged as a result, were not included among the handicapped unless they were also physically restricted.

Agerholm (1975) regarded handicap as being intrinsic and extrinsic, classifying handicap on this basis.

A handicap is a long term disadvantage which adversely affects an individual's capacity to achieve the personal and economic independence, which is normal for his peers

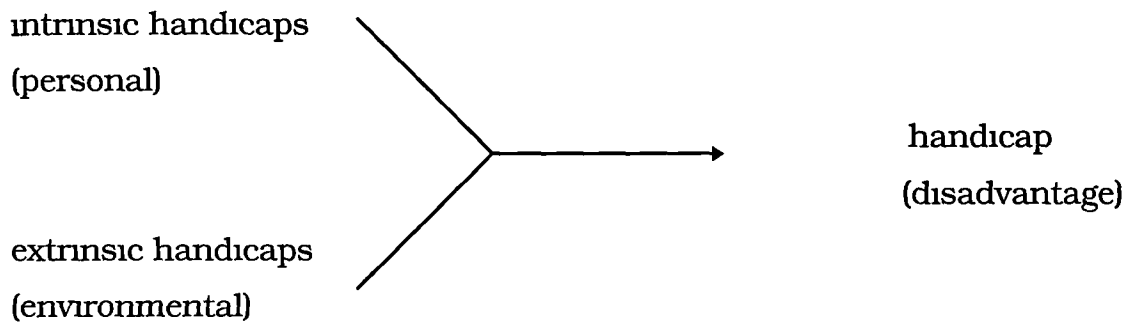
An intrinsic handicap is such a disadvantage, arising from the individual's own characteristics, from which he cannot be separated.

An extrinsic handicap is such a disadvantage arising from the individual's environment or circumstances

From these definitions, handicap is primarily equated with the experience of disadvantage, which comes from the individual's characteristics, or other circumstances, and can be represented schematically in Fig 2 1.

It appears that in this terminology, in which "handicap" is conceived as disadvantage, "handicaps" are not really being regarded as disadvantages so much as entities, intrinsic or extrinsic, which give rise to the "handicap".

Fig 2.1. Schematic Representation of Handicap



Mitchell (1973) considers handicaps as a sub-set of disabilities rather than as consequent on disabilities and explains disability as:

"The word disability refers to abnormality which interferes with function to a significant degree. A complete diagnosis should describe the disability, the abnormality underlying it and the cause of the abnormality."

To illustrate the concept of certain impairments and disabilities constituting handicaps, Mitchell gives the following examples.

"A child may be born with one finger-nail missing. This is a malformation, but does not constitute a disability, since it does not interfere in any way with the function of the hand.

A man with red-green colour blindness has a disability since he cannot distinguish colours. Whether it constitutes a handicap, or not, depends on his circumstances. If he is a farm worker, it makes no difference, as he will probably be unaware of his problem. If he is a train driver, the colour blindness may be such a handicap that he cannot pursue his occupation.

In the same way, a degree of intellectual subnormality, which is only a slight handicap to a child in a remote rural community,

may be much more serious in the child of university graduates living in a large city, of whom more is expected."

These terminological schemes seen in the writings of Agerholm, Mitchell and Harris are seen as an attempt to clarify the terms "Impairment", "Disability" and "Handicap" as a consequence of disease. Stolotov (1971) in the United States of America defined disability as "lost function", which includes employment and that disability should be described in terms of loss of social, vocational and psychological function as well as physical function. Townsend, (1967) indicated that the term "handicapped" could be considered as:

"A pattern of behaviour of a socially deviant kind," and.

"A socially defined position or status, usually of inferiority."

Freidson (1965) using similar connotations as Townsend, regarded "handicap" as a.

"disability manifesting itself by means of social and cultural variables as opposed to biological and psychological variables."

Handicap is conceived primarily as deviance from norms:

"handicap is an imputation of an undesirable difference from others. a person said to be handicapped is so defined because he deviates from what he himself, or others, believe to be normal or appropriate."

In rehabilitation medicine, where rehabilitation is the correction of deviance from a social norm rather than the correction of malfunction alone, these concepts become important. The American National Council of Rehabilitation defines the task of rehabilitation as that of restoring the "handicapped" person to

"the fullest physical, mental, physical, social, vocational and economic usefulness of which they are capable."

Myers (1965) traced the changes in rehabilitation medicine in the definition of its tasks. At one time,

"disability was defined narrowly to include only the physically handicapped. Over time, the term has broadened to include mental and emotional impairment, chronic illness and ageing."

Rehabilitation is now viewed as:

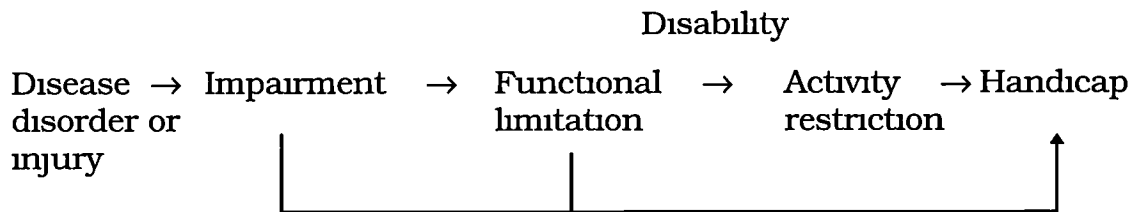
"re-establishment of the individual in society within the limits of his handicap."

In an attempt to clarify the concepts of "handicap", "disability" and "impairment" on an international rather than an individual and personal basis, the World Health Organisation commissioned Dr P.H.N. Wood, of the Arthritis and Rheumatism Council's Epidemiological Unit, to prepare a classification on the lines of the International Classification of Disease (WHO 1977, 9th Revision). The development of a clear and consistent terminology was of prime concern, and in Wood's draft paper (Wood 1975), he defined the three terms in such a way as to link them in a conceptual scheme so that handicap became a consequent on disability, disability on impairment and impairment on disease.

An adaptation of this was suggested by Taylor (1977) and is seen schematically in Fig 2.2.

Taylor's ideas seem to indicate that a state of handicap might result by the interaction of social forces with those of impairment and disability.

Fig 2.2. Taylor's Elaboration of Wood's Terminological Scheme (1977)



Changes in self-perception or the expectations and behaviour of other people

The suggestion is that not only does handicap reflect an individual's inability to play a personally acceptable role, but that the degree to which an individual is perceived by others as impaired or disabled will have an effect on the degree of handicap which results.

The scheme of the International Classification of Impairments, Disabilities and Handicaps (I C.I.D.H.)(WHO 1980) indicates that handicap is a result of impairment and disability and is sequential. The basic scheme is seen in Fig 2 3

This was further developed upon and is seen in Fig 2 4.

Fig 2.3. Basic I.C.I.D.H. Concepts

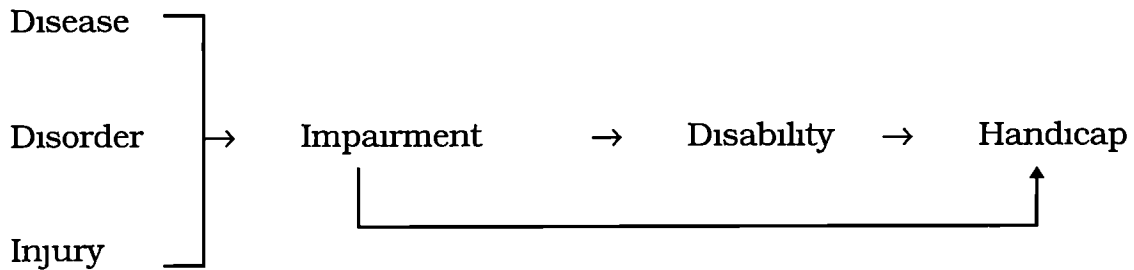
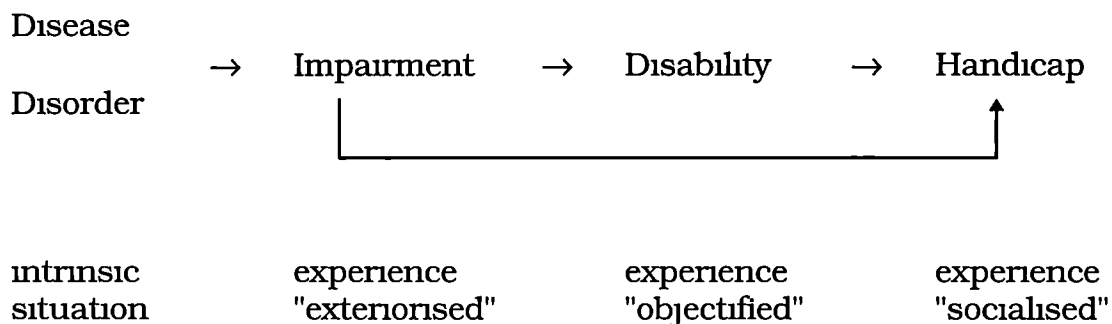


Fig 2.4. Developed I.C.I.D.H. Scheme of Classification



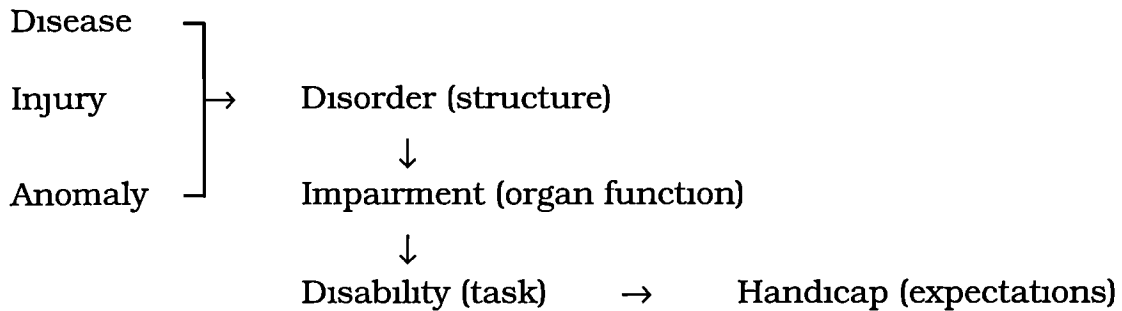
Handicap is seen as a logical sequence of events represented above schematically. However handicap can sometimes result from impairment without disability, as seen schematically above. The example given in the I C I D.H to illustrate this is that of the child with coeliac disease. Disability is not there, but handicap as the inability to eat the same food as other children is.

The International Classification of Impairments, Disabilities and Handicaps (I C.I.D H) is seen in Appendix III.

A further adaptation of this model was put forward by Locker (1988), where the concepts are linked in a linear fashion to

produce an overall scheme which moves from a biological to a behavioral then social level of analysis. This is illustrated in Fig 2.5.

Fig 2.5. Locker's Conceptual Model (W.H.O. 1980, Adapted)



In this model, handicap may be the outcome of a linear progression along the full sequence of events, as shown.

Locker (1988) uses rheumatoid arthritis as an illustration. This disease affects the supporting tissues of joints which become painful, weakened and limited in their range of movement. This imposes severe restrictions on the individual's ability to perform the basic activities of daily living. This disorder demonstrates that disability may be a product of discomfort as well as functional limitations. Even before rheumatoid arthritis has damaged the joints, the chronic pain associated with the condition can be severely disabling.

As handicap can also be the product of conditions which involve functional limitations but do not cause disability, Wood (1980) quotes the case of an individual with coeliac disease who is able to lead a normal life, in terms of daily activities, but who may be disadvantaged by the need to follow a special and expensive diet.

Handicap may also result from conditions which are neither functionally limiting nor disabling, as in the case of facial disfigurement which causes embarrassment and other problems in relationships with others.

Locker (1988) also indicates that this dynamic model is applicable to dental and oral conditions and quotes a paper by Smith and Sheiham (1979) which concerns the oral health problems of the elderly. As many of the elderly they interviewed were continuing to manage with poor and ill fitting dentures, edentulism (impairment), largely due to caries and periodontal problems (disease), resulted in difficulties in chewing (functional limitation) which in return restricted their ability to eat (disability). Many were unable to eat foods of their choice, and many found it took a long time to complete a meal, and this distracted from the pleasure of eating with others (handicap).

2.1.2 Mental Handicap

The term "mental handicap" is used almost universally as synonymous with mental impairment and disability. The I.C.I D H contends that the term "handicap" is not appropriate in this case, and that "impairment" is a more accurate terminology. However, it does concede that in most countries the term "mental handicap" is used to describe both the existence and consequences of disorders which result in intellectual defect. The I C.I D H. suggests that whilst the term "mental handicap" is used universally, and conveys a meaning, "handicap" is a hard word with pejorative interference from alternative usage. "Impairment" has a fairly firm neutral tone with less stigma attached to it.

Recently, even softer terminology has been introduced, with "learning difficulty" replacing "handicap", "impairment" and "disability" as far as intellectual deficiency is concerned. The term mental handicap will continue to be used in this study.

Mental handicap involves some degree of mental retardation. The classification of mental retardation is still largely based on the scores of intelligence tests. Based on the measured intelligence levels, the American Association on Mental Deficiency suggests five categories to differentiate the severity of subnormality (Gunzburg 1968), namely.

- 1) Borderline Retarded
- 2) Mildly Retarded
- 3) Moderately Retarded
- 4) Severely Retarded
- 5) Profoundly Retarded

Among these five categories, the borderline retarded would probably be regarded as normal, although they would still require training in schools.

More recently the American Psychiatric Association (1987) has defined mental retardation by three criteria. These include:

1. Significantly sub-average general intelligence.
2. Significant deficit or impairment in adaptive functioning
3. Onset of the above before the age of 18 years.

Significant sub-average intelligence is defined by intelligence quotient (IQ) A person who demonstrates an IQ of less than 70 is considered to have a sub-average intelligence. An IQ is obtained by dividing the mental age of the child by the chronological age and then multiplying the result by 100

Adaptive functioning refers to the effectiveness of an individual in social skills, communication and the tasks of daily living (American Psychiatric Association 1987). A child with a subnormal IQ is considered mentally impaired only if the deficit in adaptive functioning is significant enough to interfere social adjustment and personal well-being of the child. If the onset of the low IQ and deficit in adaptive function occurs after the age of 18 years, the individual is deemed to have dementia rather than mental impairment (Leung et al 1995). The American Psychiatric Classification of mental impairment, based on IQ, is seen in Table 2.1.

Table 2.1. The Classification of Mental Impairment by IQ

Degree of Severity IQ	
Mild	55-70
Moderate	35-40 to 50-55
Severe	20-25 to 35-40
Profound	Below 20-25

In Hong Kong, the American model has not been followed. The usual practice is to divide mental impairment into three groups (Hong Kong Government 1984). These groups are:

- A) Mild
- B) Moderate
- C) Severe

The profoundly impaired, in the American Psychiatric Association classification, is put under the category of severe grade impairment.

For the purpose of this study the three grade system of classification of mental impairment will be used as this has been adopted as the benchmark system by the Hong Kong government and used by all the agencies catering for the mentally handicapped

A more detailed explanation of the grades is seen in Appendix IV.

2.1.3 Stigma

The word "stigma" comes from the Greek "stigmatos" meaning "mark made by a pointed instrument, a brand". These bodily signs were designed to expose something unusual or bad about the moral status of the signifier. The Greeks cut or burnt these signs into the body to show to all that the person was a slave or criminal so that it could be seen that this person should be avoided.

In early Christian times two further dimensions were added. one referring to bodily signs of holy grace, signs mimicking those of the crucifixion; the other, a medical allusion to this religious allusion, referred to bodily signs of physical disorder. In more modern times the term stigma has tended to revert to its former meaning, of an individual whose marks are a sign of disgrace (Taylor 1991).

Society categorizes people and places into these categories, people with attributes felt to be ordinary and natural for these categories

In Goffman's (1986) classic text, he defined stigma as "an attribute that is deeply discrediting". The attribute makes the bearer different from others in an undesirable way. Goffman

notes that it is not the attribute itself that is the problem, rather, the stigma emerges from the socially damaged relationship between the possessor of the stigma and others, "Normal".

Goffman also says that stigma is sometimes called a "failing, a shortcoming, a handicap" so reflecting the view of Taylor (1977) where handicap may be the result of social interaction with impairment and disability. A common viewpoint is that stigma calls into question the bearers social legitimacy and can therefore be considered as a particular form of social deviance (Davis 1961, Haber et al 1971, Levitin 1975, Glassner et al 1979).

Elliott et al (1982) distinguishes three types of stigma:

- a. **Physical stigmata:** that which involves some kind of physical defect. e.g. hemiplegia, and to some extent race and colour.
- b. **Mental stigmata:** that which involves impaired cognitive function. e.g. mental impairment
- c. **Moral stigmata:** that which involves violations of social norms regulating behaviour or belief. e.g. criminality, deviant sexual behaviour.

Elliott et al (1982), and Jones et al (1984) look at the disruptive effect of stigma and recognise six dimensional levels for the effect of this disruption. These levels are:

1 Visibility:

This is the most obvious as it is difficult to hide most physical stigmata. Examples of this are facial scars, broken nose and paraplegia. Elliott et al, go on to say that physical stigmata can disqualify a person before an encounter begins and will trigger possible stereotypic attitudes held by so called "normal" people, and so influence the lines of action they will take. The longer the

stigmatic characteristic can be hidden, the longer its disruptive influence can be avoided.

The negative side of this is that should the deception be revealed, the stigmatized person may find that he, or she, is in more serious trouble.

2. Pervasiveness.

The stigmatizing nature of an attribute depends on the context in which it is perceived, and some attributes discredit the individual in all situations.

Mental and moral stigmata tend to pervade a wide range of social encounters. All encounters with mentally impaired people will have to cope with its stigma.

Similarly with moral stigma, although, Elliot maintains, on a less rational basis, as the emotional reactions these encounters generate are likely to mean greater pervasiveness.

3. Clarity:

This is the degree of consensus that an attribute is stigmatizing. Mental stigmata are some of the clearest in this context. Similarly with physical stigmata, but there is likely to be variance. The extent of the consensus may depend on the severity of the affliction. The example given is that of persons suffering from facial burns may evoke greater consensus than those suffering from polio.

4. Centrality

This is the degree to which a stigmata is seen to reflect the person's real self. It is linked to a person's biographic identity and can be very disruptive in social interaction. Mental and

moral stigmata are considered to be central but physical stigmata are more likely to be considered as peripheral. The explanation for this being that the relevance of the stigma can influence an interaction.

Relevance refers to the extent to which the offending attribute is involved in the "doing" of the encounter. Mental handicap is relevant in an encounter and special care has to be taken in the most simplest of encounters

Physical stigmata are not relevant, unless some aspect of the social interaction calls for behaviour that is prevented e.g. A highly visible stigmata, such as hemiplegia, is irrelevant if the purpose of the social encounter is to play cards.

5. Salience.

This is an overarching dimension, in that the salience of a stigmata depends on its standing with regard to the other dimensions described

Salience is the extent to which a stigmata cannot be ignored. Salience is not the same as relevance an example being homosexuality and some countries armed forces. Here the stigmata is salient but not relevant. However there may be disagreement in judging the salience of a stigma the example of homosexuality being used again. One person may be able to overlook the problem in social encounters, whilst for others it may intrude heavily on the encounter. This argument then progresses to "locus of responsibility", where stigma is perceived to be involuntarily acquired or deliberately inflicted. A physically handicapped or a mentally retarded individual usually has no control over the acquisition of the stigmata. Similarly, racial minorities are perceived in this way. However, criminals are perceived to have chosen their stigmata

Those who have not chosen their stigma may find that others are more sympathetic to their plight (Farina et al 1968), and that personal responsibility for the stigma will determine social reaction (Pearson 1951, Freidson 1965, Albrecht et al 1982).

6. *Removability:*

Once acquired the stigma often becomes an integral part of the bearer, where the bearer has no alternative power. An example of this is mental and physical handicap, although physical handicap can be altered to some extent by prosthetic devices.

Elliot et al (1982) cites a further example of non removability as that of the mentally ill, where others may not want to remove the stigma even though the cause is no longer present.

Goffman (1986), in a similar vein, recognises three "grossly" different types of stigma. He does not attribute dimensions to the stigma. These different types of stigma are.

1. "Abominations of the body" or physical deformities
2. Blemishes of individual character. Examples given are "weak will, rigid beliefs, dishonesty, mental disorder, addiction, alcoholism, homosexuality, unemployment, suicide attempts and radical political behaviour."
3. Tribal stigma. Stigma of race (colour) nation and religion beliefs, these being stigma that can be transmitted through families.

There seems to be only two types of persons in the world of the stigmatised: the stigmatised and the "normal" person. The stigmatised possess a stigma, an undesired difference from what is anticipated. Those who do not possess this are termed "normal" (Goffman 1986)

Stigma is a label distinguishing the stigmatised from the "normal". The significance of this label is in the stigma itself. The label may produce the deviant behaviour of the stigmatised, and the person will become what he is labelled (Becker 1973, Manning 1975).

The literature on the stigma of mental and physical handicap using the "labelling" approach have focused on the negative aspect of possessing a stigmatizing attribute (Davis 1961, Gove 1976, Hanks et al 1981). However, it has been shown also that labelling may legitimise a stigma, reduce role strain and provide a handicapped person with adaptive opportunities (Haber et al 1971, Herman et al 1990).

Research has shown that interactions between "normal" and stigmatized are often strained, both for the "normal" and the afflicted (Farina et al 1965, Kleck 1966, Kleck et al 1966, Farina et al 1968, Farina et al 1971, Comer et al 1972) However it has been shown that the degree of acceptance of a stigma is dependent on the perceived responsibility for that stigma (Farina et al 1965) Those seen as not responsible for their stigma were more easily integrated into a social encounter. Also it has been found that acknowledging a stigma led to less difficulty in being with a normal person (Hastorf et al 1979).

The reaction of "normal" people towards the mentally and physically handicapped is not, in general, good. There is a widespread view in society that handicapped persons violate cultural norms and values (Hahn 1988) and these individuals are exposed to a stigma that makes them "not quite normal" (Goffman 1986). Essentially the normal person is anxious in the

presence of a handicapped person and Linveh (1982) considered this anxiety on two conceptual levels

Aesthetic anxiety: This refers to the fears in "normal" people brought on by a person whose appearance deviates markedly from the usual human form, or to persons who have physical traits regarded as unappealing, e.g. the person suffering from cerebral palsy having difficulty controlling saliva flow. these fears are reflected in the tendency to shun such people and the preoccupation of society to achieve bodily perfection (Hahn 1983, 1988)

Hahn (1988) indicates that there are two aspects of aesthetic anxiety.

First, discrimination because of non conformation of conventional images of human physique or behaviour Fisher (1973) states that "the disfigured person makes others feel anxious and because he becomes an object to be warded off ". Studies have also shown that perceived unattractiveness is a significant source of unfavourable attitudes towards handicapped persons (Goffman 1971, Bull 1979, Rumsey et al 1982)

Second, aesthetic anxiety may result in a tendency to place who are perceived to be different in a subordinate role. This is seen in the type of employment that mentally and physically handicapped persons seem to end up in (Phelps 1965, Warren 1965, Schuler et al 1979, Wilgosh et al 1987), and the negative attitudes of the employers to them (Florian 1978, Geist et al 1982).

Existential anxiety: This refers to the threat felt by "normal" people in the presence of someone who is handicapped. This is "there but for the grace of go I" thought. The fear that this can happen to you. Existential anxiety seems to involve a sense of personal identification, with the handicapped person, fear that under other circumstances "I could be like that".

Mental and physical handicap is high profile and highly visible. The stigma of these handicaps promote reactions from the normal population which are discriminatory and sometimes irrational. There is a fundamental negative bias (Wright 1988) which steers perception, thought and feeling along negative lines to such a degree that positives remain hidden and is a powerful source of prejudice. A prime example of this can be found in the reactions of residents to homes and institutions for the mentally handicapped opening up in their particular locality. In some cases residents have been able to prevent handicapped persons moving into their locale (Lubin et al 1982, Hogan 1986, Graham et al 1990)

Dudley (1983), in his book "Living with stigma" cites quotes from people who are faced with the prospect of handicapped persons moving into their vicinity.

"We don't want (mentally) handicapped people in our neighbourhood."

"I don't want my children mixing with retards. It may rub off."

"Build a high fence to keep them in "

A Gallup Poll in (1976) found that 74% of those polled indicated that they do not fear mentally handicapped persons, and 85% said that they would not object to a home for handicapped individuals in their neighbourhood.

However, studies have shown that respondents to such polls often state acceptance of handicapped people, in broad terms, but show rejection when questions become a bit nearer to home e.g. "would you employ a handicapped person?" "would you allow a handicapped person to go out with a member of your family?" (Phelps 1965, Latimer 1970, Jones 1972, Kastner et al 1979)

In a number of "Western" countries a variety of state and social institutions have invested special efforts in promoting the integration of handicapped people (Florian et al 1987). It has been suggested that far reaching legislation in countries such as the United States of America, Israel, Great Britain and Scandinavia, has gradually led to a greater tolerance of the principles of social integration of the handicapped (Schneider et al 1980). However, Wright (1983) qualifies that in saying "the negative social attitudes, that exist in almost every community, toward people with disabilities, remain a major obstacle to the social reintegration and rehabilitation of those who are disabled".

Key variables in the modification of negative attitudes towards handicapped persons are education and contact. Accurate information has a great effect in altering negative attitudes towards handicapped people (Hafner et al 1979, Donaldson 1980, Wright 1980, Gilfoyle et al 1986, Jarvis et al 1990).

With contact it becomes a little more complicated. Contact with handicapped persons leads to a more positive attitude (Antonak 1981, McConkey et al 1983, Ashman et al 1983, Kifune 1986, Beh-Pajoooh 1991)

Also attitudes seem to change over time when students are exposed to a course on developmental disabilities and contact with handicapped persons (Spren 1977, Rees et al 1991).

Other studies have shown that contact reinforces a negative attitude (Gottlieb et al 1974, Emerton et al 1978). Whilst others have found that contact results in no significant change in attitude towards the handicapped (Begab 1970, Hagen et al 1983, Fichten et al 1985, Fichten et al 1986, Graffi et al 1988, Sinson et al 1990).

These findings would appear to be contradictory and conflicting (Butler 1986, Carsrud et al 1986) However it may be the type of contact that may be a critical factor (Rees et al 1991). If contact is structured and direct, it can promote a more positive attitude (Voeltz 1982, McConkey et al 1983, Acton et al 1988). "Contact in and of itself, does not significantly change attitudes towards persons with a disability" (Anthony 1972, Gilfoyle et al 1986). "Contact must be structured and organized along a meaningful dimension to lead to favourable and consistent shifts in attitudes" (Rees et al 1991)

In Hong Kong, the concept of social integration has not been accepted to the same extent as in Europe and the United States. One agency, the Hong Kong Association for the Mentally Handicapped, has a programme for the social integration of

handicapped adults in one of its institutions (Annual Report 1993-1994, O'Donnell 1988). This is the only programme of its kind in Hong Kong, consequently the number of handicapped persons benefiting from this programme is extremely small. There have been few problems, regarding the programme, to date (Wong N P H. 1993)

However, on a more realistic note, recently the Down's syndrome association has tried to open a hostel for their clients in one of the large new towns situated in the New Territories, and has had to deal with a great amount of often violent opposition. This on-going protest by residents has been covered extensively by the press in Hong Kong and the extent of the protest can be seen in some quotes from one of the three local English newspapers, the South China Morning Post:

"Estate residents battle riot police over hostel (for the handicapped)" (South China Morning Post, March 3rd, 1993).

A little later over the same centre:

"We'll kill say estate protesters" (South China Morning Post, August 16th, 1993).

"An attack by Tung Tau residents on a Down's syndrome association centre was condemned by social workers as barbaric, smashing windows and daubing a door with messages threatening to kill the centre's head."

An editorial in the Sunday morning Post was headed "The ugly face of Hong Kong" and began with: "The way society treats its poor, weak and sick is the real test of civilisation". Somewhat

journalistic, but it has a point. The article was a comment regarding the public reaction to the above centre.

It goes on to say

"The Social Welfare Department has already made concessions to the "sensitivities" of those living on this housing estate by moving the entrance to the hostel so that they would not have to share a lift lobby with the handicapped" (Sunday Morning Post, August 22nd, 1993). An example of the power of persuasion.

A member of the estates Mutual Aid Committee was interviewed about why the efforts to integrate these handicapped people into the community were having little success, Mrs Lam Ma Chor-kuen said

"The reason is very simple. we are scared of the mentally handicapped. They may attack my family and neighbours. They pose great danger. Protecting my family and myself is my top priority. You can say that I am selfish and inconsiderate, but I just want to live in peace and be safe" (South China Morning Post, November 8th, 1993)

The centre opened in December 1993, one year behind schedule. A further report.

"Shopping centre admits trying to bar mentally handicapped" (South China Morning Post, March 11th, 1993)

This was a report by the paper on a large shopping centre in a new town in the New Territories, the management of which admitted trying to keep mentally handicapped people away from the centre because of the "adverse publicity" they would give it.

2.2 Handicap and Stigma: The Chinese Perspective

Recently, the Chinese University of Hong Kong hosted a conference where 36 psychologists debated the nature of the Chinese mind. There were 21 Chinese and 15 non Chinese participants. An article in the Sunday Morning Post, in Hong Kong, summed the conference up :

"Not even a three-day brainstorming session among top psychologists, at the Chinese University of Hong Kong, could unravel one of the world's greatest puzzles-how the Chinese mind works." (Sunday Morning Post, June 11th, 1994).

The centre stage in almost all approaches to Chinese social behaviour, including how mentally and physically handicapped members of society are regarded, is commanded by Chung-ni Kung or Confucius. The essence of Confucianism is to obtain social harmony. Everyone in his or her place and accepting that position. Man exists in relation to others (King et al. 1985).

The predominance of Confucianism in China can be traced to its origin in the Han Dynasty, about 2,000 years ago (Bond et al 1988). Wu Ti, an Emperor of the Han dynasty, set up, at court, five colleges, based on Confucian philosophies, a sort of state University. From this time, China began to develop a system of educating potential officials, based on Confucian philosophies. In this way, Confucianism gradually became the official philosophy of the state (Farbank et al. 1973)

Most rulers throughout the history of China have found these philosophies to be to their benefit, including those of

contemporary China. Not only does the ideology emphasize the duty of officers to serve with dispassionate loyalty, but also it was, and is sympathetic with the cultural system which is basically agrarian in nature (Stover 1974).

The effect of this agricultural economy was to tie the vast majority of the population to the land and the constraints that entailed, supporting the peasants at subsistence level. During bad times this meant that the vast majority of China's population would be starving. This type of ecological backdrop made the acceptance of Confucianism by the peasantry a logical process as the philosophy encourages restraint over one's desires and equal distribution of the limited resources among members of a certain group, usually the family (Bond 1986). At the same time the educated elite became the ruling classes and exercised power according to Confucian principles. Thus all Chinese people were enmeshed in Confucian tradition (Fung 1948).

In Confucian tradition there are five Cardinal Relationships, *wu lun*,

1. Those between sovereign and subject
2. Between father and son
3. Elder brother and younger brother
4. Husband and wife
5. Friend and friend

All these are constructed in hierarchical patterns, and in each case the senior member was given a wide range of authority with respect to the junior (Fairbank 1963).

In summary:

1. A man exists through, and is defined by, his relationship to others.
2. These relationships are structured hierarchically
3. Social order is ensured through each party honouring the requirements in the role relationship

Unfortunately there is no place in this perfect model of society for the mentally or physically handicapped. They do not fit. They have no place in the well ordered way of things. Not only are they different and unable to take their place in the order of things, they are also unable to play an active role in the economy of society and are therefore a burden. In times of hardship this can be intolerable. This is very important in today's China with a one child family policy. Bearing a handicapped child is of no use whatsoever, "it is worse than having a girl"

Even today there are anecdotal accounts of infanticide involving handicapped children. A similar situation developed in Europe in the early Middle Ages, 500-1000 AD, where there was destruction of the cultural achievements of the Roman empire plunging Europe into the "Dark Ages". An agrarian society developed, similar to that in China today, with a wealthy feudal lord, party official in China, rented out plots of land for the serfs to farm. There was, therefore, a lot of pressure on the serf family to produce healthy males to till the soil.

A female or handicapped child was at high risk of becoming a victim of infanticide. Ancient attitudes continue today to have an impact on our ideas of the value of handicapped new-born children, and continue to play a role in their loss of life (Mosley

1986). Contemporary Chinese still adhere to these societal values (Bond 1991)

In a study by Jaques et al (1973), the Chinese subjects responded most positively to disabilities categorized as more physical in nature and least positively to those categorized as social, including mental handicap. An influence from their cultural upbringing.

In this same study it was concluded that, in comparison with persons in Denmark and the United States, Chinese thought of individuals with disabilities as being different from non disabled individuals and would be less likely to establish close interpersonal relations with disabled persons

Similar to other developing countries, China is not kind to its handicapped (Kristof et al 1994), and a quote from the Governor of Gansu province, cited in a Hong Kong newspaper, illustrates this.

"Insane, dull witted and idiotic people must first complete sterilization operations before they can register for marriage " (South China Morning Post, March 31st, 1990).

This was to reveal that the province had enacted a new law on family planning to prevent mental retardation being passed on.

Further to this, Associated Press reported:

"Sterilization for the mentally retarded: China's first province to approve a mandatory sterilization law for the mentally retarded performed 5,500 operations in the 14 months after the law took effect.

Officials in the north-western province of Gansu said their goal was to sterilize most of Gansu's 260,000 mentally retarded residents by the end of next year (1990).

Since the law was enacted in January 1989, Gansu has set up a diagnostic network and requires examination for all couples planning to marry. It has also sent teams out to villages with large numbers of mentally retarded to do ideological work among the relatives and guardians."

Arid remote Gansu, one of China's poorest regions, has several large concentrations of mentally and physically handicapped people, due in part to inbreeding in isolated villages. One county has more than 700 and medical teams had sterilized 516." (South China Morning Post, May 22nd, 1990)

This behaviour is not altogether surprising when the vast majority of Chinese are facing abject poverty

Kristof and Wudunn (1994) in "China Wakes," tell a disturbing tale associated with Beijing's bid to host the Olympic games in the year 2000. Just prior to the International Olympic Committee prepared for an inspection tour of Beijing, the authorities began a campaign of cleaning up the city, including the moving out of all homeless people. The family of a 41 years old mentally impaired man was approached by the police and the local deputy head of the Neighbourhood Committee with an arrest warrant for their son. The reason being that although the man could perform simple tasks he might gape and point and come across as an oaf, and so harm Beijing's Olympic prospects. The man was arrested and taken away, protesting, to prison, where he died. What can the parents do? Virtually nothing.

There is a law in China that protects the mentally retarded, and assures them of the same rights as anyone else (Kristof et al 1994). The man, and his parents were the victims of a society run by "Renzhi," rule by individuals rather than by "Fazhi," rule by law. This goes back to the Confucian hierarchical principles discussed earlier. Also, unfortunately, the parents did not have enough "Guanxi", influence in high places, to help them out.

Consequently a mentally impaired man was put in prison, where he died, because he did not fit in with the Olympic image "2000 Olympics."

2.3 Handicap and Stigma: The Family Perspective

The birth of a mentally or physically handicapped child within a family unit will have a far reaching affect on the life of the individuals in that family unit. The presence in the family of someone who has a chronic handicapping condition manifests major changes in the structure, patterns, relationships and functioning of the family unit.

There are two distinct ways in which families react to their predicament (Burden 1986). The majority indicate that such a handicapped child's birth can precipitate major family stress, and parents find the birth of a handicapped child an overwhelming shock from which they rarely recover and about which they feel a variety of negative emotions such as guilt, sorrow and anxiety (Cohen 1962, Olshansky 1963, Hare et al 1966, McMichael 1971, _____, Roskies 1972). A few take the opposite approach in highlighting the capacity of parents to make a satisfactory

adjustment to their situation (Roith 1963, Matheny et al 1969, Booth 1978)

The experience of the birth of a mentally or physically handicapped child in a family is somewhat like the death of a normal child (Solnit et al 1961), and parents need to mourn the loss of their expected normal child. Drotar, et al (1975) describe five stages through which parents go when it is realised that their child is handicapped in some way.

Stage one: Shock

This is the parent's initial response to the news of their child's abnormality, and a time of emotional irrationality.

Stage two: Denial

After the initial shock, parents enter a stage where they want to be free from the situation, to deny its impact and escape from the information of their child's abnormality "I cannot believe it is happening to me. It is unreal, and I will wake up soon "

Drotar et al (1975), also indicate at this stage the degree of denial also is dependent on the severity of the visible manifestation of the handicap. The more severely abnormal the child looks, the greater the denial.

Stage three: Sadness, Anger and Anxiety

Following stage two come the feelings of sadness and anger. Anger is often directed towards the parents themselves, toward the child, hospital staff and really anyone or anything in the way. There is a need to "kick" someone or thing

Many parents become anxious over the viability of the child and fear it might die. This fear causes parents to be reluctant to bond or interact with the child

Stage four: Adaptation

There is a gradual lessening of the intense emotions felt in stage three with an increased comfort with the situation. The adaptation is a gradual process involving coping with the complex emotions of anxiety and sadness.

Stage five: Reorganization

At this stage parents tend to deal with the issues of responsibility. "Is the fact that the child is handicapped our fault in some way?" Many parents accept that they are blameless, others blame each other but in all cases positive long term acceptance of the child involves the parents' mutual support of one another.

These intense emotional feelings, experienced by parents, corresponds to a period of crisis (Drotar et al 1975), defined as "upset in a state of equilibrium caused by a hazardous event which creates a loss, or a challenge for the individual" (Bloom 1963), similar to that experienced following the death of a normal child.

Florian (1989), uses the word "stressors" to define "life events or occurrences of sufficient magnitude to bring about a change in the family system" (McCubbin et al 1980). Families with a member who is handicapped face the stress of a long term commitment to that member (Turnbull et al 1984).

Family adaptation to a child who is handicapped involves many "stressors" and strains, which are demands and hardships emerging from stressors

These are all happening at once, and all call for attention (Patterson et al 1983).

DeLuca et al (1984) indicate that a family's reaction to a mentally or physically handicapped child, their expectations and relationship patterns, is effected by their cultural background.

Cultural background here represents the family's heritage, which includes religion, customs, values, languages, role differentiation and kinship patterns shared by a particular group of people. They go on to say:

"In some cultures it is not uncommon for the handicapped child to be fully accepted and treated as a cherished family member. The community may reinforce the family's feeling of protectiveness. In other cultures, the handicapped are viewed as permanent children, are overprotected and kept away from the stresses of daily life. In still other and extreme cases, defective children are abandoned and left to die."

Florian et al (1981) found that Jewish parents tended to rely on their own internal resources in coping with a child with a disability, whilst Arab parents looked for help from the extended family and other external sources.

Studies involving parents from differing cultures (Florian et al 1981, Leonard 1985, Reiter et al 1986, Shen Ryan et al 1989 Florian 1989) all reinforce the view that treatment of the

handicapped is very much dependent on varying cultural backgrounds.

2.3.1 The Chinese Family

The presence of a mentally or physically handicapped member in a Chinese family is somewhat of disruption to the normal accepted state of affairs. Chinese society is hierarchical. The initial unit is the family, next the clan and finally the nation or state, which for the Chinese means race.

Bond (1991), states that the family is regarded as a refuge from the rigours and troubles of everyday life. The family is all important, each individual member must place the others before him or herself. Each member of the family shares each other's pride, shame sadness and joy. Family relationships become a lifelong affair, extending into marriage, where the obligations continue.

Article 15 of the Chinese family law states .

"Children have the duty to support and assist their parents. When children fail to perform the duty of supporting their parents, their parents have the right to demand that their children pay for their support."

A mentally or physically handicapped family member will not, and cannot, comply with this ideal family scenario. This person will be unlikely to support his family or productively contribute to the family welfare. The state considers congenitally handicapped individuals as oddities and family blemishes who are a family responsibility (Dixon 1981). The handicapped are therefore:

1. A burden to the family
2. A non productive member
3. A blemish
4. Attract little or no state support.

There is a further dimension: "po ying" which loosely translated means "Punishment from God" usually this is thought to be a punishment for a wrongdoing in this or perhaps in a previous life or lives. The burden of having to look after a handicapped person for the rest of your life can be looked on as punishment from the gods.

An interesting aspect on the effect of a handicapped child in a family can be seen in studies of parental views on sterilization of their mentally retarded offspring, and views on the abortion of defective fetuses, in England and the United States (Bambrick et al 1991, Breslau 1987). A small majority of parents said they had, or would, consider sterilization of their mentally retarded offspring, but there was no difference in the views of parents with a handicapped child and parents with a normal child in the extent they approved of abortion of a defective fetus. In China, however, no such views are taken into consideration. A recent article in the leading English language newspaper in Hong Kong, The South China Morning Post, highlights this. The article, entitled "The lives that must be lost," reports on legislation, passed by the National Peoples Congress in November 1994, which says that a deformed fetus must be aborted and the mentally retarded may marry only after they are sterilised. This law comes into effect in June 1995. Peng Yu, Vice Director of the National Family Planning Committee says:

"Rapid population growth has led to sharp reductions in arable land. We want children to maintain the family line and support parents in their old age. Disabled children are useless for either purpose so they become a luxury. Few people can afford luxuries in China."

Health minister, Chen Minzhang, said "There is an estimated 10 million disabled people in China. In many cases they never would have been born if the new law had been in effect. Most of China's orphans are disabled children discarded by their parents."

In the same article a mother of a mentally retarded child reports: "The family planning committee has said we can have a second child, but I will have to undergo an examination. If I had known the truth about my first child I would have aborted. I think few Chinese women, given the choice, would keep a retarded child." (South China Morning Post, January 27th, 1995)

Hong Kong is a sophisticated society with a different rule of law to that of China. However, it must be remembered that the majority of its population is Chinese, with Chinese traditional values.

2.4 Handicap and Stigma: The Dental Perspective

Many persons who are mentally and physically handicapped have great difficulty in finding a dentist who is willing to serve their dental needs (Steifel et al 1981, Leviton 1980, Piper et al 1986, Shaw et al 1986, Nunn et al 1988, Finger et al 1989). A high proportion of dental diseases, in this group, are not treated,

reflecting their need for dental services (Snyder et al 1960, Gullikson 1969, Storhaug et al 1987, Lo et al 1991).

Both the dentist and the patient are human beings, being a product of his or her life experience. This has the potential of creating interactive problems, within the context of practice, especially with the patient who may be handicapped in some way. A dentist will set personal and professional priorities related to his needs and personality. A dentist will organise his or her practice to achieve these goals. In other words undesirable patients will be rejected. Soble (1974) says this can be done consciously or unconsciously. In many ways

"The undesirable patient may experience: Referral elsewhere, excessively long delays in obtaining an appointment, appointments given at inconvenient times, high dental costs and unpleasantness and disinterest from the dentist."

A dentist has the right to treat who he or she wants, but Soble (1974) goes on to say

"The dentist has the responsibility to be concerned that all people needing or wanting dental care are provided with this opportunity "

and

"Often this conflicting dichotomy presents a dilemma which causes many dentists some discomfort in their reflective moments "

The philosophy behind these statements is essentially true. In a Canadian study, 42% of private dental practitioners questioned said they refused to treat disabled patients (Smith 1981). Ten

percent were uncomfortable treating these patients and did not refer them to other dentists.

In Germany, 20% of a survey sample of practitioners considered dentistry for the aged and disabled was not their business (Wetzel et al 1986). This is in contrast with an Australian study which looked at parents' problems in finding dental treatment for their handicapped child (Bourke et al 1983). Here over 70% of respondents said they had no difficulty in locating a dentist who would treat their child.

Major physical barriers are the most obvious factors in handicapped persons obtaining dental care. Access to buildings is a major problem (Smith et al 1980, Pool 1981, O'Donnell et al 1984, Felder et al 1988) that architectural barriers were an important factor in the handicapped not obtaining dental care (Scholle 1979, Rosenbaum 1984).

Contrary to this general view, two studies found that in their particular areas the handicapped had no difficulty with access to dental care (O'Donnell 1985, Tobias 1987). It has been pointed out that in one study (O'Donnell 1985) a socio-economic element may have been an important factor, and in the other (Tobias et al 1987), efficient social services played a large part in the outcome of the investigation. However, whether or not access is a problem, dental care for the handicapped person is still dependent on the willingness of the dentist to treat (Wilson 1991).

Two other aspects regarding dental treatment of the handicapped, from a dentist's point of view, have been highlighted: Cost and lack of training in the field.

The perception is that dental care for the handicapped is a time consuming task, due to the nature of the patient. Time is money and it is economically non viable to treat these patients in general dental practice even though third party agencies may be footing the bill. A number of authors have discussed this at great length. There seems to be no clear cut answer to this problem, even with the introduction of capitation schemes (Levine 1988, Siegal 1986, Nunn et al 1988, Burtner et al 1990).

There is a relationship between training experience and the willingness of dentists to treat patients with handicapping conditions (Stiff et al 1964, Mathewson et al 1970, Needham 1978, Campbell 1983). As a general rule the more exposure an undergraduate dental student has to handicapped patients the more positive their attitudes will be towards them (Gurney et al 1979, Nunn et al 1988), and more increased willingness to treat handicapped patients in future dental practice (Eisenberry 1976, Kinne et al 1979, Block et al 1980)

However, Stiff and Phips (1964) found that students who are exposed to special patient groups actually worsened in their attitudes and became more negative in treating these patients. Similarly Miller and Heil (1976) reported negative results after a programme of exposure of dental students to older patients.

Three studies in Hong Kong have dealt with the attitudes of dental students towards treating handicapped patients (Bedi et al 1986, Bedi et al 1989, O'Donnell 1993).

The first study (Bedi et al 1986) showed that the attitudes of undergraduate dental students, at the Prince Philip Dental

Hospital in Hong Kong, improved after completing the fourth year course on dentistry for the handicapped patient. This final year group also expressed positive attitudes about, and intentions of, providing care for patients with handicapping conditions. However 89% of them believed that all care should be provided for these patients at specialized centres

In the second study (Bedi et al 1989) a follow up on these students, who had now graduated and been in practice a number of years, was made. Several years after graduation there had been no great improvement regarding the feelings of responsibility for general dental practitioners to provide dental care for handicapped persons

The third study looked at general attitudes of dental students towards handicapped persons and compared them with those of a similar group of students taking psychology, but not as their major, at the University of Hong Kong (O'Donnell 1993). Using a psychometric scale, the attitudes of dental students towards disabled persons was considerably poorer than those of the non dental students. There was also no significant difference in attitude between dental students who had experience with handicapped patients and those who had not. The article concludes by saying:

"This result must reflect the caring qualities of the young person being attracted to dentistry in Hong Kong, and it is of some concern that if this poor attitude seen in the student is an indication of the future attitude of the practitioner, then this could be a major barrier to the disabled in obtaining the dental care they need."

As far as treatment of the handicapped patient is concerned, five definite groups of dental practitioner can be identified (Sobel 1974).

1. The dentist who will accept the handicapped patient, but over identifies to the extent that he, or she, becomes ineffectual in providing adequate dental services.
2. The dentist who will accept handicapped patients but is disturbed to the extent of being overly cautious and fearful. Treatment becomes over slow, long and difficult
3. The dentist who tries to deny uncomfortable feelings and unconsciously employs psychological defence mechanisms which make the practitioner seem unsympathetic and unfeeling. Dentists who come under these three headings may, if they recognise what is happening, be able to overcome their emotional blockages, to some degree, and improve their treatment approach
4. The dentist who will be unable to recognise, and cope with, his or her biases and prejudices, who will be totally ineffective in their professional role with handicapped patients.
5. The dentist who is emotionally capable, and positively motivated to work with, and treat, the handicapped patient.

Treatment of the handicapped patient is seemingly all down to the personality of the professional. Undoubtedly the dentist, as a private practitioner, has a right to control his, or her, patient population in such a way that is agreeable with his, or her, own needs. However there is a responsibility, as a caring professional,

to be concerned that all people needing or wanting dental care are provided with the opportunity to obtain it (O'Donnell 1996).

The sociological and psychological problems dental practitioners have in treating handicapped patients is summed up well by Soble (1974):

"Special (handicapped) patients are rejected because the dentist is a human being who is a product of his culture. He has been influenced and socialized by the society, community and family of which he is part. Many of the cultural values which he holds make him more prone to enjoy contact with people who are attractive, amenable and whose values and beliefs most closely resemble his own.

Without being fully conscious of it, dentists, like other people, have strong emotional blockages. These may cause a resistance to being with defective physically unappealing, difficult or unpleasant patients who may make the dentist feel depressed and uncomfortable. Excluding these patients from the practice is one way of avoiding these feelings."

2.5 Aims and Objectives of the Study

From the literature there is evidence to show that the stigma of mental and physical handicap has a detrimental effect both within the family context and without it, affecting the social interaction of this particular group. There is evidence to show that, within the Chinese community, that the reasons for this can be attitudinal and historical.

The purpose of this study is to look at the stigma of mental and physical handicap from a dental aspect and how this will affect the provision of dental care to this section of the community in the Chinese population of Hong Kong

A further objective of the study is to assess the dental status of 4 year old, 14 year old and 25 to 35 year old mentally and physically handicapped persons in a Chinese population of Hong Kong.

2.5.1 Hypothesis

The hypothesis of the study is that the stigma of mental and/or physical handicap is a major barrier to the delivery of dental care to people with mental and physical handicaps in the Chinese population of Hong Kong with two sub hypotheses

1. The parental and family attitudes, among the Hong Kong Chinese, towards their mentally and / or physically handicapped 4 year old, 14 year old and 25 to 35 year old children within their units affects the delivery of dental care to these children.
2. Dental care provider attitudes, specifically general dental practitioners in Hong Kong, towards mentally and/or physically handicapped individuals affects decisions to treat this group.

The investigator part of this study was divided into two sections:

1. An investigation into the attitudes of Chinese parents towards their handicapped children, supplemented by an investigation into the dental status, treatment need and dental attendance pattern of themselves, and their child.
2. An investigation into the attitudes of general dental practitioners in Hong Kong towards treating handicapped patients within their practice.

In both these investigations Likert type scales were employed to quantify attitude and opinion

3.1 The Study Questionnaires

In section 1 of the study the attitudes of parents towards their mentally or physically handicapped child was investigated by the means of two Likert type scales:

1. A pre-designed Likert type psychometric scale called the Scale to Determine Attitudes Toward Disabled Persons, the SADP.
2. A Likert type psychometric scale, specifically designed to quantify how the presence of a mentally or physically handicapped child in a family has affected the parental attitude towards that individual, and called the Parental Attitude Scale.

In addition to these scales a questionnaire was developed to investigate parental experiences and feelings towards their handicapped child.

Socioeconomic data was also collected and a dental examination sheet was included to determine the dental status, treatment need and dental care delivery pattern experienced by their child

In section 2 of the study two psychometric Likert type scales were used to investigate attitudes of general dental practitioners toward handicapped persons and their attitudes towards treating them.

- 1 The Scale to Determine Attitudes Toward Disabled Persons, the SADP.
2. A Likert type psychometric scale relevant to the treatment of handicapped persons in general dental practice in Hong Kong, called the Dental Practitioner Attitude Scale.

In addition to this questions were included on socioeconomic data, qualifications, practice pattern and community service.

All questionnaires and scales used in the study are seen in Questionnaire Appendix V.

3.2 Likert Type Scales

A Likert scale enables a qualitative attitude or opinion to be quantified. Likert scales (Likert 1932) are summated scales where a respondent is asked to react to a number of statements. These scales are designed so that the respondent is not just asked to agree or disagree with a statement, but rather choose between several response categories, indicating various strengths of agreement and disagreement. In the classic Likert scale there are usually five categories to choose from

Strongly Agree	Agree	Undecided
Disagree	Strongly Disagree	

When designing these types of scales, it is not mandatory to adhere to the original Likert format, and a larger or smaller number of response categories can be used. In the scoring of a Likert scale, each category is given a numerical value where favourable responses score a positive value, unfavourable responses a negative value. The algebraic summation of the scores of the individual's responses to all the separate items gives the total score, which is interpreted as representing the respondent's favourable or unfavourable attitude or opinion towards the subject in question.

A Likert scale is an ordinal scale, and so individual scores cannot be interpreted as absolute values. Each score can only be interpreted in terms of how it compares with scores of other persons taking the test under similar conditions.

Likert scales are relatively easy to construct, easily administered and scored. They provide a relatively accurate basis for the ordering of people on the characteristic being measured (Selliz et al 1966)

3.2.1 Design and Construction of a Likert Type Scale

This requires:

1. The assembly of a number of items considered relevant to the attitude, or opinion, being investigated, and these are specifically either favourable or unfavourable.
2. There should be the same number of statements worded favourably, or positively, as those worded unfavourably, or negatively. This has the effect of making the respondents think about the statements rather than respond automatically. It also minimizes the effect of a response set towards either agreement or disagreement with whatever statement is made (Moser et al 1980).

3.2.2 Reliability, Construction and Scoring of the Study Scales

The reliability of all the scales were determined prior to their use in the study, and details of reliability testing, construction and scoring of the scales is detailed in Appendix VI .

3.3 Parental Interview

Parents of handicapped siblings within the age groups: 4 year olds, 14 year olds and 25 to 35 year olds were used in the investigation. The parents were interviewed by questionnaire whilst the children were simultaneously dental examined. The interviews were carried out by means of a questionnaire and Likert type scales as previously described

3.3.1 Main Sample Size for the Parental Interview

The main sample size for the parental interview was calculated from a pilot study carries prevalence level in groups of mentally and physically handicapped children within the age groups of the main study

3.3.2 The Pilot Study

Physically and mentally handicapped children in the age groups of nearest age 4 year olds, 14 year olds and adults between 25 to 35 year olds took part in the pilot study. These age groups were chosen for both the pilot and main study as it was felt that they represented a broad spectrum of disease level that would be seen in the two dentitions, and also interviewing parents of children in these age groups would enable any change in attitude, by parents, to be seen as the child progressed through life.

A sample of 100 participants from each age group were utilised from schools and training centres of the Spastics Association of Hong Kong on Hong Kong Island, Kowloon and the New Territories. All were graded as mild to moderately mentally

retarded. The majority were cerebral palsied with varying degrees of physical handicap.

They were examined for caries experience using WHO criteria (WHO 1987). Examination was on site by disposable straight dental probe, disposable mirror and fibre optic illumination. Decayed, missing and filled teeth were recorded as per WHO (1987) and the Decayed Missing and Filled index (Jackson 1950) used to calculate caries experience. The results are seen in Table 3.1.

Table 3.1. Pilot Study Mean DMFT/dmft in the Three Study Age Groups

Age Groups	Mean DMFT/dmft	Std Deviation
4 year olds	1.56	3.17
14 year olds	2.30	2.50
25 - 35 year olds	5.73	5.65

n = 100 in each group ,

From this data the main sample size was calculated. The dental examinations for the pilot study and main study was performed by one examiner, the author.

3.3.3 Intra Examiner Reliability

In all surveys it is important to test the reliability and consistency of the examiner or examiners involved in the survey. In this case only one examiner is involved. A way in which a numerical value can be put on to intra examiner variability is on a present or

absent basis There is an initial examination, followed, at some time interval, by a repeat examination.

Data is recorded as a 2 x 2 table (Nuttall et al 1988). In this case, the presence or absence of caries is the criteria for reliability. The four cells contain the following information, illustrated in Table 3.2.

1. The proportion of teeth sound at both examinations
2. The proportion of teeth found sound at first examination, but deemed to be carious at the second
3. The proportion of teeth deemed carious at both examinations.

Table 3.2. Calculation of the Kappa Value for the Pilot Study

		First Examination		Total
		Sound	Carious	
Second	Sound	a	c	a + c
	Carious	b	d	b + d
	Total	a + b	c + d	a + b + c + d

The Kappa statistic (Cohen 1960) relates the actual agreement obtained with the degree of agreement which would have been attained had the diagnoses been made at random, or the extent to which the degree of agreement recorded improves upon chance (Bulman et al 1989)

Kappa is given by

$$\frac{P_o - P_e}{1 - P_e}$$

Where:

P_o is the proportion of agreement = a + d

P_e is the proportion of agreement which could be expected by chance, which is = $\frac{(a + c)(a + b) + (b + d)(c + d)}{n}$.

For the pilot survey 20% of participants in each age group were re-examined approximately one week after the initial examination, and Kappa calculated for caries diagnosis. This is seen in Table 3.3

Table 3.3. The Kappa Value for each Age Group in the Pilot Survey

Age Group	Kappa
4 year olds	0.85
14 year olds	0.68
25 - 35 year olds	0.88

A Kappa score of 1 would indicate perfect agreement, over 0.8 good agreement, and over 0.6 substantial agreement.

3.3.4 Main Sample Size for the Parental Interview and Dental Examination

The way in which the Hong Kong Government (1981) determined their statistics on disablement characteristics was to include, on their census form, a section in which the respondents had to indicate whether or not the household had a handicapped member, and, if so, to give details of the handicap.

It was realised that to sample for the study from individual households would be exceptionally time consuming and totally impractical. The Hong Kong Government will not divulge individual addresses, and there is no comprehensive register of handicapped persons available for scrutiny.

In Hong Kong educational and training facilities for mentally and physically handicapped individuals are provided by government, and government subverted organisations such as the Spastics Association of Hong Kong, Homes for the Handicapped, Caritas Organisation and the Hong Kong Society for the Mentally Handicapped.

These organisations provide education and training for mentally and physically handicapped individuals from the age of 2 year olds up to 65 year olds. It was decided that the main sample would be selected from this pool.

In Hong Kong, all children under the age of 18 year olds have to attend school, and this is the same for mentally and physically handicapped. Therefore most of these children will attend one of

the special schools. Sampling these schools will give access to a large population of children to examine and parents to interview.

Mentally and physically handicapped adults attend adult training centres and sheltered workshops. Not all handicapped adults are able to do this as there is a great deal of competition for a limited number of places. In a society like Hong Kong, where there is a marked reluctance of people to come forward to be counted, and inadequate records, it would be virtually impossible to find those adults not attending these work centres. Therefore the sample of adults was taken from the pool most readily available i.e. the work centres.

From figures provided by the Hong Kong Government (1992) the number of mentally and physically handicapped persons attending preschools, special schools and adult training centres/workshops are given in Table 3.4.

Table 3.4. Number of Mentally and Physically Handicapped Persons in Special Centres in Hong Kong

Centre	Number
Preschool	1,693
School	5,002
Adult Training Centre	4,818
Total	11,513

More schools and training centres are planned for the future, but as of now these figures represent the present situation.

The main sample size was determined from disease levels seen in the pilot survey, and thus number which will give a mean DMFT/dmft similar to that of the pilot + or - r% at the 95% confidence level is given by the following formulae (Cochran 1977).

$$n_0 = \frac{t^2 s^2}{r^2 x^2}$$

Where.

t = 1.96 (95% confidence)

x = mean DMFT/dmft from the pilot

s = standard deviation

This gives a value n_0 from which the sample size n can be calculated.

$$n = \frac{n_0}{1 + \frac{n_0}{N}}$$

Where N is the total number in the population from which n is taken

An assumption was now made that there will be equal numbers of persons in each age group. Therefore, for the age groupings of the study, the total numbers in the pool N is seen in Table 3.5.

From these figures, sample numbers, based on the pilot mean DMFT/dmft + or - r% at the 95% confidence level can be calculated, and is seen in Table 3 6.

Table 3.5. Number in Each Age Group and Mean DMFT/dmft from Pilot Study

	N	Mean DMFT/dmft	Std dev.
4 year olds	526	1.56	3.17
14 year olds	500	2.30	2.50
25 - 35 year olds	1,636	5.73	5.65

Table 3.6. Estimate of Main Sample Size + or - r%

	r %		
	5%	10%	15%
	n	n	n
4 year olds	487	399	306
14 year olds	395	248	148
25 - 35 year olds	797	314	156

Therefore a sample size with an acceptable DMFT/dmft + or - between 10 and 15% of the pilot results would be:

4 year olds between 306 and 399

14 year olds between 148 and 248

25 - 35 year olds between 156 and 314

This represents the number of parents to be interviewed based on dental disease level in their children.

3.3.5 Sampling Technique

The Hong Kong Government provides a list of all schools and institutions educating and training mentally and physically handicapped. The number of persons in each school and centre is also recorded as well as the school or centre's affiliated organisation.

In order to obtain the best randomly selected sample in each age group the following sampling technique was used:

Each school or training centre for each age group was given a number. The numbers of children or adults in the centre was also noted and a cumulative total produced:

School No.	Total in School	Cumulative Total
1	60	60
2	70	130

until all schools and training centres were included. Random numbers were then generated from 1 to the final cumulative total number.

This number was the pupil or trainee number and the school corresponding to this number was used in the sample. The schools were divided into two groups to include the age ranges of the study, and the training centres were considered as a separate group. Three groups in all, to include the study age groups.

From the above sampling methods 9 preschool centres, 5 special secondary schools and 7 adult training centres/workshops were selected and the relevant age groups in these centres dental

examined and parents interviewed. A total of 748 parents were interviewed and 748 offspring dental examined. This is 100% of the sample sizes selected.

Each school or institution was given a letter of identification, and for convenience, placed in the following groups:

4 year olds	Group A to I
14 year olds	Group J to P
25 - 35 year olds	Group R to Z

Group J to P contained no school under the letter O, and group R to Z contained no institution under the letter T. The various schools and institutions selected are seen in tables 3.7A, 3.7B, 3.7C.

Table 3.7A. Schools and Institutions Selected, by Groups

<u>Group A to I (4 year olds)</u>		
School	Name	Situation
A	Sau Mau Ping Preschool	Kwun Tong, Kowloon
B	Shek Yam Preschool	Shek Yam, NT
C	Lok Hing Preschool	Kowloon
D	Apleichau Preschool	Hong Kong
E	Choi Wan Preschool	East Kowloon
F	Lung Hang Preschool	Shatin, NT
G	Wong Tao Hom Preschool	Kowloon
H	Shek Kip Mei Preschool	Kowloon
I	Chan Tseng Hsi Preschool	Hong Kong

Table 3.7B. Schools and Institutions Selected by Groups

<u>Group J to P (14 year olds)</u>		
School	Name	Situation
J	Elaine Field School	Kowloon
K	Tse On School	Kowloon
L	Red Cross School	Sandy Bay, HK
M	Ko Fuk Yiu School	Shatin, NT
N	Kwai Shing School	Kwai Shing, NT
P	Po Leung Kuk School	Kowloon

Table 3.7C. Schools and Institutions Selected by Groups

Group P to Z (25 to 35 year olds)		
School	Name	Situation
S	Wong Tai Sin Adult Centre	Wong Tai Sin, Kowloon
U	Ko Chui Rd Adult Centre	Kowloon
V	Priscilla Home	Hong Kong
W	Shun Lee Training Centre	Kwun Tong, Kowloon
X	Hing Wah Training Centre	Chai Wan, HK
Y	Lok Wah Training Centre	Kwun Tong, Kowloon
Z	Sun Choi Training Centre	Kowloon

3.3.6 Dental Examination and Parental Interview

The dental examination, involving caries experience, and oral hygiene status and parental interviews were carried out in house in the selected schools and training centres through out the territory. The coding of the questionnaires and examination sheets was such that the parent and sibling had the same prefix and number so that parent and sibling could be identified

The dental examinations were carried out as per WHO (1987) criteria, slightly modified. The criteria used are seen in Appendix VII. The results were recorded on a "Dental Examination" sheet modified from the WHO recommendations. The examination sheet can be seen in Appendix V.

The examinations were carried out with a straight probe, disposable mirror and fibre optic light. Decayed, missing and filled teeth were recorded as well as treatment need.

The dental examination sheet also included basic questions on child age, sex, handicapping condition, mental impairment grade, sibling ranking and mobility as well as an indication of difficulty experienced in examination.

3.4 Professional Investigation: General Dental Practitioners

For this investigation a questionnaire was developed comprising questions relating to qualifications and practice. In addition to this a scale was also developed which tested the attitude of the practitioner to treating mentally and physically handicapped patients in practice.

The scale was a Likert type scale, similar in design to the SADP, comprising ten statements relevant to dental practice in Hong Kong. The scale and questionnaire are seen in Appendix V and the reliability testing of the scale in Appendix VI.

3.4.1 Sample Size

The majority of General Dental Practitioners in Hong Kong are registered with the Hong Kong Dental Council. The majority of General Dental Practitioners are also members of the Hong Kong Dental Association, which has a more up to date address list. It was from this that the sample of General Dental Practitioners was taken.

At the time of the study there were just under 600 dental Practitioners as members of the Hong Kong Dental Association. Of these 400 indicated that they were general practitioners.

3.4.2 Practitioner Survey

An English version and a best Chinese translation of the questionnaire, scale and SADP were distributed, by mail, to 400 General Dental Practitioners who were members of the Hong Kong Dental Association. They were asked to complete these and return the completed forms by mail, pre-paid. Anonymity of the respondent had to be assured in order to maintain accuracy of response.

Out of 400 the number of completed forms returned was 250, giving a response rate of 62.5%.

All results of the study were analyzed using the following:

1. The SPSS[®] for Windows[™], Statistical Package for Social Sciences.
2. The SAS[®] System for Windows[™].

Also used for basic analysis, two small statistical packages:

1. Epistat
2. Microstat

Results data were analyzed under three main headings:

1. Data obtained for the parents
2. Data obtained for the children
- 3 Data obtained for the dental practitioners

4.1 Data Obtained for the Parents

Parents of siblings aged 4 year olds, 14 year olds and 25 to 35 year olds were interviewed at the same time as the siblings were dental examined. The parents were interviewed at the schools, or institutions, that their siblings attended, and for the purpose of data analysis the parents were put into groups corresponding to those schools or institutions i e

Parents of 4 year olds	Group A to I	(n = 309)
Parents of 14 year olds	Group J to P	(n = 174)
Parents of 25 - 35 year olds	Group S to Z	(n = 265)
Total number of parents interviewed = 748		

The majority of parents interviewed were the mothers of the children, and this is seen in Table 4 1.

For the total number of parents it was found that the majority were married. i e. 672 (89.8%) with 63 (8.4%) with one partner deceased. Of these 63, 56 were from the parents of the older group of children, 25 to 35 year olds.

4.1.1 Parental Marital Status

The details of marital status is seen in Tables 4.2A, 4.2B and 4.2C

Table 4.1. Parent Interviewed

Parent	Number	Percent
Mother	612	81.9
Father	77	10.3
Brother	5	0.7
Sister	10	1.3
Grand Mother	37	4.9
Grand Father	3	0.4
Others	4	0.5
Total	748	100.0

Table 4.2A. Marital Status of Parents, Group A to I

Status	Number	Percent
Married	305	98.7
Single	1	0.3
Divorced	1	0.3
Separated	1	0.3
Sp. Deceased	1	0.3

The majority of parents in this group, parents of younger children, were mainly married, with very few being placed in the other categories.

Table 4.2B. Marital Status of Parents, Group J to P

Status	Number	Percent
Married	163	93.7
Single	3	1.7
Divorced	1	0.6
Separated	1	0.6
Sp. Deceased	6	3.4

Again, parents in this group, those of the teenagers, were mainly married, with a slight increase of those with one spouse deceased.

Table 4.2C. Marital Status of Parents, Group S to Z

Status	Number	Percent
Married	204	77.0
Single	2	0.8
Divorced	2	0.8
Separated	1	0.4
Sp. Deceased	56	21.1

In this group of parents with the older children, there is a marked increase in the number of parents with a spouse deceased over the parents in the other groups, as would be expected.

4.1.2 Parental Educational Attainment

Parental education attainment level overall, for the fathers and mothers, is seen in Table 4.3A and 4.3B.

Table 4.3A. Educational Level Attained by Fathers, Overall Groups

Level	Number	Percent
None	96	12.8
Primary	288	38.5
Secondary (Not Completed)	205	27.4
Secondary (Completed)	114	15.2
Tertiary (Not Completed)	13	1.7
Tertiary (Completed)	32	4.4

Overall the majority of fathers had no education or had attained only primary level, 12.8 and 38.5% respectively. Only 15.2% completed secondary education, and 4.4% had attained and completed tertiary education.

Table 4.3B. Educational Levels Attained by Mothers, Overall Groups

Level	Number	Percent
None	145	19.4
Primary	331	44.3
Secondary (Not Completed)	143	19.1
Secondary (Completed)	104	13.9
Tertiary (Not Completed)	7	0.9
Tertiary (Completed)	18	2.4

Overall, the majority of mothers had none or only primary education, more mothers than fathers fell into this group. Less mothers than fathers attained and completed tertiary education. Also less mothers than fathers attained and completed secondary level education.

The education levels attained by fathers and mothers for the individual groups are seen in Tables 4.4A, 4.4B and 4.4C.

Table 4.4A. Education Levels Attained by Fathers/Mothers, Groups A to I

Level	Father		Mother	
	No.	%	No.	%
None	7	2.3	12	3.9
Primary	98	31.7	122	39.5
Secondary (Not Completed)	120	38.8	88	28.5
Secondary (Completed)	62	20.1	78	25.2
Tertiary (Not Completed)	9	2.9	5	1.6
Tertiary (Completed)	13	4.2	4	1.3

In this group where the parents were of the youngest children i.e. 4 year olds More mothers completed their secondary education than fathers, but more fathers went on to complete their tertiary education, 4.2% of fathers and 1.3% of mothers.

More mothers than fathers had no education at all, whilst the majority of mothers managed to attain primary level education. The majority of fathers attained secondary level, but did not complete it

Table 4.4B. Education Levels Attained by Fathers/Mothers, Groups J to P

Level	Father		Mother	
	No.	%	No.	%
None	16	9.2	16	9.2
Primary	63	36.2	91	52.3
Secondary (Not Completed)	53	30.5	43	24.7
Secondary (Completed)	30	17.2	16	9.2
Tertiary (Not Completed)	3	1.7	1	0.6
Tertiary (Completed)	9	5.2	7	4.0

Table 4.4C. Education Levels Attained by Fathers/Mothers, Groups S to Z

Level	Father		Mother	
	No.	%	No.	%
None	73	27.5	117	44.2
Primary	127	47.9	118	44.5
Secondary (Not Completed)	32	12.1	12	4.5
Secondary (Completed)	22	8.3	10	3.8
Tertiary (Not Completed)	1	0.4	1	0.4
Tertiary (Completed)	10	3.8	7	2.6

The educational attainment of the parents of the 14 year olds children is less than that of the parents of the 4 year olds

children. The majority of fathers in the teenage group managed to attain only primary school level, 36.2%. The majority of mothers also attained only this level of education, 52.3%, a larger proportion than the fathers. Only 5.2% of fathers and 4.0% of mothers attained and completed Tertiary education.

The educational attainment of the parents of 25 to 35 year olds reflects the older age group. The majority of both parents had little or no education at all, and only 3.8% of fathers and 2.6% of mothers attained and completed tertiary education.

4.1.3 Family Household Income per Month

The family household income per month, in Hong Kong Dollars, for the overall study is seen in Table 4.5

Table 4.5 Monthly Household Income, Overall

Income (HK\$)	Number	Percent
0 - 1,999	22	2.9
2,000 - 3,999	109	14.6
4,000 - 5,999	150	20.1
6,000 - 7,999	180	24.1
8,000 - 9,999	148	19.8
Over 10,000	139	18.6

Overall there is an even distribution of income throughout the income categories, with only a small percentage of families with an income of less than HK\$ 1,999.

The monthly household income for the individual groups is seen in Table 4.6.

Table 4.6. Monthly Household Income Groups A to I, J to P, S to Z

Income (HK\$)	A to I		J to P		S to Z	
	No.	%	No.	%	No.	%
0 - 1,999	3	1.0	0	0.0	19	7.2
2,000 - 3,999	14	4.5	15	8.6	80	30.2
4,000 - 5,999	53	17.2	30	17.2	67	25.3
6,000 - 7,999	103	33.3	37	21.3	40	15.1
8,000 - 9,999	56	18.1	59	33.9	33	12.5
Over 10,000	80	25.9	33	19.0	26	9.8

The majority of the parents of the younger children had a monthly household income in the HK\$ 6,000 to HK\$ 7,999 range. A high proportion of the younger parents were also in the over HK\$ 10,000 range indicating a relatively well off situation. Only 22.7 % had a monthly income of less than HK\$ 6,000.

The majority of parents with 14 year olds children were in the HK\$ 8,000 to HK\$ 9,999 range but overall not as well off as the parents of the younger children with only 19.0% with a monthly income over HK\$ 10,000.

The parents of the children in the older age group, 25 to 35 year olds, were in a majority in the lower income groups, HK\$ 0 to HK\$ 5,999, with only a small proportion in the higher income group.

Over 60% had an monthly income of less than HK\$ 6,000 per month. Only 9.8% had a monthly income of over HK\$ 10,000.

4.1.4 Parental Occupation

Parental occupational coding is seen in Appendix V. The overall distribution of occupations for fathers and mothers for the whole study is seen in Table 4.7

Table 4.7. Parental Occupation Distribution, Overall

Code	Father		Mother	
	No.	%	No.	%
01	70	9.4	21	2.8
02	16	2.1	6	0.8
03	26	3.5	24	3.2
04	51	6.8	29	3.9
05	85	11.4	29	3.9
06	7	0.9	3	0.4
07	329	44.0	60	8.0
08	164	21.9	576	77.0

Overall, 44% of the fathers were in occupations in group 7, which is the group that includes production and related workers, transport equipment operators and labourers. Only 9.4% had professional and technical related employment, and 11.4% were in the service related group

Overall, the majority of mothers, 77%, were in group 8 which is the armed forces and unclassified group. Most mothers were housewives. Only 2.8% had professional and technical related employment, a lower number than fathers.

Occupational breakdown for fathers and mothers in each group is seen in Tables 4.8A, 4.8B and 4.8C.

Table 4.8A. Parental Occupation Distribution, Group A to I

Code	Father		Mother	
	No.	%	No.	%
01	36	11.7	10	3.2
02	10	3.2	2	0.6
03	12	3.9	17	5.5
04	26	8.4	11	3.6
05	46	14.9	8	2.6
06	4	1.3	3	1.0
07	169	54.7	17	5.5
08	6	1.9	241	78.0

The majority of fathers in this group, 54.7%, fall into occupation group 7 which is the production and related workers, transport and equipment operators and labourers. Over 11% of fathers were in group 1, the professional and technical related occupations. This was the third highest group.

The second highest group was group 5, the Service workers group, at 14.9%

The majority of mothers, 78%, fall into group 8 which is the unclassified group. Only 3.2% were in group 1.

Table 4.8B. Parental Occupation Distribution, Group J to P

Code	Father		Mother	
	No.	%	No.	%
01	24	13.8	7	4.0
02	5	2.9	3	1.7
03	7	4.0	6	3.4
04	16	9.2	10	5.7
05	25	14.4	10	5.7
06	2	1.1	0	0.0
07	81	46.6	19	10.9
08	14	8.0	118	67.9

The majority of fathers, 46.6%, in group J to P were in occupational group 7, which is the production and related workers, transport equipment operators and labourers. This is slightly more than those fathers of the younger children.

Slightly more fathers were in occupational group 1, 13.8%, than the fathers of the younger children in group A to I.

The proportion of fathers of 14 year olds who were service workers was 14.4%, very similar to that of the fathers of the younger children at 14.9%.

A slightly higher proportion of fathers in this group, 13.8%, were in occupational group 1.

The majority of mothers were in group 8, unclassified, whilst only 4% were in occupational group 1.

Table 4.8C. Parental Occupation Distribution, Group S to Z

Code	Father		Mother	
	No.	%	No.	%
01	10	3.8	4	1.5
02	1	0.4	1	0.4
03	7	2.6	1	0.4
04	9	3.4	8	3.0
05	14	5.3	11	4.2
06	1	0.4	0	0.0
07	79	29.8	24	9.1
08	144	54.3	216	81.5

The majority of fathers and mothers in this group were in occupational group 8, unclassified, as they were probably retired. Only 3.8% of fathers and 1.5% of mothers were in occupational group 1, whilst 29.8% of fathers and 9.1% of mothers were in group 7, the service occupations.

4.1.5 Child Ranking

In the study overall the majority of children ranked as number 1 and this is seen in Table 4.9.

Table 4.9. Child Ranking, Overall

Child's Ranking	Number	Percent
01	295	39.4
02	206	27.5
03	106	14.2
04	61	8.2
05	33	4.4
06	25	3.3
07	10	1.3
08	6	0.8
09	1	0.1
10	3	0.4
20	2	0.3

The majority of children were ranked 1, 2 and 3 with two ranked 20.

The child ranking breakdown into the three study groups is seen in Tables 4.10A, 4.10B and 4.10C.

Table 4.10A. Child Ranking, Group A to I

Child's Ranking	Number	Percent
01	153	49.5
02	110	35.6
03	33	10.7
04	7	2.3
05	3	1.0
06	1	0.3
08	1	0.3
20	1	0.3

The majority of children in group A to I were ranked 1 and 2 with one child ranked 20.

Table 4.10B. Child Ranking, Group J to P

Child's Ranking	Number	Percent
01	78	44.8
02	44	25.3
03	28	16.1
04	14	8.0
05	7	4.0
06	1	0.6
09	1	0.6
10	1	0.6

The majority of children in group J to P were grouped 1, 2 and 3, the majority in these rankings being ranked number 1. one child was ranked 6, one 9 and one 10.

The breakdown for group S to Z is seen in Table 4 10C.

Table 4.10C. Child Ranking, Group S to Z

Child's Ranking	Number	Percent
01	64	24.2
02	52	19.6
03	45	17.0
04	40	15.1
05	23	8.7
06	23	8.7
07	10	3.8
08	5	1.9
10	2	0.8
20	1	0.4

The majority of children in this group are ranked 1 and 2 and there is a fairly high proportion ranked 3 to 7. One child was ranked 20, indicating larger families in this older age range.

4.2 Data Derived from Parents Regarding Their Child

In this part of the parental interview the parents were asked questions about their handicapped child, circumstances of his or her birth and the feelings of the parents associated with the presence of a handicapped child in the family

4.2.1 Duration of Pregnancy

Overall, 82.8% of the pregnancies went to full term neither being premature or significantly overdue

In group A to I, 80.6% of pregnancies went to full term In group J to P, 80.5% and in group S to Z, 86.8%

4.2.2 Place of Birth

Overall the majority of children, 69.4%, were born in a Government Hospital. In the groups A to I, 74.4% were born in a Government Hospital, in group J to P, 65.5% were born in a Government Hospital and in group S to Z, 66.0% were born in a Government Hospital.

Overall only 6.8% were born in a private hospital. In group A to I, 12.6% were born in a private hospital, in group J to P, 4.0% and group S to Z only 1.9% This trend follows the more affluent younger group of parents.

4.2.3 Handicapping Information

When asked "From whom did you learn that your child was handicapped?" overall 71.5% learnt this information from a doctor and 48.7% also realised it themselves. The other informants were: nurse, midwife, and friends and relatives. Only 4.5% were told by a nurse, 0.9% by a midwife and 10.1% by friends and relatives.

In group A to I, 77.3% were told by a doctor and 41.7% had realised it themselves. Only 7.4% were told by a nurse. 1.0% by a midwife and 3.6% by friends and relatives.

In group J to P, 69.5% were told by a doctor and 41.4% had also realised it themselves. Only 1.1% were told by a nurse, none were told by a midwife and 2.8% by friends and relatives.

In group S to Z, 66.0% were informed by a doctor and 61.5% had also realised it themselves. Only 3.4% were told by a nurse, 1.5% by a midwife and a large 22.6% by friends and relatives.

4.2.4 Parental Reaction to their Child's Handicap

The response categories for the question "How did you feel when you first heard your child was handicapped?" were: Nothing, Shock, Confusion, Disbelief, Revulsion and Disappointment on a yes/no basis. More than one category could be yes. Overall, the major feeling was disappointment with 62.4% of the parents replying positively. Feeling nothing had a 10.8% positive reply, shock 29.7%, confusion 19.7%, disbelief 29.3%, revulsion a low 8.7%.

In group A to I, disappointment was the most common feeling at 64.7%. Next was disbelief with a 37.2% positive reply. Shock had a 29.8% positive response, confusion 17.8% and revulsion a low 9.4%.

In group J to P, disappointment had a 46.0% positive response, disbelief 27.6%, shock 32.2%, revulsion 6.9% and no reaction 6.9%.

In group S to Z, disappointment was a high 70.6%, 29.4% felt confused, 21.1% expressed disbelief, 9.1% revulsion and 14.0% nothing.

4.2.5 Cause of The Child's Handicap

Overall 58.6% were told the cause of the handicap, and of those who were not 73.5% did not ask.

In group A to I, 53.7% were told the cause of the handicap and of those who were not 80.6% did not ask.

In group J to P, 64.4% were told the cause of their child's handicap. Of those who were not 68.4% did not ask.

In group S to Z, 60.4% were told the cause of handicap. Of those who were not 68.7% did not ask.

The member of the family who looked after the handicapped child the most, overall groups, was the mother, 83.8%, with the grandmother next at 7.2%. The father was third with 4.7% of fathers the main person to look after the child.

In group A to I, 80.3% of the mothers were the main person to look after the child. Fathers only 0.6% with grandmothers 12.6%

In group J to P 85.6% of mothers looked after the child themselves, fathers 7.5% and grandmothers 6.3%

In group S to Z, 86.8% of mothers looked after the child, fathers 7.5% and grandmothers 1.5%. This reflects the older age group.

4.2.6 Concern for the Child's Future

The response categories to the question "Are you concerned about your child's future?" were. Not at all, A little, It is a major worry, It causes family conflict. Overall 77.3% said it was a major worry, 14.2% said they were a little concerned, 7.5% were not concerned at all and 1.0% said it caused family conflict.

In group A to I, 75.4% said it was a major worry, 14.2% were a little worried and 8.7% were not worried at all and 1.6% said it caused family conflict.

In group J to P, 72.4% felt the future was a major worry, 19.0% were a little worried and 8.6% were not worried at all.

In group S to Z, 82.6% felt the future for their child was a major worry, 10.9% were a little worried and 5.3% were not worried at all. A low 1.2% felt the future for their child caused family conflict.

4.2.7 Type of Future for the Child

There were three categories for this question: Poor, Mediocre and Good. Overall the majority were nearly equally divided between poor and mediocre. In the poor category 41.2% of the parents responded, 45.9% felt the future for their child to be mediocre and 12.9% felt the future to be good.

In group A to I, 20.7% of parents felt the future for their child to be poor, 55.3% mediocre and 23.9% to be good.

In group J to P, 33.3% felt the future for their child to be poor, 59.2% mediocre and 7.5% to be good.

In group S to Z, a large 70.2% of parents felt that the future for their child was poor, 26.0% mediocre and 3.8% good. A less optimistic result from the older age group.

4.2.8 Planning for the Child's Future

Overall a large 86.1% had not planned for their child's future. In group A to I a very large 97.7% had not planned for their child's future. In group J to P, 94.8% of parents had not planned for their child's future and in group S to Z, a lower 66.8% had not planned for their child's future with 33.2% having some arrangements in place for their child. Of these who had planned for the future 77% had managed to place their child in a sheltered workshop or adult workshop run by charity organisations.

4.3 SADP Data Derived from Parents

One of the scales used in the study was the Scale to Determine Attitudes Toward Disabled Persons, SADP. The raw scores for the scale for each individual group is seen in Appendix VIII

The scores in each group were normally distributed (Shapiro-Wilk W test, $p = 0.6560$, $p = 0.1149$ and $p = 0.6424$) and illustrated in Figs 4.1A, 4.1B and 4.1C.

Fig 4.1A. SADP Score Distribution, Group A to I

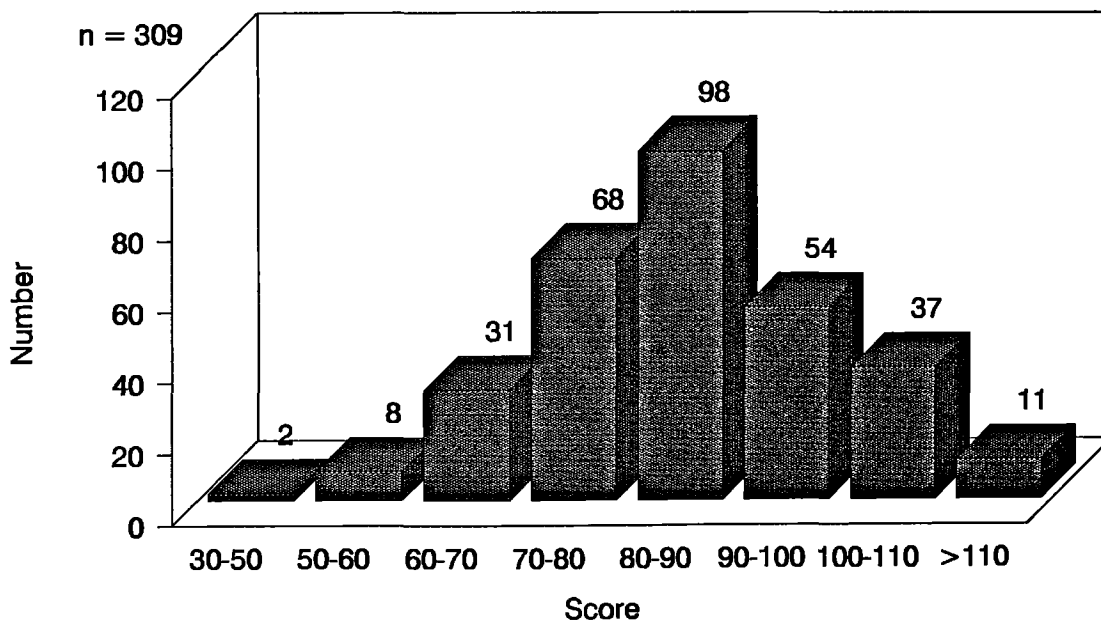


Fig 4.1B. SADP Score Distribution, Group J to P

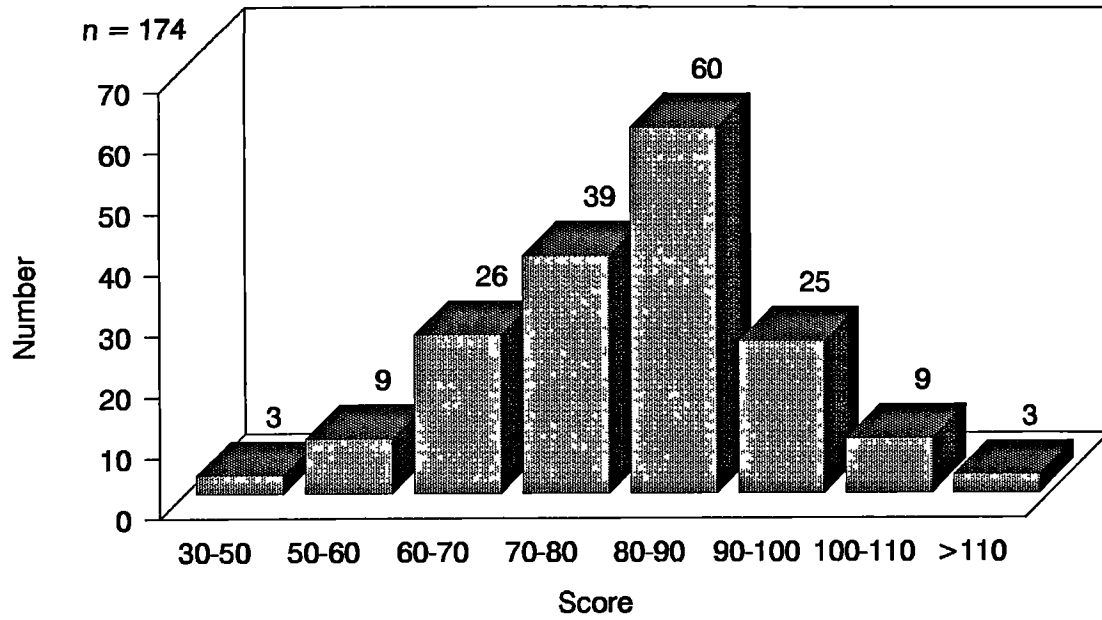
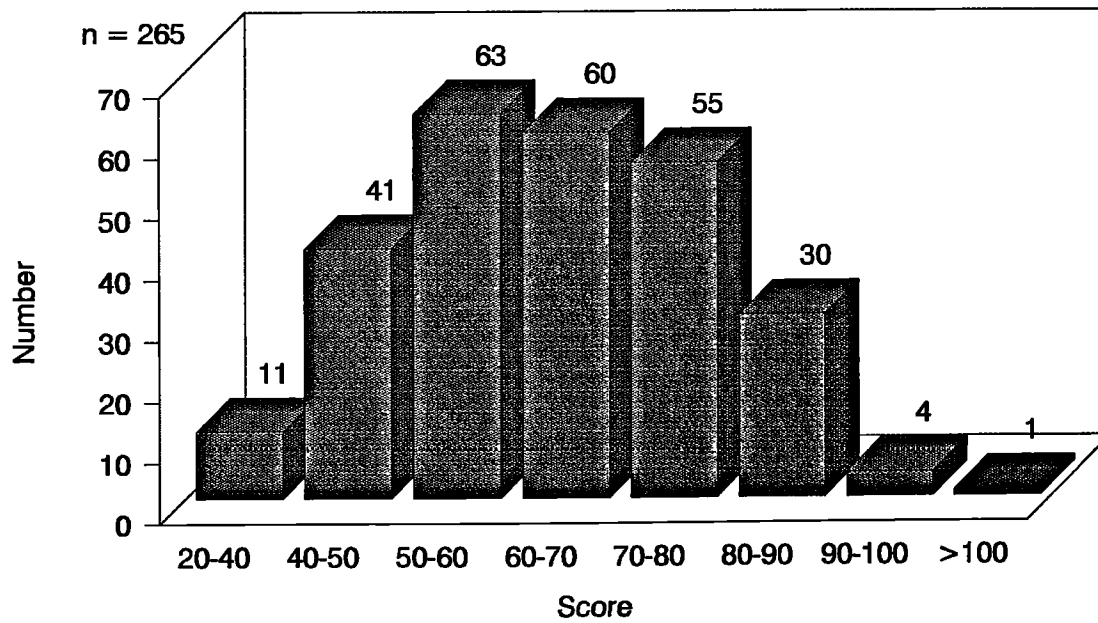


Fig 4.1C. SADP Score Distribution, Group S to Z

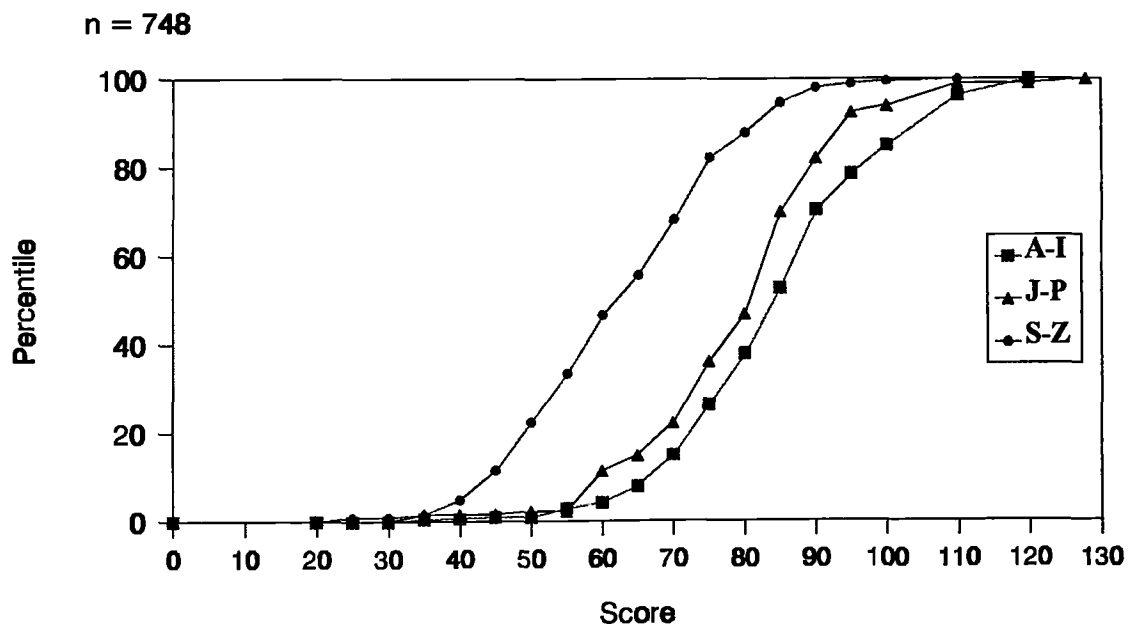


As the SADP scores for each group were normally distributed, parametric statistical tests can be used on the data. Percentile curves of the scores in each group are seen in Fig 4.2.

It can be seen from these curves that the percentile scores of the parents of 25 to 35 year olds siblings is lower than those of the other groups at an equivalent percentile level, and that the percentile scores of the parents of the 14 year olds siblings is lower than those of the parents of the 4 year olds siblings at an equivalent percentile level.

Analysis of variance confirms this, indicating that the variance between mean scores is highly significant (ANOVA, $p < 0.0001$).

Fig 4.2. SADP Percentile Score Curves, Individual Groups



Mean SADP scores for each group is seen in Table 4.11

Table 4.11. Mean SADP Scores, Individual Groups

Group	n	Mean	Score SD
A to I	309	84.54	13.98
J to P	174	79.59	14.13
S to Z	265	62.50	14.26

Student's *t* test, indicated that the difference between the means of:

Group A to I and J to P is significantly different ($p = 0.0009$)

Group A to I and S to Z is significantly different ($p < 0.0001$)

Group J to P and S to Z is significantly different ($p < 0.0001$)

There was no sexual dimorphism in scoring in any group:

Group A to I (t-test, $p = 0.4529$)

Group J to P (t-test, $p = 0.4569$)

Group S to Z (t-test, $p = 0.7554$)

Analysis of variance assumes that data columnised comes from populations with means of equal variances. When this was tested, using Bartlett's test, it was confirmed that there were no differences between variances ($p = 0.94$).

A Chronbach's α was calculated for the combined groups A to Z, and it was found that α was 0.71 for the standardized variables, and 0.70 for the raw variables. This shows the SADP to be a reliable instrument for the population under investigation.

Factor analyses were performed on the scale results in each group. An initial factor analysis of principal components was performed on each group scores and the total sample scores. The eigenvalues of the unrotated factor matrix are seen in Table 4.12.

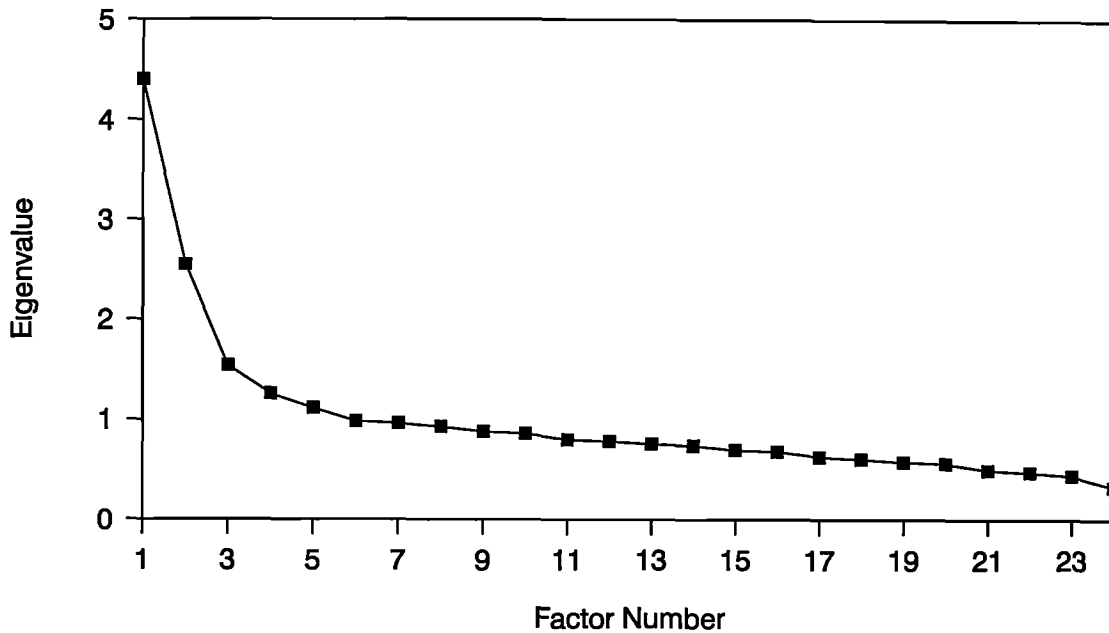
An examination of the unrotated factor matrix for the total sample, i.e. Group A to Z, and the application of Cattell's scree test (Cattell 1966) and the Kaiser criterion (Kaiser 1960) to the eigenvalues of the total sample, supported the retention of three interpretable group factors.

Table 4.12. Eigenvalues of Factor Matrix, Overall and Individual Groups

No.	Oveall		Group	
	A to Z (n = 748)	A to I (n = 309)	J to P (n = 174)	S to Z (n = 265)
01	4 403162	2 778141	3.707725	4.031588
02	2.548585	2.623399	2 913218	2 715917
03	1.536037	1 642798	1.818854	1.701493
04	1 254607	1.334282	1 555413	1 326736
05	1.113777	1.304015	1 419132	1.256213
06	0.981050	1.224031	1.217445	1 217524
07	0 960015	1.110948	1.184963	1.093953
08	0 925196	1.049242	1.077322	0.966748
09	0 876462	1 008678	1 055210	0 916884
10	0.856311	0 933216	0 940207	0 870738
11	0 795276	0 900656	0.859708	0 823887
12	0.779467	0 858823	0.843122	0.794933
13	0 754167	0.797610	0.725345	0.737490
14	0 737749	0.768233	0.668667	0.711726
15	0.694889	0.713652	0 629673	0.641353
16	0.679332	0.690072	0.543067	0.626205
17	0.626173	0 653342	0.506620	0.585108
18	0.604557	0.605042	0.463723	0.533630
19	0 574414	0.583007	0.421899	0.499094
20	0 561384	0.563264	0.342627	0.463260
21	0 496344	0.514198	0.326972	0.438085
22	0 473455	0.487074	0.288109	0.383706
23	0 441342	0 444217	0.255299	0.371719
24	0 326250	0.412058	0.235671	0.292064

The factor scree plot for the total sample A to Z is seen in Fig 4.3.

Fig 4.3. SADP Factor Scree Plot, Overall Groups



Three factors were retained and a three factor analysis on the SADP data for each group was performed.

This analysis, on the principal components to three factor groups, when combined, was accountable for.

- Group A to I 70.4% of the common variance
- Group J to P 84.4% of the common variance
- Group S to Z 84.5% of the common variance

Rotation of the factor matrix was performed to the varimax criterion, and the factor loading and communalities for each Group are seen in Tables 4.13A, 4.13B and 4.13C.

Table 4.13A. Varimax Rotational Method, Factor Loading, Group A to I

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	-0.15846	*0.28402	-0.09400	0.114613
02	0.01464	0.14445	*0.52627	0.298038
03	*0.64748	-0.15981	0.13711	0.463563
04	*0.46273	-0.03559	-0.25440	0.280102
05	0.26577	*0.42537	-0.22135	0.300570
06	0.05638	0.06540	*0.48722	0.244837
07	0.01514	0.05456	*0.66640	0.447295
08	*0.56042	-0.10576	-0.02490	0.325871
09	*0.40415	0.06034	-0.01482	0.167195
10	0.08367	*-0.11737	-0.09928	0.030635
11	0.08787	*0.44828	0.25253	0.272446
12	0.39539	*0.40353	0.27943	0.397242
13	0.16557	0.07597	*-0.44485	0.231078
14	0.26179	0.08223	*-0.39018	0.227539
15	-0.09760	*0.29187	-0.02319	0.095250
16	-0.05130	*0.61276	-0.13809	0.397180
17	0.33154	*0.39583	-0.04881	0.268984
18	*0.44284	-0.26926	0.10069	0.278747
19	*0.63965	0.03312	-0.24166	0.468648
20	0.02406	*0.60584	0.10348	0.378333
21	-0.10050	*0.30241	0.14990	0.124024
22	*0.50322	0.05072	-0.39009	0.407968
23	-0.07344	*0.60153	0.07731	0.373204
24	0.31260	*0.50435	0.31447	0.450977

An * indicates statements that have similarities which enable these statement to be placed into groupings e.g. statements 3, 4,

8, 9, 18, 19 and 22 can be placed into a separate group according to the similarity of the nature of the statement as is perceived by the respondents to that statement. Statements 1, 5, 10, 11, 12, 15, 16, 17, 20, 21, 23 and 24 form another group, and statements 2, 6, 7, 13 and 14 another. The grouping for statements 1, 10, 15 and 21 are somewhat marginal and could be grouped separately in possibly another factor.

These groups can be given names, and in this case the groupings are only relevant to parents of the 4 year old handicapped siblings, and may differ from the other parental groups.

The three factors above account for 70.4% of the common variance.

The groupings for Group J to P, seen in Table 4.12B, are statements 3, 4, 8, 9, 10, 14, 17, 18, 19 and 22 in one group. Statements 2, 6, 7, 13, 21, 23 and 24 in another, and statements 1, 5, 11, 12, 15, 16 and 20 in a third. Statements 1, 10, 14 and 17 are marginal and could be placed in another factor group.

The three factors above account for 84.4% of the common variance.

The statement groupings for Group S to Z, seen in table 4.12C, are: statements 1, 3, 4, 8, 12, 13, 14, 19, 22 and 24 in one group. Statements 5, 9, 10, 11, 16, 18, 20, 21 and 23 in another, and statements 2, 7, 6, 15 and 17 in a third. Statement 9 is marginal

Table 4.13B. Varimax Rotational Method, Factor Loading, Group J to P

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	-0.10157	0 12688	*0.28350	0.106788
02	0.00902	*0 63410	-0.04065	0.403814
03	*0.72815	-0.01352	0.12338	0.545614
04	*0.61898	-0.08442	-0.05621	0.393420
05	0.16803	-0.06242	*0 66973	0.480669
06	-0.40327	*0 43999	0.14808	0.378141
07	-0 07047	*0.76808	0.08460	0.602075
08	*0 69598	0.11539	-0.01360	0.497891
09	*0 52620	-0.23522	-0 04084	0 333890
10	*0 24872	0 02473	-0.22272	0 112078
11	0 04542	-0 25380	*0.55800	0.377835
12	0.06283	0.25791	*0.48705	0.307681
13	0.26764	*-0 57996	0 08615	0 415407
14	*0.26959	-0 25307	0.16456	0.163801
15	-0 10592	0.38707	*0 45877	0.371510
16	-0 11720	-0.10842	*0.74545	0.581185
17	*0 23101	0.19619	0 15663	0.116390
18	*0 33388	0.12909	0.00750	0.128197
19	*0 62532	-0 26355	-0 03987	0.462066
20	0.10561	0.32821	*0 60052	0.479499
21	-0.05800	*0.43067	0 07527	0.194510
22	*0 47707	-0 30685	0.12536	0 337469
23	0.04067	*0.45996	0.10299	0.223824
24	0 18472	*0.45511	0 42988	0.426042

Table 4.13C. Varimax Rotational Method, Factor Loading, Group S to Z

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	*-0.47707	0.23218	-0.04058	0.283155
02	-0.12832	0.03176	*0.48459	0.252299
03	*0.44603	-0.07708	-0.20677	0.247638
04	*0.54460	-0.14210	0.00454	0.316806
05	0.25573	*0.48700	-0.14656	0.324048
06	0.02274	0.18084	*0.65513	0.462413
07	-0.12033	-0.09057	*0.72264	0.544897
08	*0.47592	-0.05393	-0.01982	0.229802
09	0.15074	*-0.30052	-0.00959	0.113125
10	0.33900	*-0.48815	0.16757	0.381289
11	0.37982	*0.49216	-0.16420	0.413444
12	*0.67845	0.26352	0.09096	0.539372
13	*0.53787	0.16397	-0.13866	0.335422
14	*0.53996	0.06331	-0.06598	0.299917
15	-0.29146	0.03500	*0.34536	0.205449
16	0.28122	*0.62883	-0.05127	0.477145
17	0.25620	0.05906	*0.38284	0.215691
18	0.43122	*-0.49293	0.01505	0.429156
19	*0.61201	0.09093	-0.13346	0.400640
20	0.10622	*0.65455	0.17603	0.470701
21	-0.07360	*0.45695	0.22251	0.263730
22	*0.46810	0.14491	-0.42249	0.418607
23	-0.00063	*0.54598	0.27333	0.372800
24	*0.53298	0.40883	0.01364	0.451396

The three factors above account for 84.5% of the common variance.

There is also no sexual dimorphism in the scale scores (t-test, $p = 0.1727$), a finding similar to that of Antonak (1982) and O'Donnell (1993)

The SADP statements in each respondent group can be divided into three groupings, indicated by their factor loading for a three factor analysis, which shows their similarities as perceived by the respondents.

The major statement groupings in the respondent groups are seen in Table 4 14.

Table 4.14. SADP Statement Groupings by Respondent Groups

	Group A to I Statement No.	Group J to P Statement No.	Group S to Z Statement No.
Group 1	3, 4, 8, 9, 18, 19, 22	3, 4, 8, 9, 10, 14, 17, 18, 19, 22	1, 3, 4, 8, 12, 13, 14, 19, 22, 24
Group 2	1, 5, 10, 11, 12, 15, 16, 17, 20, 21, 23, 24	2, 6, 7, 13, 21, 23, 24	5, 9, 10, 11, 16, 18, 20, 21, 23
Group 3	2, 6, 7, 13, 14	1, 5, 11, 12, 15, 16, 20	2, 6, 7, 15, 17

The statements in these groups are, for Group A to I, parents of 4 year olds handicapped siblings:

Group 1

Statement 3: A disabled individual is not capable of making moral decisions.

Statement 4: The disabled should be prevented from having children

Statement 8: The disabled are in many ways like children.

Statement 9: The disabled need only the proper environment and opportunity to develop and express criminal tendencies.

Statement 18: Simple repetitive work is appropriate for the disabled.

Statement 19: The disabled show a deviant personality profile

Statement 22: The disabled engage in bizarre sexual activities.

Group 2

Statement 1: The disabled should not be provided with a free public education.

Statement 5: The disabled should be allowed to live where and how they chose.

Statement 10: Disabled adults should be voluntarily committed to an institution following arrest.

Statement 11: Most disabled people are willing to work.

Statement 12: Disabled individuals are able to adjust to life outside an institutional setting.

Statement 15: Group homes for the disabled should not be prohibited in residential areas

Statement 16 The opportunity for gainful employment should be provided to disabled people

Statement 17: Disabled children in regular classrooms have an adverse effect on other children.

Statement 20: Equal employment opportunities should be provided to disabled people

Statement 21: Laws to prevent employers from discriminating against the disabled should be passed.

Statement 23: Disabled workers should receive at least the minimum wage established for their jobs.

Statement 24: Disabled individuals can be expected to fit into competitive society

Group 3

Statement 2: Disabled people are not more accident prone than other people

Statement 6. Adequate housing for the disabled is neither too expensive nor too difficult to build.

Statement 7: Rehabilitation programmes for the disabled are too expensive to operate.

Statement 13: The disabled should not be prohibited from obtaining a driver's license.

Statement 14: Disabled people should live with others of similar disability.

The trends in the groupings can be seen i.e. Group 1 is oppressive with a number of misconceptions regarding handicapped individuals.

Group 2 is a little more optimistic, whilst Group 3 is a mixture of both optimism and pessimism.

From the factor loading, statement 10 is marginal and could be placed in another factor group. Similarly, statement 14 could be placed in Group 1 or 2, Group 1 being more appropriate.

The individual scoring for each statement are seen in Table 4.15. The means of the statement scores are seen in Table 4.16

Table 4.15. SADP Individual Statement Scores, Group A to I

Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	%								
01	-3	241	78	0	-2	32	10	4	-1	4	1	3	1	5	1	6	2	4	1	3	3	23	7	4
02	-3	72	23	3	-2	57	18	4	-1	26	8	4	1	15	4	9	2	89	28	8	3	50	16	2
03	-3	26	8	4	-2	72	23	3	-1	33	10	7	1	32	10	4	2	91	29	4	3	55	17	8
04	-3	26	8	4	-2	44	14	2	-1	31	10	0	1	40	12	9	2	56	18	1	3	112	36	2
05	-3	153	49	5	-2	105	34	0	-1	23	7	4	1	5	1	6	2	14	4	5	3	9	2	9
06	-3	66	21	4	-2	73	23	6	-1	40	12	9	1	20	6	5	2	60	19	4	3	50	16	2
07	-3	32	10	4	-2	28	9	1	-1	15	4	9	1	31	10	0	2	81	26	2	3	122	39	5
08	-3	19	6	1	-2	25	8	1	-1	15	4	9	1	40	12	9	2	77	24	9	3	133	43	0
09	-3	59	19	1	-2	64	20	7	-1	22	7	1	1	41	13	3	2	82	26	5	3	41	13	3
10	-3	28	9	1	-2	56	18	1	-1	15	4	9	1	38	12	3	2	102	33	0	3	70	22	7
11	-3	137	44	3	-2	111	35	9	-1	29	9	4	1	12	3	9	2	13	4	2	3	7	2	3
12	-3	92	29	8	-2	113	36	6	-1	45	14	6	1	21	6	8	2	28	9	1	3	10	3	2
13	-3	59	19	1	-2	59	19	1	-1	23	7	4	1	23	7	4	2	50	16	2	3	95	30	7
14	-3	115	37	2	-2	67	21	7	-1	15	4	9	1	21	6	8	2	48	15	5	3	43	13	9
15	-3	136	44	0	-2	92	29	8	-1	9	2	9	1	4	1	3	2	44	14	2	3	24	7	8
16	-3	229	74	1	-2	78	25	2	-1	0	0	0	1	0	0	0	2	1	0	3	3	1	0	3
17	-3	77	24	9	-2	67	21	7	-1	17	5	5	1	55	17	8	2	60	19	4	3	33	10	7
18	-3	6	1	9	-2	15	4	9	-1	5	1	6	1	15	4	9	2	82	26	5	3	186	60	2
19	-3	31	10	0	-2	36	11	7	-1	18	5	8	1	47	15	2	2	87	28	2	3	90	29	1
20	-3	192	62	1	-2	81	26	2	-1	14	4	5	1	7	2	3	2	9	2	9	3	6	1	9
21	-3	227	73	5	-2	50	16	2	-1	6	1	9	1	4	1	3	2	15	4	9	3	7	2	3
22	-3	36	11	7	-2	53	17	2	-1	29	9	4	1	52	16	8	2	69	22	3	3	70	22	7
23	-3	205	66	3	-2	77	24	9	-1	10	3	2	1	8	2	6	2	7	2	3	3	2	0	6
24	-3	76	24	6	-2	101	32	7	-1	47	15	2	1	25	8	1	2	48	15	5	3	12	3	9

From the above figures, the majority of parents of the 4 year olds disagreed with :

Statement 1: The disabled should not be provided with a free public education

Statement 2: Disabled people are not more accident prone than other people.

- Statement 5 The disabled should be allowed to live where and how they chose.
- Statement 6. Adequate housing for the disabled is neither too expensive nor too difficult to build
- Statement 11: Most disabled people are willing to work
- Statement 12: Disabled individuals are able to adjust to life outside an institutional setting.
- Statement 14. Disabled people should live with others of similar disability
- Statement 15: Group homes for the disabled should not be prohibited in residential districts
- Statement 16: The opportunity for gainful employment should be provided to disabled people
- Statement 17. Disabled children in regular classrooms have an adverse effect on other children.
- Statement 20. Equal employment opportunities should be provided to disabled people.
- Statement 21: Laws to prevent employers from discriminating against the disabled should be passed.
- Statement 23: Disabled workers should receive at least the minimum wage established for their jobs.

Statement 24. Disabled individuals can be expected to fit into competitive society.

The majority of the parents of this younger age group agreed with:

Statement 3. A disabled individual is not capable of making moral decisions

Statement 4 The disabled should be prevented from having children

Statement 7. Rehabilitation programmes for the disabled are too expensive to operate.

Statement 8. The disabled are in many ways like children.

Statement 9 The disabled need only the proper environment and opportunity to develop and express criminal tendencies.

Statement 10. Disabled adults should be voluntarily committed to an institution following arrest.

Statement 13: The disabled should not be prohibited from obtaining a driver's license

Statement 18. Simple repetitive work is appropriate for the disabled.

Statement 19 The disabled show a deviant personality profile.

Statement 22: The disabled engage in bizarre and deviant sexual activities.

Table 4.16. Mean SADP Item Scores, Group A to I

	Mean Score	Std Dev	Std Error	t	p-value
01	-2.294	1.711	0.097	-23.556	0.0001
02*	-0.042	2.365	0.135	-0.313	0.7547
03	0.041	2.129	0.121	3.313	0.0010
04	0.942	2.161	0.123	7.659	0.0001
05*	-2.045	1.471	0.084	-24.388	0.0001
06*	-0.304	2.284	0.130	-2.341	0.0199
07	1.269	2.110	0.120	10.571	0.0001
08	1.524	1.902	0.108	14.075	0.0001
09	0.003	2.241	0.127	0.025	0.9798
10	0.780	2.116	0.120	6.479	0.0001
11*	-1.951	1.460	0.083	-23.500	0.0001
12*	-1.424	1.730	0.098	-14.471	0.0001
13*	0.291	2.445	0.139	2.094	0.0371
14	-0.803	2.362	0.134	-5.972	0.0001
15*	-1.414	2.116	0.120	-11.749	0.0001
16*	-2.712	0.607	0.035	-78.578	0.0001
17	-0.350	2.230	0.127	-2.755	0.0062
18	2.214	1.421	0.081	27.384	0.0001
19	0.997	2.085	0.119	8.403	0.0001
20*	-2.294	1.319	0.075	-30.569	0.0001
21*	-2.369	1.444	0.082	-28.844	0.0001
22	0.508	2.165	0.123	4.126	0.0001
23*	-2.430	1.128	0.064	-37.882	0.0001
24*	-1.036	1.914	0.109	-9.510	0.0001

These figures show that there are no real extremes of opinion on statements 2 ($p = 0.7547$) and 9 ($p = 0.9798$).

Statement 2: Disabled people are not more accident prone than other people.

Statement 9: The disabled need only the proper environment and opportunity to develop and express criminal tendencies.

The statements marked with an * are statements that agreement with indicates a favourable attitude. The results show that Group A to I respondents' attitude towards disabled persons is not all that positive, as disagreement with all but one * statement is evident. This is statement 13.

Statement 13 The disabled should not be prohibited from obtaining a driver's license

The statement groupings for Group J to P are:

Group 1

Statement 3: A disabled person is not capable of making moral decisions.

Statement 4 The disabled should be prevented from having children.

Statement 8. The disabled are in many ways like children.

Statement 9: The disabled need only the proper environment and opportunity to develop and express criminal tendencies.

Statement 10. Disabled adults should be voluntarily committed to an institution following arrest.

Statement 14. Disabled people should live with others of similar disability.

Statement 17. Disabled children in regular classrooms have an adverse effect on other children.

Statement 18. Simple repetitive work is appropriate for the disabled.

Statement 19. The disabled show a deviant personality profile.

Statement 22. The disabled engage in bizarre and deviant sexual activity.

Group 2

Statement 2. Disabled people are not more accident prone than other people.

Statement 6. Adequate housing for the disabled is neither too expensive nor too difficult to build.

Statement 7. Rehabilitation programmes for the disabled are too expensive to operate.

Statement 13. The disabled should not be prohibited from obtaining a driver's license.

Statement 21 Laws to prevent employers from discriminating against the disabled should be passed.

Statement 23: Disabled workers should receive at least the minimum wage established for their job.

Statement 24· Disabled individuals can be expected to fit into competitive society.

Group 3

Statement 1: The disabled should not be provided with a free public education.

Statement 5 The disabled should be allowed to live where and how they chose.

Statement 11· Most disabled people are willing to work.

Statement 12. Disabled individuals are able to adjust to life outside an institutional setting.

Statement 15 Group homes for the disabled should not be prohibited in residential districts.

Statement 16: The opportunity for gainful employment should be provided to disabled people.

Statement 20: Equal employment opportunities should be provided to disabled people.

Results

In this group i.e. parents of 14 year olds handicapped siblings, there are more easily defined groupings. Group 1 shows general misconception and depressing attitude. Group 2 shows an optimistic attitude on social integration. The SADP scoring for Group J to P is seen in Table 4.17

Table 4.17. SADP Individual Statement Scores, Group J to P

Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	%								
01	-3	123	70	7	-2	15	8	6	-1	18	10	3	1	2	1	1	2	0	0	0	3	16	9	2
02	-3	34	19	5	-2	41	23	6	-1	7	4	0	1	14	8	0	2	40	23	0	3	38	21	8
03	-3	11	6	3	-2	26	14	9	-1	12	6	9	1	9	5	2	2	57	32	8	3	59	33	9
04	-3	7	4	0	-2	13	7	5	-1	9	5	2	1	11	6	3	2	20	11	5	3	114	65	5
05	-3	80	46	0	-2	56	32	2	-1	15	8	6	1	2	1	1	2	10	5	7	3	11	6	3
06	-3	60	35	6	-2	41	23	6	-1	6	3	4	1	7	4	0	2	39	22	4	3	19	10	9
07	-3	38	21	8	-2	17	9	8	-1	12	6	9	1	10	5	7	2	46	26	4	3	51	29	3
08	-3	4	2	3	-2	7	4	0	-1	12	6	9	1	12	6	9	2	45	25	9	3	94	54	0
09	-3	20	11	5	-2	33	19	0	-1	23	13	2	1	18	10	3	2	47	27	0	3	33	19	0
10	-3	14	8	0	-2	33	19	0	-1	11	6	3	1	23	13	3	2	66	37	9	3	27	15	5
11	-3	59	33	9	-2	67	38	5	-1	24	13	8	1	4	2	3	2	13	7	5	3	7	4	0
12	-3	31	17	8	-2	67	38	5	-1	30	17	2	1	9	5	2	2	20	11	5	3	17	9	8
13	-3	37	21	3	-2	32	18	4	-1	17	9	8	1	7	4	0	2	29	16	7	3	52	29	9
14	-3	26	14	9	-2	27	15	5	-1	18	10	3	1	9	5	2	2	44	25	3	3	50	28	7
15	-3	91	52	3	-2	38	21	8	-1	8	4	6	1	13	7	5	2	16	9	2	3	8	4	6
16	-3	112	64	4	-2	58	33	3	-1	2	1	1	1	0	0	0	2	1	0	6	3	1	0	6
17	-3	42	24	1	-2	38	21	8	-1	19	10	9	1	18	10	3	2	42	24	1	3	15	8	6
18	-3	5	2	9	-2	5	2	9	-1	4	2	3	1	8	4	6	2	52	29	9	3	100	57	5
19	-3	16	9	2	-2	17	9	8	-1	14	8	0	1	17	9	8	2	44	25	3	3	66	37	9
20	-3	91	52	3	-2	54	31	0	-1	17	9	8	1	4	2	3	2	6	3	4	3	2	1	1
21	-3	123	70	7	-2	36	20	7	-1	5	2	9	1	0	0	0	2	4	2	3	3	6	3	4
22	-3	23	13	2	-2	28	16	1	-1	11	6	3	1	24	13	8	2	34	19	5	3	54	31	0
23	-3	117	67	2	-2	35	20	1	-1	9	5	2	1	5	2	9	2	5	2	9	3	3	1	7
24	-3	32	18	4	-2	61	35	1	-1	16	9	2	1	16	9	2	2	32	18	4	3	17	9	8

These figures indicate that for this parental group, parents of the 14 year olds, the majority disagree with

- Statement 1: The disabled should not be provided with a free public education.
- Statement 5. The disabled should be allowed to live where and how they chose.
- Statement 6. Adequate housing for the disabled is neither too expensive nor too difficult to build
- Statement 11: Most disabled people are willing to work
- Statement 12: Disabled individuals are able to adjust to life outside an institutional setting
- Statement 15. Group homes for the disabled should not be prohibited in residential districts.
- Statement 16: The opportunity for gainful employment should be provided to disabled people.
- Statement 17: Disabled children in regular classrooms have an adverse effect on other children.
- Statement 20. Equal employment opportunities should be provided to disabled people.
- Statement 21: Laws to prevent employers from discriminating against the disabled should be passed.
- Statement 23: Disabled workers should receive at least the minimum wage established for their jobs.

Statement 24. Disabled individuals can be expected to fit into competitive society.

Disagreement was relatively marginal for statements 17 and 24.

The majority of parents, in this group, agreed with :

Statement 2: Disabled people are not more accident prone than other people.

Statement 3 A disabled individual is not capable of making moral decisions.

Statement 4. The disabled should be prevented from having children.

Statement 7: Rehabilitation programmes for the disabled are too expensive to operate.

Statement 8. The disabled are in many ways like children.

Statement 9 The disabled need only the proper environment and opportunity to develop and express criminal tendencies.

Statement 10. Disabled adults should be voluntarily committed to an institution following arrest

Statement 13: The disabled should not be prohibited from obtaining a driver's license.

Statement 14 Disabled people should live with others of similar disability.

Statement 18: Simple repetitive work is appropriate for the disabled.

Statement 19: The disabled show a deviant personality profile.

Statement 22: The disabled engage in bizarre and deviant sexual behaviour.

The degree of agreement is very marginal for statement 2 and the degree of disagreement marginal for statement 13

Statement 2: Disabled people are not more accident prone than other people

Statement 13: The disabled should not be prohibited from obtaining a driver's license

The means of the statement scores are seen in Table 4.18

Table 4.18. Mean SADP Scores, Group J to P

	Mean Score	Std Dev	Std Error	t	p-value
01	-2.109	1.794	0.136	-15.507	0.0001
02*	0.098	2.394	0.181	0.538	0.5910
03	1.167	2.077	0.157	7.410	0.0001
04	1.937	1.844	0.140	13.854	0.0001
05*	-1.793	1.768	0.134	-13.381	0.0001
06*	-1.759	2.358	0.179	-4.244	0.0001
07	0.546	2.432	0.184	2.961	0.0035
08	1.989	1.569	0.119	16.716	0.0001
09	0.356	2.172	0.165	2.164	0.0318
10	0.672	2.041	0.155	4.347	0.0001
11*	-1.632	1.663	0.126	-12.946	0.0001
12*	-0.902	1.979	0.150	-6.015	0.0001
13*	0.167	2.480	0.188	0.886	0.3766
14	0.557	2.332	0.177	3.153	0.0019
15*	-1.655	1.940	0.147	-11.252	0.0001
16*	-2.580	0.746	0.057	-45.605	0.0001
17	-0.425	2.202	0.167	-2.548	0.0117
18	2.201	1.406	0.107	20.652	0.0001
19	1.190	2.105	0.160	7.454	0.0001
20*	-2.161	1.285	0.097	-22.189	0.0001
21*	-2.414	1.343	0.102	-23.702	0.0001
22	0.678	2.276	0.173	3.931	0.0001
23*	-2.333	1.331	0.101	-23.118	0.0001
24*	-0.592	2.129	0.161	-3.668	0.0003

There are no real extremes of opinion on statement 2 ($p = 0.5910$) and statement 13 ($p = 0.3766$).

The statements marked with an * are statements that agreement with indicate a favourable response. Group J to P has only two * statements which have elicited agreement. These statements are statement 2 and 13 where there is no real extremes of opinion, but there is marginal agreement

There is only one non * statement eliciting a negative score or favourable response, statement 17.

Statement 17: Disabled children in regular classrooms have an adverse effect on other children.

The statement groupings for Group S to Z are:

Group 1

Statement 1: The disabled should not be provided with a free public education

Statement 3 A disabled person is not capable of making moral decisions.

Statement 4: The disabled should be prevented from having children.

Statement 8: The disabled are in many ways like children.

Statement 12: Disabled individuals are able to adjust to life outside an institutional setting.

Statement 13: The disabled should not be prohibited from obtaining a driver's license

Statement 14 Disabled people should live with others of similar disabilities.

Statement 19 The disabled show a deviant personality profile

Statement 22. The disabled engage in bizarre and deviant sexual activity.

Statement 24: Disabled individuals can be expected to fit into competitive society

Group 2

Statement 5. The disabled should be allowed to live where and how they chose.

Statement 9 The disabled need only the proper environment and opportunity to develop and express criminal tendencies

Statement 10. Disabled adults should be voluntarily committed to an institution following arrest

Statement 11: Most disabled people are willing to work.

Statement 16. The opportunity for gainful employment should be provided to disabled people.

Statement 18. Simple repetitive work is appropriate for the disabled.

Statement 20. Equal employment opportunities should be provided to disabled people.

Statement 21. Laws to prevent employers from discriminating against the disabled should be passed

Statement 23: Disabled workers should receive at least the minimum wage established for their job.

Group 3

Statement 2: Disabled people are not more accident prone than other people.

Statement 6. Adequate housing for the disabled is neither too expensive nor too difficult to build

Statement 7. Rehabilitation programmes for the disabled are too expensive to operate.

Statement 15. Group homes for the disabled should not be prohibited in residential areas.

Statement 17: Disabled children in regular classrooms have an adverse effect on other children.

The statement groupings for the parents of 25 to 35 year olds siblings show grouping into a negative, misconception group, a group concerned with the working environment, which is generally positive, and a small group concerned with social environment. Statement groupings have been termed Group 1,

Group 2 and Group 3, but are individually exclusive. The group numbers are merely labels for the statement groupings.

Individual scoring for each statement in this respondent group is seen in Table 4 19.

Table 4.19. SADP Individual Statement Scores, Group S to Z

Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%							
01	-3	202	76	2	-2	31	11	7	-1	2	0	8	1	3	1	1	2	9	3	4	3	18	6	8
02	-3	74	27	9	-2	68	25	7	-1	27	10	2	1	17	6	4	2	45	0	3	3	34	12	2
03	-3	0	0	0	-2	13	4	9	-1	11	4	2	1	29	10	9	2	56	21	1	3	156	58	2
04	-3	6	2	3	-2	6	2	3	-1	5	1	9	1	20	7	3	2	25	9	4	3	203	76	6
05	-3	50	18	9	-2	50	18	9	-1	33	12	5	1	18	6	8	2	29	10	9	3	85	32	1
06	-3	61	23	0	-2	82	30	9	-1	31	11	7	1	27	10	2	2	45	17	0	3	19	7	2
07	-3	29	10	9	-2	62	23	4	-1	11	4	2	1	30	11	3	2	63	23	8	3	70	26	4
08	-3	1	0	4	-2	6	2	3	-1	3	1	1	1	16	6	0	2	48	18	1	3	191	72	1
09	-3	36	13	6	-2	36	13	6	-1	23	8	7	1	27	10	2	2	85	32	1	3	58	21	9
10	-3	9	3	4	-2	27	10	2	-1	18	6	8	1	42	15	8	2	115	43	4	3	54	20	4
11	-3	60	22	6	-2	64	24	2	-1	39	14	7	1	16	6	0	2	38	14	3	3	48	18	1
12	-3	27	10	2	-2	38	14	3	-1	22	8	3	1	21	7	9	2	43	16	2	3	114	43	0
13	-3	44	16	6	-2	14	5	3	-1	10	3	8	1	16	6	0	2	21	7	9	3	160	60	4
14	-3	17	6	4	-2	19	7	2	-1	9	3	4	1	22	8	3	2	51	19	2	3	147	55	5
15	-3	113	42	6	-2	65	24	2	-1	26	9	8	1	8	3	0	2	25	9	4	3	28	10	6
16	-3	123	46	4	-2	78	29	4	-1	23	8	7	1	3	1	1	2	16	6	0	3	22	8	3
17	-3	35	13	2	-2	43	16	2	-1	21	7	9	1	47	17	7	2	51	19	2	3	68	25	7
18	-3	3	1	1	-2	4	1	5	-1	2	0	8	1	22	8	3	2	50	18	9	3	184	68	2
19	-3	8	3	0	-2	5	1	9	-1	8	3	0	1	38	14	3	2	52	19	6	3	154	58	1
20	-3	99	37	4	-2	85	32	1	-1	33	12	5	1	10	3	8	2	21	7	9	3	17	6	4
21	-3	112	42	3	-2	105	39	6	-1	29	10	9	1	5	1	9	2	4	1	5	3	10	3	8
22	-3	7	2	6	-2	11	4	2	-1	18	6	8	1	55	20	8	2	45	17	0	3	129	48	7
23	-3	106	40	0	-2	97	36	6	-1	43	16	2	1	9	3	4	2	4	1	5	3	6	2	3
24	-3	15	5	7	-2	24	9	1	-1	42	15	8	1	16	6	0	2	45	17	0	3	123	46	4

The majority of parents in this group disagreed with :

Statement 1: The disabled should not be provided with a free public education

Statement 2. Disabled people are not more accident prone than other people.

Statement 6: Adequate housing for the disabled is neither too expensive nor too difficult to build.

Statement 11: Most disabled people are willing to work.

Statement 15: Group homes for the disabled should not be prohibited in residential districts.

Statement 16. The opportunity for gainful employment should be provided to disabled people.

Statement 20: Equal employment opportunities should be provided to disabled people.

Statement 21: Laws to prevent employers from discriminating against the disabled should be passed.

Statement 23. Disabled workers should receive at least the minimum wage established for their jobs.

The majority of parents in this respondent group agreed with the following:

Statement 3: A disabled individual is not capable of making moral decisions.

- Statement 4: The disabled should be prevented from having children.
- Statement 5: The disabled should be allowed to live where and how they chose.
- Statement 7: Rehabilitation programmes for the disabled are too expensive to operate
- Statement 8 The disabled are in many ways like children.
- Statement 9: The disabled need only the proper environment and opportunity to develop and express criminal tendencies
- Statement 10: Disabled adults should be voluntarily committed to an institution following arrest.
- Statement 12: Disabled individuals are able to adjust to life outside an institutional setting.
- Statement 13 The disabled should not be prohibited from obtaining a driver's license.
- Statement 14. Disabled people should live with others of similar disability
- Statement 17. Disabled children in regular classrooms have an adverse effect on other children.

Statement 18. Simple repetitive work is appropriate for the disabled.

Statement 19: The disabled show a deviant personality profile.

Statement 22: The disabled engage in bizarre and deviant sexual activity.

Statement 24: Disabled individuals can be expected to fit into competitive society

There is only one statement that is marginal as to whether there is agreement or disagreement. This is statement 5 where there is marginal agreement.

Statement 5: The disabled should be allowed to live and work where they chose

The means of the statement scores are seen in Table 4 20.

Statements marked with an * in table 4 20 are statements that agreement with indicate a favourable response. Non * statements are statements that disagreement with indicate a favourable response

Table 4.20. Mean SADP Scores, Group S to Z

	Mean Score	Std Dev	Std Error	t	p-value
01	-2.245	1.751	0.108	-20.879	0 0001
02*	-0 664	2.262	0.139	-4.779	0 0001
03	2.158	1 356	0 083	25.915	0 0001
04	2.430	1.327	0 082	29.810	0.0001
05*	0.181	2.441	0 150	1.208	0.2282
06*	-0.770	2.068	0.127	-6.060	0.0001
07	0.543	2.264	0.139	3.906	0.0001
08	2.517	1.308	0.064	39.492	0.0001
09	0.634	2.196	1.135	4.699	0 0001
10	1 264	1.709	0.105	12.038	0 0001
11*	-0.419	2 293	0.141	-2.973	0 0032
12*	1.019	2 270	0 139	7 305	0 0001
13*	1.389	2.376	0 146	9.512	0.0001
14	1.762	1.911	0.117	15 012	0 0001
15*	-1.332	2.126	0.131	-10 202	0 0001
16*	-1.687	1 900	0.117	-14.452	0.0001
17	0.532	2.216	0 136	3 909	0.0001
18	2.472	1.073	0.066	37.494	0.0001
19	2.121	1.430	0.088	24.136	0.0001
20*	-1.498	1.863	0.114	-13.091	0.0001
21*	-2.008	1.376	0.085	-23.747	0.0001
22	1.777	1.609	0.099	17.977	0.0001
23*	-1.962	1.296	0.080	-24.642	0.0001
24*	1.283	2.078	0.128	10 052	0 0001

There were four statements with an * that were answered positively, statements 5, 12, 13 and 24.

Statement 5. The disabled should be allowed to live and work where they chose.

Statement 12. Disabled individuals are able to adjust to life outside an institutional setting

Statement 13 The disabled should not be prohibited from obtaining a driver's license.

Statement 24: Disabled individuals can be expected to fit into competitive society.

There are no real extremes of opinion on statement 5 ($p = 0.2282$) with marginal agreement

4.4 Data Derived from Parental Attitude Scale

The scores of the Parental Attitude Scale for each group are seen in Appendix VII. The mean scores are seen in Table 4.21.

Table 4.21. Parental Attitude Scale Mean Scores, All Groups

Group	n	Mean	Score SD
A to I	309	78.67	11.78
J to P	174	76.44	14.57
S to Z	265	75.72	15.58

The Scores of the Parental Attitude Scale were normally distributed for each group. Being normally distributed means that parametric statistical tests can be performed on the results.

The distribution of the scores for Groups A to I, J to P and S to Z are illustrated in Figs 4.4A, 4.4B and 4.4C.

Fig 4.4A. Parental Attitude Scale Score Distribution, Group A to I

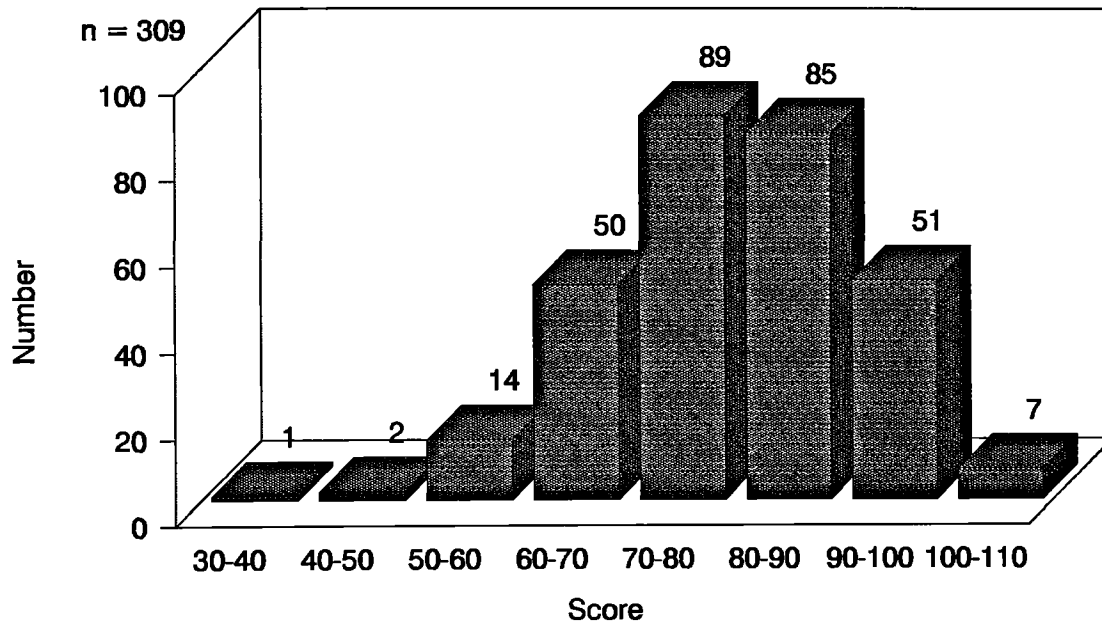


Fig 4.4B. Parental Attitude Scale Score Distribution, Group J to P

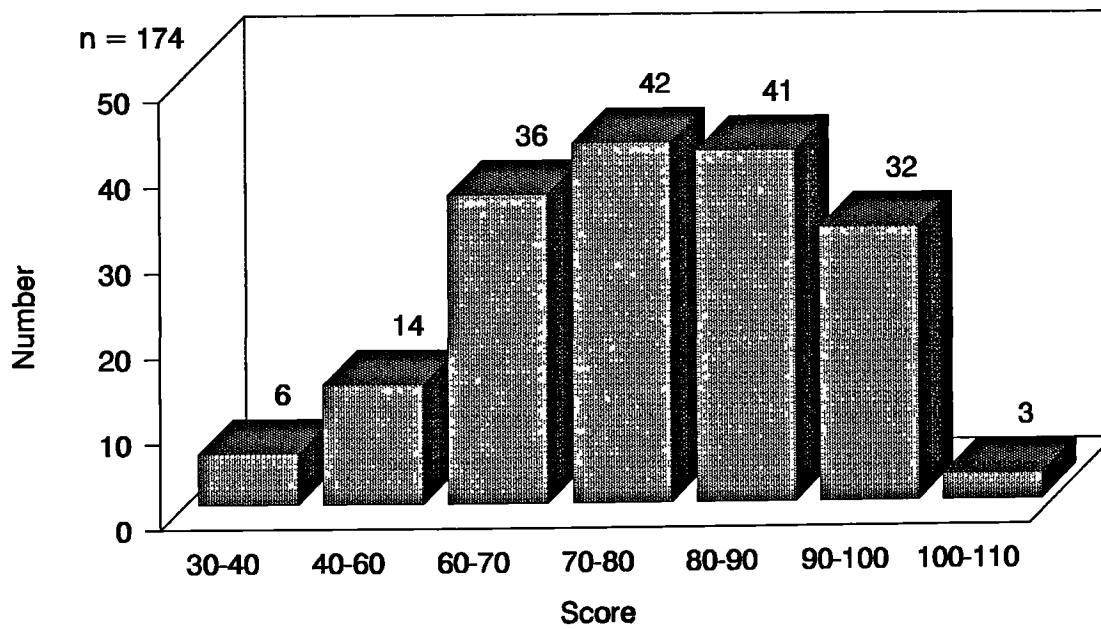
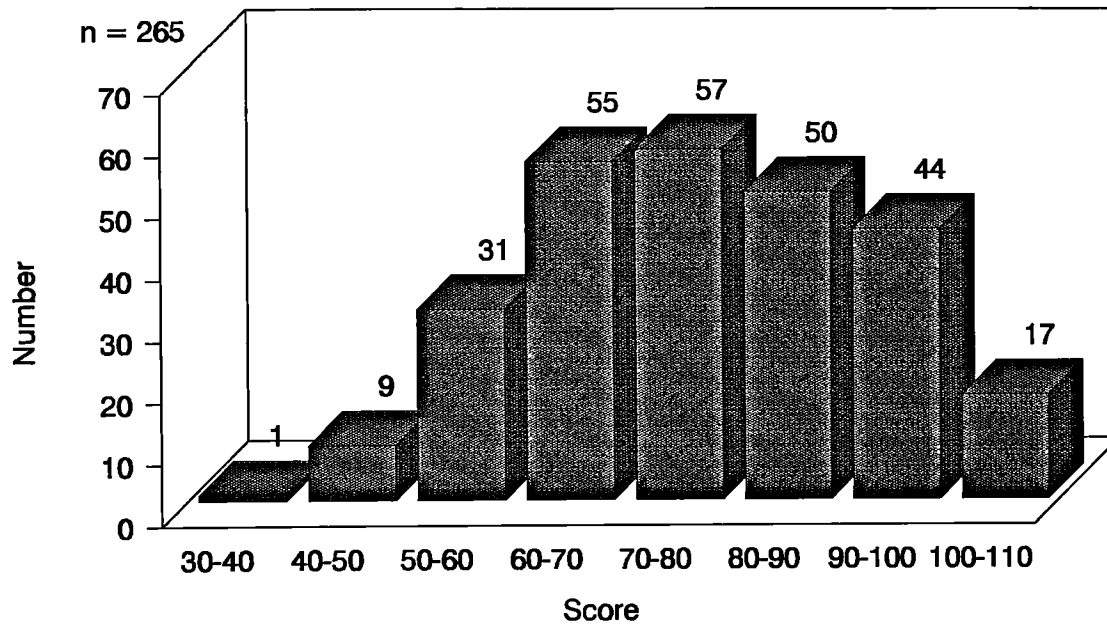
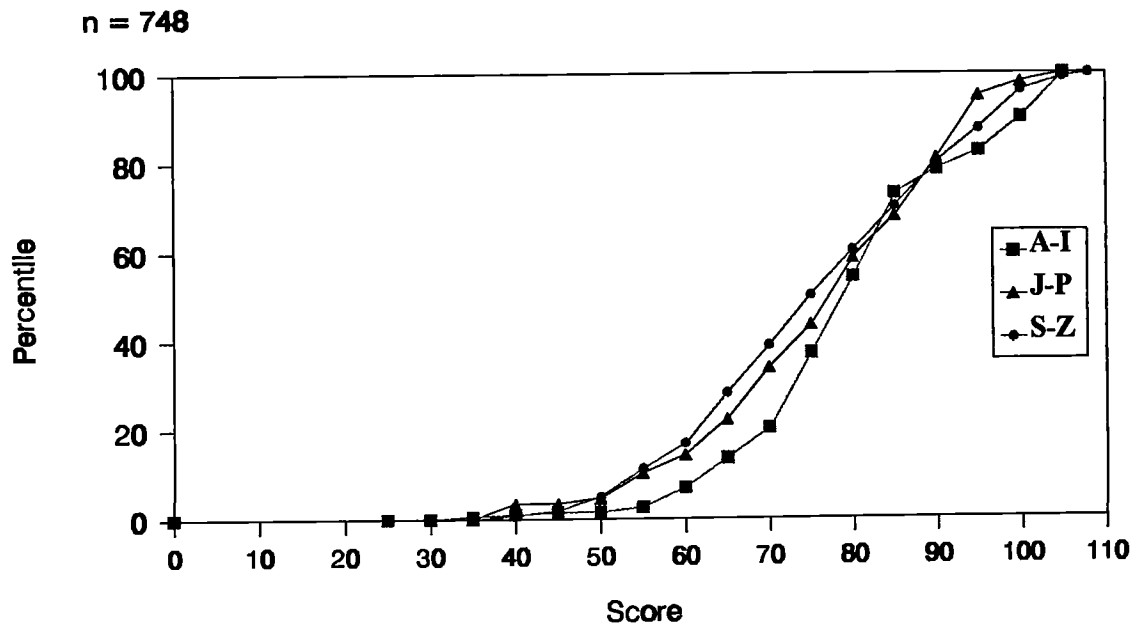


Fig 4.4C. Parental Attitude Scale Score Distribution, Group S to Z



Percentile curves of the scores for each group are seen in Fig 4.5.

Fig 4.5. Parental Attitude Scale Score Percentile Curves, All Groups



From the curves it can be seen that the percentile scores for Group S to Z, parents of the older handicapped siblings, are lower than the scores of the other groups at an equivalent percentile level. The differences are not marked, but analysis of variance confirms that at least the means of the scores of two groups are significantly different (ANOVA, $p = 0.03$)

Student's T-test shows that the differences between the means of the scores of:

Group A to I and J to P are not significantly different ($p = 0.068$)

Group A to I and S to Z are significantly different ($p = 0.011$)

Group J to P and S to Z are not significantly different ($p = 0.642$)

A Cronbach's α was calculated for the combined Groups A to Z and found to be 0.73 for the standardized variables, and 0.71 for the raw variables. This shows that the Parental Attitude Scale is a reliable instrument for the population under investigation.

Factor analyses were performed on the scale results in each group. An initial factor analysis of principal components was performed on each group scores and the total sample. Eigenvalues of the unrotated factor matrix are seen in Table 4.22.

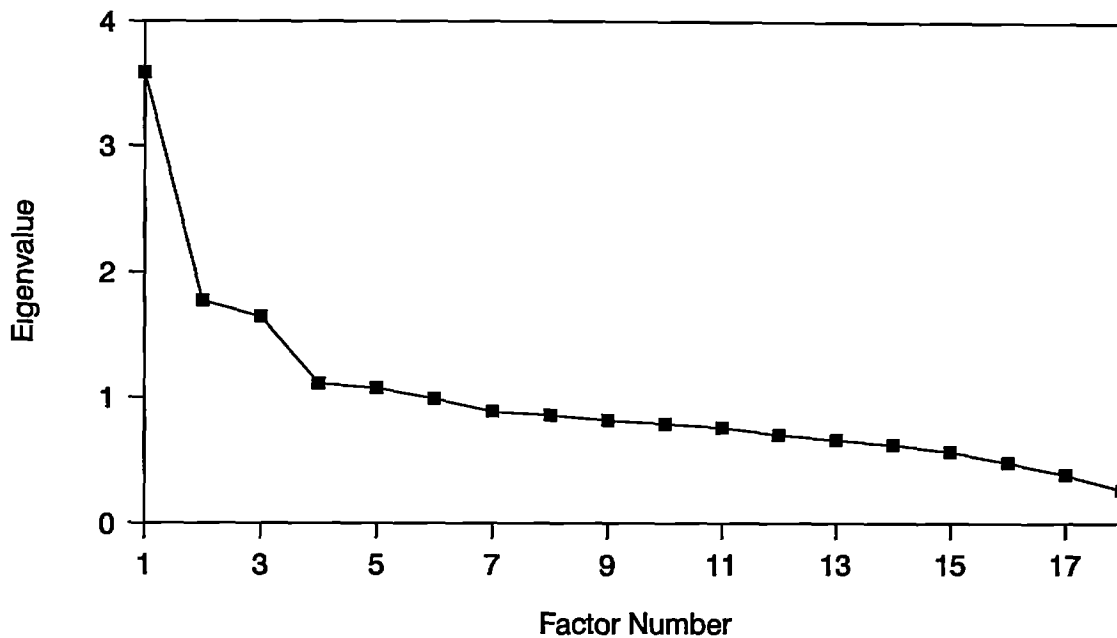
Table 4.22. Eigenvalues of Factor Matrix, Overall and Individual Groups for the Parental Attitude Scale

No.	Overall		Group	
	A to Z (n=748)	A to I (n=309)	J to P (n=174)	S to Z (n=265)
01	3.587547	3.068036	4.202694	4.247428
02	1.771516	1.898244	2.241876	2.012930
03	1.647123	1.460860	1.867421	1.687946
04	1.110858	1.308566	1.259744	1.178659
05	1.075576	1.189128	1.189776	1.080962
06	0.991439	1.028286	1.066011	0.938432
07	0.889081	0.940593	1.006649	0.897339
08	0.860002	0.918365	0.933959	0.850731
09	0.816850	0.892655	0.760351	0.787060
10	0.790137	0.816549	0.704268	0.754248
11	0.761202	0.746416	0.600187	0.690001
12	0.705264	0.681144	0.562218	0.624946
13	0.663322	0.640822	0.463283	0.487168
14	0.625070	0.606179	0.352276	0.480754
15	0.569495	0.567454	0.300652	0.407298
16	0.483362	0.530978	0.233686	0.364923
17	0.386171	0.392808	0.139454	0.342950
18	0.265887	0.312920	0.115495	0.166224

The application of Cattell's scree test (Cattell 1966) and the Kaiser criterion (Kaiser 1960) to the eigenvalues of the total sample, supported the retention of three interpretable factors

The factor scree plot for the overall groups A to Z is seen in Fig 4.6.

Fig 4.6. Parental Attitude Scale Factor Scree Plot, Overall Groups



Three factors were retained, and a three factor analysis performed on the data for each group.

This analysis, on the principal components to three factor groups, when combined, was accountable for:

- Group A to I 64.3% of the common variance
- Group J to P 83.1% of the common variance
- Group S to Z 79.5% of the common variance

Rotation of the factor matrix, as for the SADP data, was performed to the varimax criterion.

The factor loadings, and communalities, for the Parental Attitude Scale, group A to I are seen in Table 4.23.

Table 4.23. Varimax Rotational Method, Factor Loadings for Parental Attitude Scale, Group A to I

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	0.00576	0.00949	*0.57059	0.325691
02	-0.02257	0.09836	*0.72631	0.537704
03	0.15755	0.34033	*0.40578	0.305302
04	-0.07236	*0.37603	0.06970	0.151493
05	*0.25278	0.18477	0.24086	0.156053
06	0.28596	*-0.32191	0.19065	0.221748
07	0.00848	*0.67874	0.08216	0.467516
08	0.11924	-0.06062	*0.35814	0.146155
09	0.32635	*-0.42470	0.05765	0.290195
10	0.39380	*0.50679	0.08500	0.419144
11	*0.84208	0.05425	0.08223	0.718799
12	*0.65954	-0.06354	0.20825	0.482399
13	0.33121	*0.63001	0.11525	0.519895
14	0.18487	*0.50144	0.07173	0.290765
15	0.01990	*0.48009	-0.20546	0.273096
16	0.37709	0.36018	*-0.39244	0.425934
17	*0.38056	0.19140	0.05412	0.184386
18	*0.70437	-0.01405	-0.12054	0.510864

The statements marked with an * are statements that can be grouped together in relation to the respondents perception of the statement.

For convenience these are called Group 1, Group 2 and Group 3.

The grouping for group 1 for parents of 4 year olds handicapped siblings: statements 5, 11, 12, 17, and 18

For Group 2: statements 4, 6, 7, 9, 10, 13, 14 and 15.

For Group 3: statements 1, 2, 3, 8, and 16.

Looking more closely, these statements are:

Group 1

Statement 5. Handicapped children should be locked away or tied up at times when they are not at school/training centre.

Statement 11: Parents of handicapped children should be encouraged to help their child mix and integrate into normal society

Statement 12. Other children in a family will accept a handicapped sibling with love and understanding.

Statement 17: Parents should not be concerned about others, outside the family, knowing that their child is handicapped.

Statement 18. Handicapped people should be taken out and seen in public as often as possible.

This group is concerned with social aspects of handicap and is quite positive and hopeful.

Group 2

- Statement 4. Nothing can be done to make my handicapped child normal
- Statement 6. Handicapped children should be treated with kindness and understanding when they misbehave
- Statement 7: In my experience a handicapped child is a great burdon to the family
- Statement 9. Handicapped children in a family should have more attention than the other siblings.
- Statement 10. A handicapped child bring shame and is embarrassing for the family.
- Statement 13 The presence of a handicapped child is a loss of face for the family.
- Statement 14. It would be preferable for a handicapped child to die at birth.
- Statement 15: Handicapped offspring cause strain in a marital relationship.

This grouping is more effect related It is also negative and fatalistic regarding handicap with clear ideas of what the effect of handicap is.

Group 3

Statement 1: Parents should not consider themselves to blame for their child's handicap.

Statement 2: In my experience, immediate relatives will readily accept a handicapped child within the family

Statement 3: Your child's handicap is punishment for previous wrong doings of your ancestors.

Statement 8: Parents of a handicapped child should not allow this to influence any decision to have or not to have more children

Statement 16. It would be better if a handicapped child were taken from the family and placed permanently in a residential institution as soon after birth as possible.

This grouping is experience orientated. It is quite positive, except for statement 16. The factor loadings for this statement show that it could be appropriately placed in any group, but the maximum loading is for Group 3. These 3 factors account for 64.3% of the common variance.

The individual scoring for each statement for group A to I is seen in Table 4 24

Table 4.24. Parental Attitude Scale Individual Scores, Group A to I

	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%						
01	-3	138	44	7	-2	45	14	6	-1	25	8	1	1	17	5	5	2	35	11	3	3	49	15	9
02	-3	156	50	5	-2	79	25	6	-1	16	5	2	1	18	5	8	2	17	5	5	3	23	7	4
03	-3	227	73	5	-2	41	13	5	-1	6	1	9	1	12	3	9	2	11	3	6	3	12	3	9
04	-3	63	20	4	-2	72	23	3	-1	19	6	1	1	29	9	4	2	65	21	0	3	61	19	7
05	-3	234	75	7	-2	47	15	2	-1	6	1	9	1	6	1	9	2	2	0	6	3	14	4	5
06	-3	133	43	0	-2	82	26	5	-1	32	10	4	1	15	4	9	2	31	10	0	3	16	5	2
07	-3	23	7	4	-2	15	4	9	-1	6	1	9	1	38	12	3	2	99	32	0	3	128	41	4
08	-3	107	34	6	-2	48	15	5	-1	20	6	5	1	21	6	8	2	67	21	7	3	46	14	9
09	-3	230	74	4	-2	63	20	4	-1	10	3	2	1	1	0	3	2	4	1	3	3	1	0	3
10	-3	147	47	6	-2	62	20	1	-1	11	3	6	1	42	13	6	2	34	11	0	3	13	4	2
11	-3	235	76	1	-2	57	18	4	-1	13	4	2	1	0	0	0	2	2	0	6	3	2	0	6
12	-3	246	79	6	-2	54	17	5	-1	9	2	9	1	0	0	0	2	0	0	0	3	0	0	0
13	-3	151	48	9	-2	58	18	8	-1	10	3	2	1	37	12	0	2	38	12	3	3	15	4	9
14	-3	148	47	9	-2	38	12	3	-1	8	2	6	1	15	4	9	2	43	13	9	3	57	18	4
15	-3	32	10	4	-2	19	6	1	-1	21	6	8	1	49	15	9	2	83	26	9	3	105	34	0
16	-3	204	66	0	-2	51	16	5	-1	11	3	6	1	5	1	6	2	11	3	6	3	27	8	7
17	-3	156	50	5	-2	90	29	1	-1	17	5	5	1	11	3	6	2	20	6	5	3	15	4	9
18	-3	256	82	8	-2	38	12	3	-1	11	3	6	1	0	0	0	2	1	0	3	3	3	1	0

The majority of parents in this group disagreed with:

Statement 1: Parents should not consider themselves to blame for their child's handicap.

Statement 2: In my experience, immediate relatives will readily accept a handicapped child within the family

Statement 3: Your child's handicap is a punishment for wrong doings of your ancestors.

Statement 4: Nothing can be done to make my handicapped child more normal

- Statement 5. Handicapped children should be locked away, or tied up, at times when they are not at school/training centre.
- Statement 6. Handicapped children should be treated with kindness and understanding when they misbehave.
- Statement 8. Parents of a handicapped child should not allow this to influence any decision to have or not to have more children
- Statement 9. Handicapped children in a family have more attention than the other siblings.
- Statement 10: A handicapped child brings shame and is embarrassing for the family.
- Statement 11. Parents of handicapped children should be encouraged to help their child mix and integrate into normal society
- Statement 12. Other children in the family will accept a handicapped sibling with love and understanding.
- Statement 13. The presence of a handicapped child in the family is regarded as loss of face for the family.
- Statement 14. It would be preferable for handicapped children to die at birth.

Statement 16: It would be better if a handicapped child were taken from the family and placed permanently in a residential institution as soon after birth as possible

Statement 17: Parents should not be concerned about others outside the family knowing that their child is handicapped.

Statement 18. Handicapped people should be taken out and seen in public as often as possible

The majority of parents in this group agreed with only two statements

Statement 7: In my experience a handicapped child is a great burdon to the family.

Statement 15: Handicapped offspring cause strain in marital relationships.

The mean scores for individual statements are seen in Table 4 25

Table 4.25. Parental Attitude Scale, Mean Scores, Group A to I

	Mean Score	Std Dev	Std Error	t	p-value
01*	-0.955	2.393	0.136	-7.014	0.0001
02*	-1.686	1.933	0.110	-15.335	0.0001
03	-2.262	1.607	0.091	-24.739	0.0001
04	-0.032	2.357	0.134	-0.241	0.8095
05	-2.427	1.418	0.081	-30.081	0.0001
06*	-1.521	1.911	0.109	-13.989	0.0001
07	1.667	1.802	0.103	16.254	0.0001
08*	-0.466	2.425	0.138	-3.378	0.0008
09*	-2.634	0.833	0.047	-55.596	0.0001
10	-1.382	2.044	0.116	-11.884	0.0001
11*	-2.660	0.796	0.045	-58.721	0.0001
12*	-2.767	0.488	0.028	-99.756	0.0001
13	-1.362	2.095	0.119	-11.434	0.0001
14	-0.828	2.535	0.144	-5.744	0.0001
15	1.214	2.019	0.115	10.565	0.0001
16	-1.997	1.899	0.108	-18.481	0.0001
17*	-1.841	1.765	0.100	-18.342	0.0001
18*	-2.731	0.791	0.045	-60.700	0.0001

A statement marked with an * is a statement for which a positive reply indicates a favourable response. There were no positive replies to any * statement.

There were only two positive responses to non * statements and seven negative responses. A negative response to a non * statement indicates a positive attitude.

There were no real diversity of opinions for statement 4 with a slight leaning to a mean negative response. A slightly positive attitude.

Statement 4: Nothing can be done to make my handicapped child more normal

The factor loadings, and communalities, for the Parental Attitude Scale, group J to P are seen in Table 4 26.

The statement groupings for Group J to P are:

Group 1. Statements 3, 5, 11, 12, 16, 17 and 18

Group 2: Statements 1, 2, 4, 7, 8 and 14.

Group 3: Statements 6, 9, 10, 13 and 15.

Table 4.26. Varimax Rotational Method, Factor Loadings for Parental Attitude Scale, Group J to P

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	0.08763	*0.70386	-0.08778	0.510799
02	0.34205	*0.55650	0.18078	0.459377
03	*0.52890	0.20358	0.30818	0.459377
04	-0.05549	*0.71716	0.15935	0.542795
05	*0.34215	0.11861	-0.04709	0.133356
06	0.37748	0.17688	*-0.64863	0.594504
07	0.27317	*0.31396	-0.00011	0.173196
08	-0.01520	*0.76711	-0.04788	0.590982
09	0.27204	-0.06567	*-0.56777	0.400686
10	0.34756	-0.07259	*0.70490	0.622951
11	*0.77028	-0.08672	0.10689	0.612280
12	*0.78276	-0.01546	-0.21549	0.659390
13	0.32811	0.16810	*0.71134	0.641922
14	0.26213	*0.50821	0.38997	0.479071
15	0.01308	0.08070	*0.54789	0.306864
16	*0.50630	0.07468	0.15141	0.284840
17	*0.41219	0.28951	-0.07104	0.258763
18	*0.49751	0.43520	0.43261	0.624061

Group 1

Statement 3: Your child's handicap is a punishment for previous wrong doings of your ancestors.

Statement 5: Handicapped children should be locked away or tied up at times at times when they are not at school/training centre.

Statement 11: Parents of handicapped children should be encouraged to help their child mix and integrate into normal society.

Statement 12: Other children in a family will accept a handicapped sibling with love and understanding

Statement 16. It would be better if a handicapped child were taken from the family and placed permanently in a residential institution as soon after birth as possible

Statement 17. Parents should not be concerned about others, outside the family, knowing that their child is handicapped

Statement 18: Handicapped people should be taken out and seen in public as often as possible.

This grouping is concerned with the social aspect of handicap and acceptance.

Group 2

Statement 1: Parents should not consider themselves to blame for their child's handicap.

Statement 2: In my experience, immediate relatives will readily accept a handicapped child within the family.

Statement 4: Nothing can be done to make my handicapped child more normal.

Statement 7: In my experience a handicapped child is a great burden to the family.

Statement 8: Parents of a handicapped child should not allow this to influence any decision to have or not to have more children.

Statement 14: It would be preferable for handicapped children to die at birth.

A less defined grouping showing both pessimism and optimism towards handicap.

Group 3

Statement 6: Handicapped children should be treated with kindness and understanding when they misbehave.

Statement 9: Handicapped children in a family should have more attention than the other siblings.

Statement 10: A handicapped child brings shame and is embarrassing for the family.

Statement 13: The presence of a handicapped child is loss of face for the family.

Statement 15: Handicapped offspring cause strain in marital relationships

Results

This grouping has elements of compassion and shame and highlights the possible conflicts that a handicapped child, within the family unit, can have on the harmony of the home.

The individual scoring for each statement for group J to P is seen in Table 4 27, and the mean scores for each statement is seen in Table 4 28.

Table 4.27. Parental Attitude Scale Individual Scores, Group J to P

Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%							
01	-3	77	44	3	-2	32	18	4	-1	13	7	5	1	16	9	2	2	19	10	9	3	17	9	8
02	-3	88	50	6	-2	57	32	8	-1	12	6	9	1	1	0	6	2	10	5	7	3	6	3	4
03	-3	97	55	7	-2	32	18	4	-1	14	8	0	1	13	7	5	2	12	6	9	3	6	3	4
04	-3	40	23	0	-2	30	17	2	-1	21	12	1	1	23	13	2	2	25	14	4	3	35	20	1
05	-3	101	58	0	-2	34	19	5	-1	19	10	9	1	4	2	3	2	13	7	5	3	3	1	7
06	-3	81	46	6	-2	54	31	0	-1	13	7	5	1	11	6	3	2	12	6	9	3	3	1	7
07	-3	4	2	3	-2	13	7	5	-1	5	2	9	1	21	12	1	2	66	37	9	3	65	37	4
08	-3	82	47	1	-2	21	12	1	-1	11	6	3	1	12	6	9	2	28	16	1	3	20	11	5
09	-3	122	70	1	-2	36	20	7	-1	6	3	4	1	5	2	9	2	4	2	3	3	1	0	6
10	-3	57	32	8	-2	35	20	1	-1	24	13	8	1	16	9	2	2	28	16	1	3	14	8	0
11	-3	106	60	9	-2	58	33	3	-1	4	2	3	1	0	0	0	2	6	3	4	3	0	0	0
12	-3	109	62	6	-2	61	35	1	-1	1	0	6	1	0	0	0	2	3	1	7	3	0	0	0
13	-3	53	30	5	-2	51	29	3	-1	19	10	2	1	16	9	2	2	27	15	5	3	8	4	6
14	-3	86	49	4	-2	28	16	1	-1	9	5	2	1	10	5	7	2	16	9	2	3	25	14	4
15	-3	18	10	3	-2	8	4	6	-1	8	4	6	1	6	3	4	2	46	26	4	3	88	50	6
16	-3	78	44	8	-2	30	17	2	-1	15	8	6	1	15	8	6	2	14	8	0	3	22	12	6
17	-3	88	50	4	-2	40	23	0	-1	20	11.5	1		8	4	6	2	18	10	3	3	0	0	0
18	-3	108	62	1	-2	50	28	7	-1	2	1	1	1	7	4	0	2	3	1	7	3	4	2	3

Table 4.28. Parental Attitude Scale, Mean Scores, Group J to P

	Mean Score	Std Dev	Std Error	t	p-value
01*	-1.167	2.206	0.167	-6.975	0.0001
02*	-2.017	1.556	0.118	-17.099	0.0001
03	-1.805	1.805	0.137	-13.191	0.0001
04	-0.132	2.326	0.176	-0.750	0.4545
05	-2.017	1.593	0.121	-16.705	0.0001
06*	-1.839	1.623	0.123	-14.951	0.0001
07	1.753	1.574	0.119	14.694	0.0001
08*	-0.983	2.367	0.179	-5.478	0.0001
09*	-2.460	1.141	0.086	-28.437	0.0001
10	-0.868	2.150	0.163	-5.323	0.0001
11*	-2.488	0.994	0.075	-32.480	0.0001
12*	-2.552	0.779	0.059	-43.198	0.0001
13	-1.069	2.007	0.152	-7.024	0.0001
14	-1.184	2.344	0.178	-6.664	0.0001
15	1.632	2.041	0.155	10.550	0.0001
16	-1.149	2.250	0.171	-6.737	0.0001
17*	-1.839	1.637	0.124	-14.821	0.0001
18*	-2.305	1.327	0.101	-22.901	0.0001

A statement marked with an * is a statement for which a positive reply indicates a favourable response. The results for this group were the same as for group A to I in that for the majority of parents there were no positive responses to any * statement, and only two positive responses to non * statements. These statements were the same as for group A to I. Similarly there was no real opinion one way or the other to statement 4.

The factor loadings and communalities for the Parental Attitude Scale, Group S to Z is seen in Table 4.29.

Table 4.29. Varimax Rotational Method, Factor Loadings for Parental Attitude Scale, Group S to Z

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	0.15166	*0.40348	0.19556	0.224035
02	0.32716	*0.36470	0.24598	0.300546
03	*0.47521	0.38914	0.18600	0.411854
04	0.15891	*0.66797	0.23404	0.526205
05	*0.54508	-0.00259	0.15510	0.321178
06	-0.01391	0.11714	*0.55355	0.320334
07	0.17930	*0.50454	0.08660	0.294209
08	0.30051	*0.41713	0.01457	0.264514
09	0.03549	0.13565	*0.64907	0.440952
10	*0.85430	0.09628	-0.00456	0.739113
11	0.24772	-0.78590	*0.73376	0.605949
12	0.44536	0.13709	*0.48656	0.453874
13	*0.83541	0.09883	0.02594	0.708350
14	*0.55757	0.44468	0.07808	0.514715
15	-0.14210	*0.67774	-0.10354	0.490251
16	0.50502	*-0.57787	0.04757	0.591246
17	-0.09960	0.30142	*0.42489	0.281302
18	0.14286	-0.02067	*0.66245	0.459676

The groupings for statements in each factor for Group S to Z are marked with an *.

Group 1

- Statement 3: Your child's handicap is punishment for previous wrong doings of your ancestors.
- Statement 5: Handicapped children should be locked away or tied up at times when they are not at school/training centre
- Statement 10: A handicapped child brings shame and is embarrassing for the family
- Statement 13 The presence of a handicapped child is loss of face for the family.
- Statement 14. It would be preferable for handicapped children to die at birth.

This grouping is quite negative and reflects misconception about handicapped people and a superstitious element in opinion reflecting the older age group of the parents

Group 2

- Statement 1: Parents should not consider themselves to blame for their child's handicap.
- Statement 2. In my experience, immediate relatives will readily accept a handicapped child within the family.
- Statement 4: Nothing can be done to make my handicapped child more normal.

Statement 7: In my experience a handicapped child is a great burden to the family.

Statement 8: Parents of a handicapped child should not allow this to influence any decision to have or not to have more children.

Statement 15: Handicapped offspring cause strain in a marital relationship.

Statement 16: It would be better if a handicapped child were taken from the family and placed permanently in a residential institution as soon after birth as possible.

This grouping seems to be concerned with the effect of handicap in a family situation, with positive and negative aspects.

Group 3

Statement 6. Handicapped children should be treated with kindness and understanding when they misbehave.

Statement 9. Handicapped children in a family should have more attention than the other siblings.

Statement 11. Parents of handicapped children should be encouraged to help their child mix and integrate into normal society

Statement 12. Other children in a family will accept a handicapped sibling with love and understanding.

Statement 17: Parents should not be concerned about others, outside the family, knowing that their child is handicapped.

Statement 18: Handicapped people should be taken out and seen in public as often as possible.

This grouping of statements deal with compassion and acceptance of handicapped people in the family context.

The individual scoring for each statement for group S to Z , and the mean scores are seen in Tables 4.30 and 4 31.

It can be seen that the majority of parents in this group disagreed with the same statements as the parents of the other groups, with the exception of statement 16, where there was agreement rather than disagreement.

Statement 16: It would be better if a handicapped child were taken from the family and placed permanently in a residential institution as soon after birth as possible.

Table 4.30. Parental Attitude Scale Individual Scores, Group S to Z

Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	%								
01	-3	125	47	2	-2	48	18	1	-1	28	10	6	1	15	5	7	2	25	9	4	3	24	9	1
02	-3	114	43	0	-2	75	28	3	-1	29	10	9	1	17	6	4	2	17	6	4	3	13	4	9
03	-3	155	58	5	-2	39	14	7	-1	26	9,8	1	23	8	7	2	17	6	4	3	5	1	9	
04	-3	65	24	5	-2	41	15	5	-1	27	10	2	1	28	10	6	2	45	17	0	3	59	22	3
05	-3	134	50	6	-2	52	19	6	-1	16	6	0	1	21	7	9	2	23	8	7	3	19	7	2
06	-3	158	59	6	-2	71	26	8	-1	19	7	2	1	6	2	3	2	9	3	4	3	2	0	8
07	-3	19	7	2	-2	28	10	6	-1	16	6	0	1	40	15	1	2	61	23	0	3	101	38	1
08	-3	135	50	9	-2	33	12	5	-1	25	9	4	1	20	7	5	2	21	7	9	3	31	11	7
09	-3	187	70	6	-2	57	21	5	-1	15	5	7	1	3	1	1	2	3	1	1	3	0	0	0
10	-3	84	31	7	-2	62	23	4	-1	13	4	9	1	34	12	8	2	48	18	1	3	24	9	1
11	-3	158	59	6	-2	68	25	7	-1	28	10	6	1	4	1	5	2	5	1	9	3	2	0	8
12	-3	151	57	0	-2	74	27	9	-1	21	7	9	1	7	2	6	2	10	3	8	3	2	0	8
13	-3	85	32	1	-2	62	23	4	-1	18	6	8	1	43	16	2	2	38	14	3	3	19	7	2
14	-3	141	53	2	-2	28	10	6	-1	11	4	2	1	20	7	5	2	23	8	7	3	42	15	8
15	-3	45	17	0	-2	42	15	8	-1	19	7	2	1	30	11	3	2	41	15	5	3	88	33	2
16	-3	62	23	4	-2	35	13	2	-1	6	2	3	1	18	6	8	2	26	9	8	3	118	44	5
17	-3	173	65	3	-2	42	15	8	-1	23	8	7	1	6	2	3	2	10	3	8	3	11	4	2
18	-3	168	63	4	-2	59	22	3	-1	15	5	7	1	7	2	6	2	10	3	8	3	6	2	3

Table 4.31. Parental Attitude Scale, Mean Scores, Group S to Z

	Mean Score	St Dev	Std Error	t	p-value
01*	-1.366	2.116	0.130	-10.512	0.0001
02*	-1.626	1.801	0.111	-14.703	0.0001
03	-1.875	1.720	0.106	-17.752	0.0001
04	-0.034	2.395	0.147	-0.231	0.8176
05	-1.502	2.056	0.126	-11.890	0.0001
06*	-2.283	1.237	0.076	-30.051	0.0001
07	1.268	2.009	0.123	10.272	0.0001
08*	-1.287	2.233	0.137	-9.381	0.0001
09*	-2.570	0.850	0.052	-49.188	0.0001
10	-0.706	2.242	0.138	-5.124	0.0001
11*	-2.332	1.106	0.068	-34.333	0.0001
12*	-2.223	1.279	0.079	-28.289	0.0001
13	-0.834	2.143	0.132	-6.334	0.0001
14	-1.125	2.421	0.149	-7.563	0.0001
15	0.521	2.389	0.147	3.549	0.0005
16	0.611	2.603	0.160	3.823	0.0002
17*	-2.140	1.605	0.099	-21.705	0.0001
18*	-2.234	1.432	0.088	-25.392	0.0001

A statement marked with an * is a statement for which a positive reply indicates a favourable response. A non * statement is one where a negative reply indicates a favourable reply.

As with the other groups there is no real diversity of opinion for :
Statement 4: Nothing can make my handicapped child more normal.

4.5 Data Derived for the Children

The age groups of the children used in the study were nearest age

- 1 4 year olds
2. 14 year olds
- 3 25 to 35 year olds

The mean ages of the children in each group are seen in Table 4.32.

Table 4.32. Mean Ages of the Children in Each Age Group

Group	Mean Age(yr.)	St Dev.
4 Year olds	4 17	0.74
14 Year olds	14.15	0.42
25 - 35 Year olds	29 32	4.96

The total number of children, by sex, in each group is seen in Table 4.33.

Table 4.33. Number of Children in Each Age Group by Sex

Group	Number	Male	%	Female	%
4 Year olds	309	191	61 8	118	38 2
14 Year olds	174	103	59.2	71	40.8
25 to 35 Year olds	265	137	51.7	128	48 3

A total number of 14 handicapping conditions were identified for the whole study, and these are listed in Table 4 34.

Table 4.34. Total Number of Handicapping Conditions Identified

Condition	Number	Percent
Mental Retardation Only	390	52.1
Mental Retardation with Cerebral Palsy	187	25.0
Down's Syndrome	88	11.8
Autistic	39	5.2
Cerebral Palsy Only	27	3.6
Muscular Dystrophy	6	0.8
Spina Bifida	3	0.4
Friedrich's Ataxia	1	0.1
Cornelia DeLange	1	0.1
Prader Willy Syndrome	1	0.1
Goldenhar's Syndrome	1	0.1
Cri Du Chat	1	0.1
Developmental Delay	2	0.3
Cardio Vascular Accident	1	0.1
Total	748	100.0

Mental impairment grades identified for the study were. Mild, Moderate, Severe with a number of children of Normal intelligence. The number of children in these groups for the whole study is seen in Table 4.35

Table 4.35. Mental Impairment Grading for Total Number of Children

	Number	Percent
Mild	236	31.6
Moderate	355	47.5
Severe	123	16.4
Normal	34	4.5
Total	748	100.0

Mental impairment only, mental impairment with cerebral palsy, Down’s syndrome and autism were the four most common conditions seen.

Distribution of mental impairment grades in each age group are seen in Figs 4.7A, 4.7B and 4.7C.

Fig 4.7A. Distribution of Mental Impairment Grades, 4 Year Olds

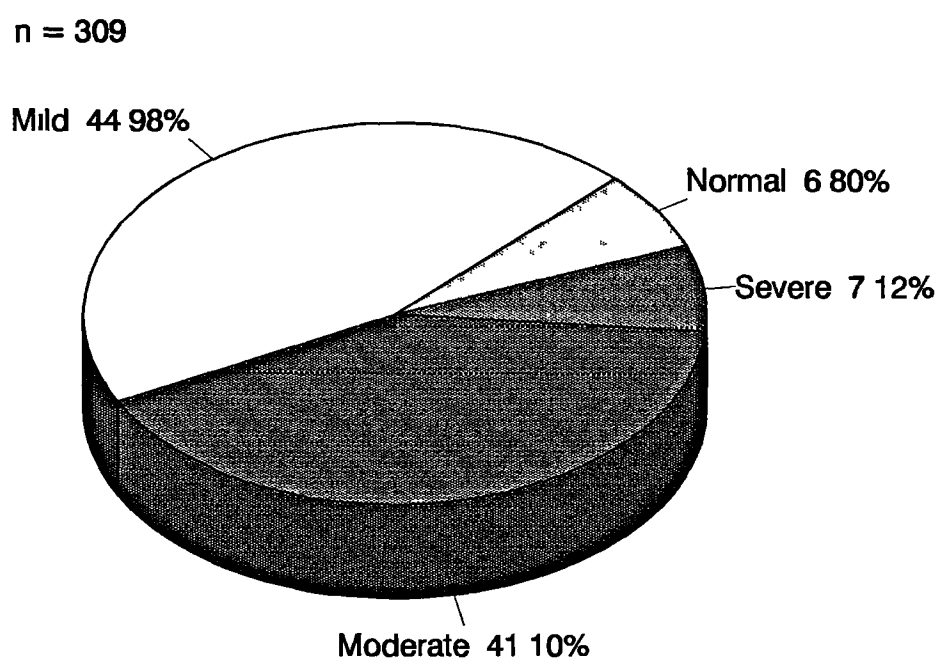


Fig 4.7B. Distribution of Mental Impairment Grades, 14 Year Olds

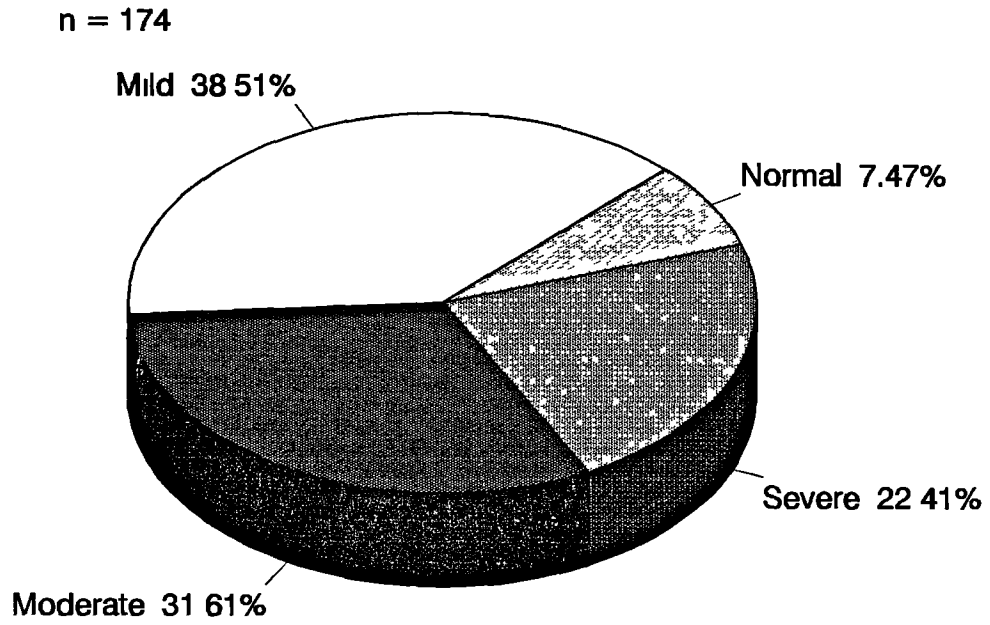
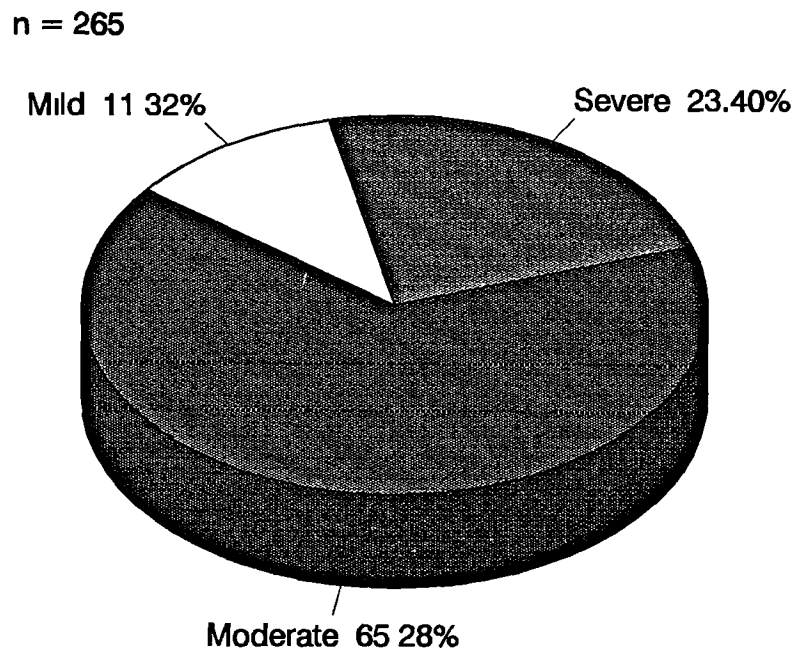


Fig 4.7C. Distribution of Mental Impairment Grades, 25 to 35 Year Olds



A mobility factor was introduced into the questionnaire dividing the children into those who could:

Walk unaided

Walk Aided

Were in a wheelchair

Unable to walk

The numbers in these categories in each age group are seen in Table 4.36.

Table 4.36. Mobility Data for Each Age Group

Group	Walk Unaided		Walk Aided		Unable		Wheelchair	
	No.	%	No.	%	No.	%	No.	%
4 Year olds	197	63.8	63	20.4	47	15.2	2	0.6
14 Year olds	120	69.0	19	10.9	11	6.3	24	13.8
25-35 Year olds	256	96.6	5	1.9	3	1.1	1	0.4

The total number of children in the study that could or were able to:

Walk unaided 573 76.6%

Walk aided 87 11.6%

Unable to walk 61 8.2%

In a wheelchair 27 3.6%

The total number of children that had a mobility problem was 23.4% (175)

The majority of children who took part in the study were able to walk unaided. 76.6% (573).

4.6 Dental Data of the Children

Each child in each group was examined for caries experience, using the dmft/DMFT index, dental treatment need and oral hygiene status. Questions were also asked of the parents regarding the dental attendance habits of their children.

4.6.1 Dental Attendance

Overall it was found that 49.7% (372) of the children had not visited a dentist at all, 31.7% (237) less than one year ago and 18.6% (139) more than one year ago

Overall 73.7% (551) did not visit a dentist on a regular basis, just on a casual basis, if at all

On a group basis, of the 4 year olds 84.8% (262) had not visited a dentist at all, 8.1% (25) less than a year ago and 7.1% (22) more than one year ago. Also 94.2% (291) did not visit a dentist regularly

For the 14 year olds, only 3.4% (6) had not visited a dentist at all, 62.1% (108) more than a year ago and 34.5% (60) within the last year. In this group 37.4% (65) did not attend on a regular basis

For the older 25 to 35 year olds group 39.2% (104) had never seen a dentist at all, 20.4% (54) within the last year and 40.4% (107) more than a year ago. In this group 73.6% (195) did not attend on a regular basis.

The parents of the children who did not attend regularly were also asked as to whether they thought dental advice should only be sought for their child if the child had toothache. A positive reply was obtained from 73.5% (405) overall. Also 93.0% (511) overall said that dental care was important for their child.

In groups, 57.6% (167) of parents of the 4 year olds who did not attend regularly, felt that dental advice should only be sought if their child had toothache, but 96.1% (280) felt that dental care was important for their child.

For the 14 year olds 92.3% (60) of the parents of non regular attenders felt that dental advice should only be sought if their child had toothache, but 82.2% (53) felt that dental care was important for their child

For the 25 to 35 year olds non regular attenders, 79.6% (156) of the parents felt that dental advice should only be sought if their child had toothache, but 96.2% (187) felt that dental care was important for their child

Those parents whose children were not regular attenders but felt that dental care was important for their child were asked why they had not sought dental advice for their child. Various responses on a yes/no basis were available

1. No dentist will treat because of the child's handicap.
2. Treatment is too expensive.
3. Transportation problems.
4. No one available to take the child to the dentist.
5. A wish not to be seen with the child in public.
6. Fear of treatment refusal by the dentist.

7. Embarrassed at being seen in the waiting room with the child
8. It is the school/institution's responsibility to provide access to dental services.
9. It is the government's responsibility to provide total health care.
10. A wish to be disassociated with the child.

Overall groups it was found that:

1. 35.0% (182) felt that because of the child's handicap no dentist would treat
2. 62.4% (325) felt that treatment would be too expensive.
3. 40.9% (213) would have transport problems.
4. 37.0% (192) said that there would be no one available to take the child to the dentist
5. 12.1% (62) did not wish people to see their handicapped child
6. 26.0% (135) felt that the dentist would refuse to treat the child
7. 26.0% (135) would be embarrassed sitting in the waiting room with their child.
8. 48.1% (250) felt it was the school or institutions responsibility to provide access to dental services
9. A large 84.9% (442) also felt that the government should provide total health care for handicapped children.
10. 21.9% (114) did not wish to be associated with their handicapped child

In the groups, the parents of the 4 year olds children whose child did not attend regularly, but felt that dental care was important answered as follows:

1. 27.9% (78) felt that because of the child's handicap, no dentist would treat.
2. 58.2% (163) felt that treatment would be too expensive.
3. 36.1% (101) would have transport problems.
4. 35.0% (98) said that there would be no one available to take the child to the dentist.
5. 8.3% (23) did not wish people to see their handicapped child.
6. 21.1% (59) felt that the dentist would refuse to treat the child.
7. 26.1% (73) would be embarrassed sitting in the waiting room with their child.
8. 40.4% (113) felt it was the school or institutions' responsibility to provide access to dental services.
9. 86.4% (242) felt that the government should provide total health care for handicapped children.
10. 4.3% (12) did not wish to be associated with their handicapped child.

The parents of the 14 year olds children whose child did not attend regularly, but felt dental care was important responded:

1. 45.3% (24) felt that because of the child's handicap no dentist would treat.
2. 58.5% (31) felt that treatment would be too expensive.
3. 52.8% (28) would have transport problems.
4. 39.6% (21) said there would be no one available to take the child to the dentist.
5. 15.1% (8) did not wish people to see their handicapped child.
6. 50.9% (27) felt that the dentist would refuse to treat the child.

7. 28.3% (15) would be embarrassed sitting in the waiting room with their child
8. 52.8% (28) felt it was the school or institutions' responsibility to provide access to dental services.
9. 71.7% (38) felt that the government should provide total health care for handicapped children.
10. 22.6% (12) did not wish to be associated with their handicapped child

The parents of the 25 to 35 year olds whose child did not attend regularly, but felt that dental care was important responded

1. 44.9% (84) felt that because of the child's handicap no dentist would treat.
2. 69.5% (130) felt that treatment would be too expensive.
3. 47.6% (89) would have transport problems
4. 40.1% (75) said that there would be no one available to take the child to the dentist
5. 17.6% (33) did not wish people to see their handicapped child.
6. 28.3% (53) felt that the dentist would refuse to treat the child
7. 25.1% (47) would be embarrassed sitting in the waiting room with their child.
8. 60.4% (113) felt it was the school or institutions' responsibility to provide access to dental services
9. 84.5% (158) also felt that the government should provide total health care for handicapped children.
10. 23.0% (43) did not wish to be associated with their handicapped child.

4.6.2 Dental Status and treatment Need

Dental status and treatment need were determined as per criteria defined in Appendix VII.

DMFT/dmft values for each age group is seen in Table 4.37A

Table 4.37A. Mean DMFT/dmft Values for Each Age Group

Age	Mean DMFT/dmft	Standard Deviation
4 Year olds	1.25	2.72
14 Year olds	2.27	2.29
25 - 35 Year olds	5.23	5.67

Mean DMFT/dmft components for each age group are seen in Table 4.37B

Table 4.37B. Mean DMFT/dmft Components for Each Age Group

Age	Mean D/d	SD	Mean M/m	SD	Mean F/f	SD
4 Year olds	1.02	2.5	0.18	0.8	0.04	0.4
14 Year olds	0.75	1.5	0.23	0.7	1.29	1.8
25 - 35 Year olds	1.33	2.3	3.02	5.0	0.88	2.0

These figures are similar to those obtained in the pilot survey to determine sample size, and are not significantly different, to the pilot survey, in any age group (t-test, $p > 0.05$).

The highest mean DMFT is in the 25 to 35 year olds group with the mean M being the highest component value.

The mean DMFT / dmft for the three age groups by sex is seen in Table 4.38

Table 4.38. Mean DMFT / dmft for the Three Age Groups, by Sex

	4 Year Olds	14 Year Olds	25 - 35 Year Olds
	Mean dmft	Mean DMFT	Mean DMFT
F	1.25 SD 2.39	2.24 SD 2.16	5.54 SD 5.95
M	1.24 SD 2.91	2.29 SD 2.39	4.95 SD 5.41

The comparison between DMFT / dmft components, by sex in the three groups is seen in Tables 4.39A, 4.39B and 4.39C.

There is no sexual dimorphism in mean DMFT/dmft in all groups, (t-test, p = 0.1121) and no sexual dimorphism in mean D/d, M/m and F/f (t-test, p = 0.2250, 0.4209 and 0.3334)

Table 4.39A. Comparison of Mean dmft Data by Sex, 4 Year Olds

	Mean d	SD	Mean m	SD	Mean f	SD
F	1.03	2.30	0.21	0.73	0.02	0.13
M	1.02	2.68	0.71	0.80	0.05	0.52

Table 4.39B. Comparison of Mean DMFT Data by Sex, 14 Year Olds

	Mean d	SD	Mean m	SD	Mean f	SD
F	0.71	1.49	0.17	0.65	1.35	1.65
M	0.77	1.54	0.27	0.74	1.25	1.82

Table 4.39C. Comparison of Mean DMFT Data by Sex, 25 to 35 Year Olds

	Mean d	SD	Mean m	SD	Mean f	SD
F	1.58	2.48	2.98	5.36	0.98	1.98
M	1.10	2.19	3.06	4.65	0.79	1.96

For the 4 year olds, the differences between mean dmft's, for females and males, were not significant (t-test, $p = 0.9012$). The differences between mean d (t-test, $p = 0.9704$), mean m (t-test, $p = 0.4680$) and mean f (t-test, $p = 0.3600$) were also not significant.

For the 14 year olds, the differences between mean DMFT's, for females and males, were not significant ($p = 0.8121$), and the differences between mean D ($p = 0.8460$), mean M ($p = 0.3525$) and mean F ($p = 0.8152$) were also not significant.

For the 25 to 35 year olds, the differences between mean DMFT's, for females and males, were not significant (t-test, $p = 0.3655$), and the differences between mean D ($p = 0.0913$) mean M ($p = 0.9348$) and mean F ($p = 0.4211$) were also not significant.

Dental treatment need, excluding periodontal problems, for the groups was determined by examination. For 4 year olds, the restorative treatment need is seen in Table 4.40A and 4.40B, below

**Table 4.40A. Restorative Dental Treatment Need, 4 Year Olds
One Surface restoration**

Teeth Requiring One Surf. Rest.	No. of children	Percent
0	243	78.6
1	17	5.5
2	16	5.2
3	9	2.9
4	12	3.9
5	4	1.3
6	5	1.6
8	2	0.6
10	1	0.3

**Table 4.40B. Restorative Dental Treatment Need, 4 Year Olds
Two Surface Restorations**

Teeth Requiring Two Surf. Rest	No. of children	Percent
0	291	94.2
1	8	2.6
2	5	1.6
3	1	0.3
4	3	1.0
0	1	0.3

Extraction need is seen in Table 4.40C.

Table 4.40C. Extraction Need, 4 Year Olds

Teeth Requiring Extraction	No. of Children	Percent
0	293	94.8
1	5	1.6
2	5	1.6
3	1	0.3
4	1	0.3
5	1	0.3
8	1	0.3
12	1	0.3
14	1	0.3
15	1	0.3

From these results, 25.9% (80), of the 4 year olds required some form of restorative work, and 31.1% (96), dental treatment. However, 68.9% (213), required neither extraction or restoration

The restorative treatment needs for the 14 year olds are seen in Tables 4.41A and 4.41B. The extraction need is seen in Table 4.41C.

**Table 4.41A. Restorative Dental Treatment Need, 14 Year Olds
One Surface Restoration**

Teeth Requiring One Surf. Rest.	No of Children	Percent
0	133	76.4
1	22	12.6
2	8	4.6
3	2	1.1
4	5	2.9
5	1	0.6
6	2	1.1
8	1	0.6

**Table 4.41B. Restorative Dental Treatment Need, 14 Year Olds
Two Surface Restorations**

Teeth Requiring		
Two Surf. Rest.	No. of Children	Percent
0	161	92.5
1	8	4.6
2	4	2.3
5	1	0.6

Table 4.41C. Extraction Need, 14 Year Olds

Teeth Requiring		
Extraction	No. of Children	Percent
0	161	92.5
1	10	5.7
3	1	0.6
4	1	0.6
5	1	0.6

In this group, 31.0% (54), required restorative work and 38.5% (67), required dental treatment. This leaves 61.5% (107), who required neither restorative work nor extraction. This percentage figure is slightly less than that for the 4 year olds.

The restorative treatment needs for the 25 to 35 year olds is seen in Tables 4.42A, 4.42B, and 4.42C. The extraction need is seen in Table 4.42D.

Table 4.42A. Restorative Dental Treatment Need, 25 to 35 Year Olds, One Surface Restoration

Teeth Requiring		
One Surf. Rest.	No. of Children	Percent
0	220	83.0
1	22	8.3
2	10	3.8
3	8	3.0
4	3	1.1
5	2	0.8

Table 4.42B. Restorative Dental Treatment Need, 25 to 35 Year Olds, Two Surface Restorations

Teeth Requiring		
Two Surf. Rest.	No. of Children	Percent
0	247	93.2
1	12	4.5
2	6	2.3

Table 4.42C. Restorative Dental Treatment Need, 25 to 35 Year Olds, Three Surface Restorations

Teeth Requiring Three Surf. Rest.	No. of Children	Percent
0	263	99.2
1	1	0.4
2	1	0.4

Table 4.42D. Extraction Need, 25 to 35 Year Olds

Teeth Requiring Extraction	No. of Children	Percent
0	187	70.6
1	33	12.5
2	16	6.0
3	6	2.3
4	3	1.1
5	5	1.9
6	5	1.9
7	2	0.8
8	4	1.5
9	1	0.4
10	2	0.8
13	4	0.4

In this age group, 25 to 35 year olds, 24.5% (65), required some form of restorative work, 29.4% (78), required one or more extraction. A total of 54.0% (143), required dental treatment of

some kind, and 45.7% (121) did not require any restorations or extraction.

The treatment need figures for all groups are seen in Table 4.43.

Table 4.43. Treatment Need of the Children for all Age Groups

Age Group	One or More Rest.		One or More Ext.	
	No.	%	No.	%
4 Year olds	80	25.9	16	5.2
14 Year olds	54	31.0	13	7.5
25 - 35 Year olds	65	24.5	78	29.4

The number requiring no restoration or extraction:

4 year olds	213	68.9%
14 year olds	107	61.5%
25 - 35 year olds	121	45.7%

The number of children who were caries free i.e. dmft/DMFT = 0 was.

4 year olds	213	68.9%
14 year olds	56	32.2%
25 - 35 year olds	48	18.1%

Oral hygiene status was determined by examination of the labial surface of the upper four anterior teeth, 13, 12, 11, 21, 23, and utilisation of a modified plaque index as detailed in Appendix VII.

For the 4 year olds, it was found that 85.1% had no plaque visible on these teeth, 13.6% had visible plaque and 1.3% abundant plaque.

For the 14 year olds, 52.3% had no visible plaque on these teeth, 30.5% had visible plaque and 17.2% abundant plaque.

For the 25 to 35 year olds, 36.2% had no visible plaque, 47.9% had visible plaque and 15.8% abundant plaque.

Calculus was measured on a simple present or not present basis, and for the 4 year olds no calculus was detected on any teeth

For the 14 year olds, 20.2% had calculus and for the 25 to 35 year olds 56.3% calculus was detected.

4.6.3 Correlation Analyses

Correlation analyses were performed between DMFT/dmft and mental impairment, DMFT/dmft and mobility, mental impairment, mobility and treatment need, education level of parents and treatment need and SADP scores and treatment need

For the 4 year olds, there was no correlation between mental impairment grades and dmft

Pearson Correlation Coefficient = -0.0785 (p = 0.1685).

For the 14 year olds, there was no correlation between mental impairment grades and DMFT

Pearson Correlation Coefficient = -0.0263 (p = 0.7307)

There was also no correlation between mental impairment grades and DMFT for the 25 to 35 year olds.

Pearson Correlation Coefficient = 0.0757 (p = 0.2193).

For the 4 year olds, there was no correlation between mobility grades and dmft.

Pearson Correlation Coefficient = 0.0184 (p = 0.7468).

For the 14 year olds, there was no correlation between mobility grades and DMFT.

Pearson Correlation Coefficient = -0.110 (p = 0.1486).

For the 25 to 35 year olds, there is, again, no correlation between mobility grades and DMFT.

Pearson Correlation Coefficient = -0.0300 (p = 0.6269).

Parental SADP scores and treatment need were correlated for each age group. For the 4 year olds, there was no correlation between parental SADP score and the need for one surface, two surface restorations and extraction need (Pearson Correlation Coefficients = -0.0842, -0.0698 and -0.1061).

There was no correlation between treatment need for one surface, two surface restorations, extraction need and parental SADP score (Pearson Correlation Coefficients = 0.0296, -0.1068, -0.0846) for the 14 year olds

There was also no correlation between parental SADP scores and treatment need for one surface, two surface, three surface restorations and extraction need for the 25 to 35 year olds (Pearson Correlation Coefficients = 0.1113, <0.0001, 0.0591, 0.0344).

Correlation analyses were performed on treatment need and mental impairment grades, treatment need and mobility. In each

age group, no correlation was found between treatment need mental impairment and mobility.

For the 4 year olds, there was no correlation between the need for one surface restorations and mental impairment (Pearson Correlation Coefficient = -0.0632) and mobility (Pearson Correlation Coefficient = 0.0369).

There was no correlation between the need for 2 surface restorations and mental impairment (Pearson Correlation coefficient = -0.0974) and mobility (Pearson Correlation Coefficient = -0.0224).

There was also no correlation between extraction need and mental impairment (Pearson Correlation Coefficient = 0.0017) and mobility (Pearson Correlation Coefficient = 0.0014)

Parental education and treatment need for each age group was correlated and it was found that for the 4 year olds there was no correlation between the need for one surface, two surface restorations, extraction need and parental education for either father or mother (Pearson Correlation Coefficients, Father = 0.1111, -0.0585, -0.0825. Mother = -0.0969, -0.0915, -0.0872).

For the 14 year olds, there was no correlation between one surface, two surface restorations, extraction need and father and mother education level (Pearson Correlation Coefficients, Father = -0.0366, 0.0329, -0.0017. Mother = -0.0794, 0.0465, -0.1119).

For the 25 to 35 year olds, there was no correlation between one surface, two surface, three surface restorations, extraction need

and parental education level for fathers and mothers (Pearson Correlation Coefficients, Father = 0.0736, 0.0807, -0.0535 Mother = 0.0538, 0.0368, -0.0366, -0.0180).

4.7 Data Derived from Dental Practitioners

Data was received from 250 general dental practitioners in Hong Kong. All practitioner who returned the questionnaires were in general dental practice.

There were 217 male (86.8%) and 33 (13.2%) female and 247 (98.8%) had only a basic qualification whilst 3 (1.2%) had some form of post graduate diploma or degree

Data on place of qualification is seen in Table 4.44

Table 4.44. Dental Practitioner Place of Qualification

Place	Number	Percent
Hong Kong	107	42.8
United Kingdom	29	11.6
Australia	20	8.0
U.S A.	12	4.8
Taiwan	27	10.8
Philippines	46	18.4
Canada	4	1.6
Burma	1	0.4
New Zealand	1	0.4
Singapore	2	0.8
China	1	0.4

All practitioners were ethnic Chinese originating from Hong Kong

The distribution of the number of practitioners by year of qualification is seen in Table 4.45. and the number of persons attending their practices in one year is seen in Table 4.46

Table 4.45. Number of Practitioners by Year of Qualification

Year Qualified	Number	Percent
1955 - 1960	2	0.8
1960 - 1965	6	2.4
1965 - 1970	12	4.8
1970 - 1975	16	6.4
1975 - 1980	40	16.0
1980 - 1985	57	22.8
1985 - 1990	111	44.4
1990 - 1995	6	2.4
Total	250	100.0

Table 4.46. Number of Handicapped Seen per Year by Practitioners

No. of Handicapped	No. of Practitioners	Percent
None	39	15.6
1 up to 5	149	59.6
5 up to 10	45	18.0
Over 10	17	6.8
Total	250	100.0

The majority of practitioners, 59.6%, see 1 up to 5 handicapped patients a year, but 15.5% see none at all.

The floor location of the various practices are seen in Table 4.47.

Table 4.47. Floor Location of Practices

Floor Location	Number	Percent
Ground Floor	99	39.6
First Floor	41	16.4
Second Floor	109	43.6
<Second Floor	1	0.4
Total	250	100.0

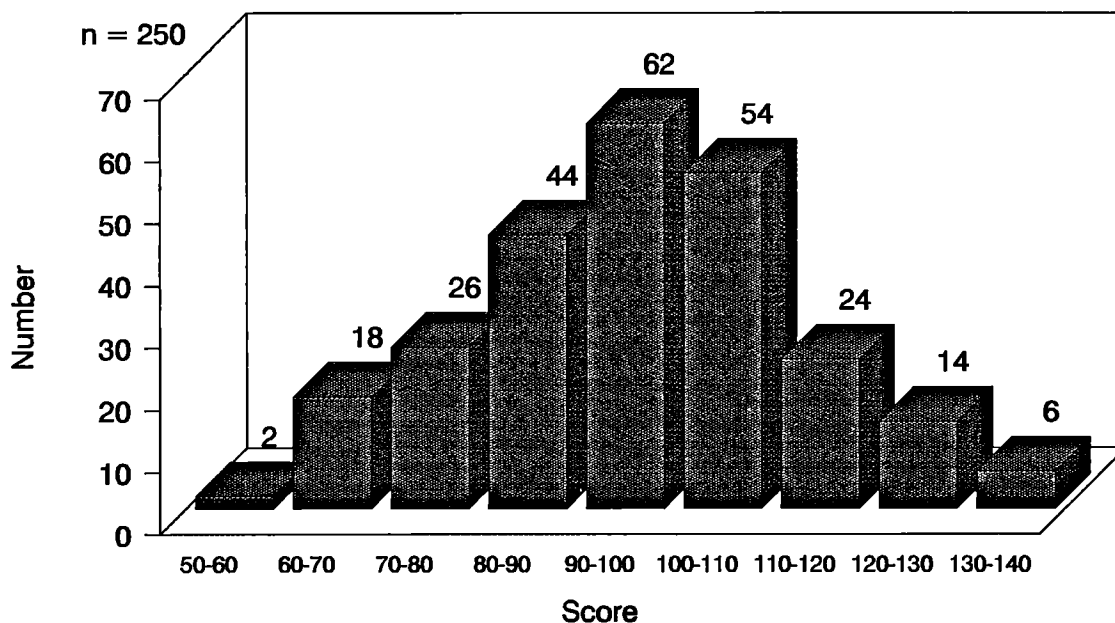
It is quite popular in Hong Kong to do voluntary work of some kind. Of the practitioners 12.4% (31) did voluntary work with the handicapped, 87.6% (219) did not.

Also 6.0% (15) had a handicapped relative, 94.0% (235) did not have a handicapped member in their family.

The practitioners were also asked to complete two scales. One was the Scale to Determine Attitudes Toward Disabled Persons, SADP, and the other a ten statement Dental Practitioner attitude scale. These scales are seen in Appendix V.

4.7.1 SADP Data Derived from Dental Practitioners

The scores were normally distributed as seen in Fig 4.8.

Fig 4.8. SADP Score Distribution, Dental Practitioners

The dental practitioners SADP scores are seen in Appendix VII. The mean score was 94.50 with a standard deviation of 16.83. Chronbach's coefficient α for the dental practitioner SADP scores was 0.813 for the standardized variables, and 0.809 for the raw variables. This shows the scale to be a reliable instrument for the population being investigated.

The percentile score curve of the scores is seen in Fig 4.9, and a comparison of percentile score curves for the SADP scores of each parental group and dental practitioners is seen in Fig 4.10.

It can be seen that the dental practitioners percentile scores are higher than the scores of the parental groups at an equivalent percentile level.

Fig 4.9. SADP Percentile Score Curve: Dental Practitioners

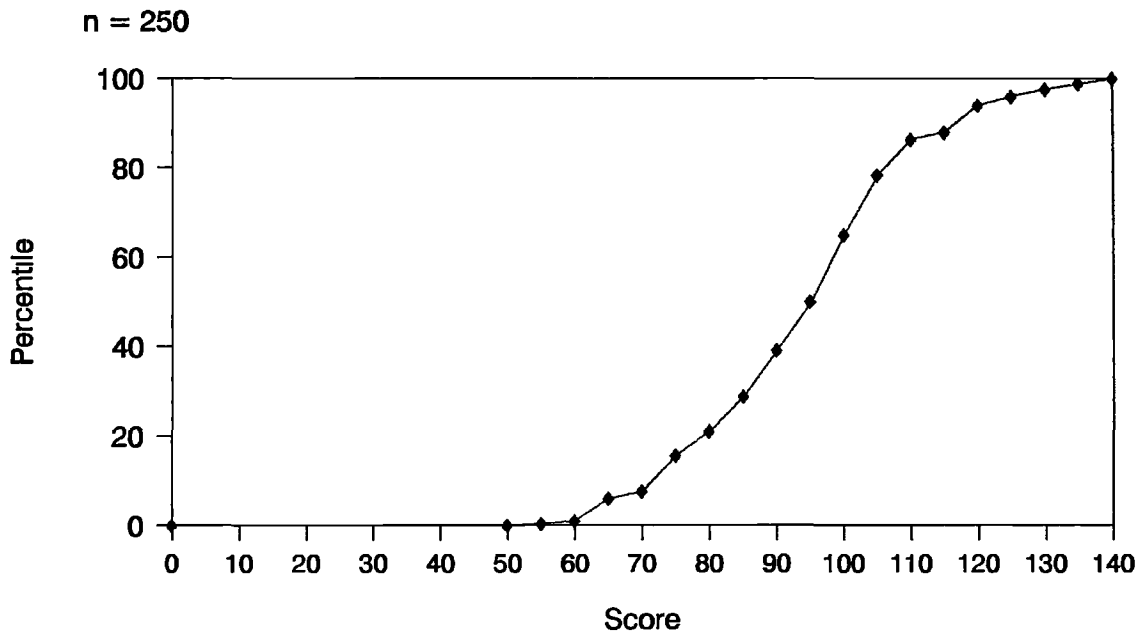
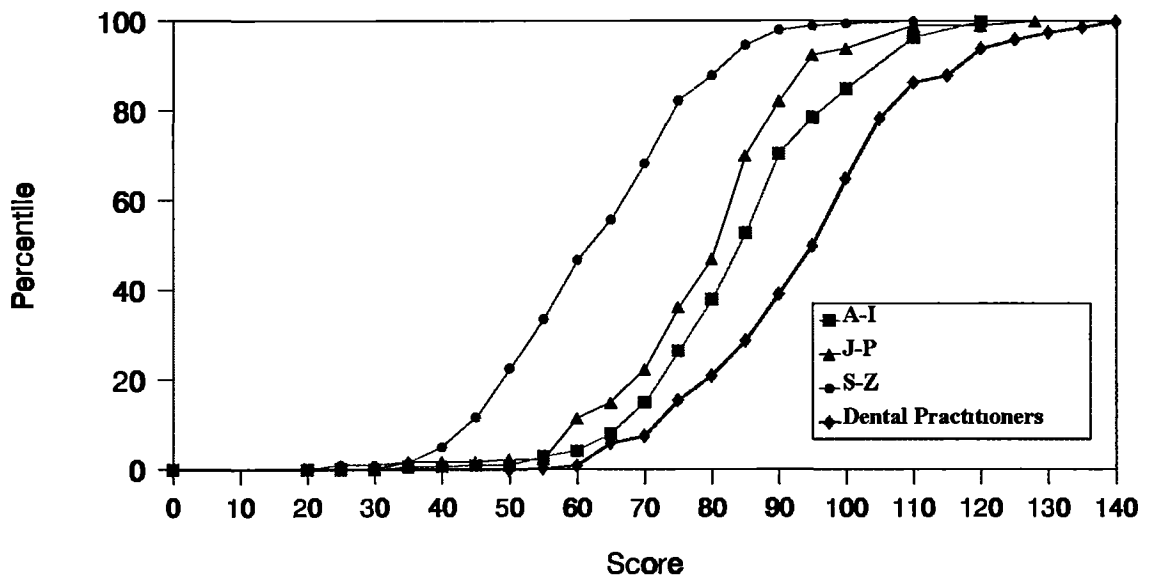


Fig 4.10. SADP Percentile Score Curves for Dental Practitioners and Parental Groups

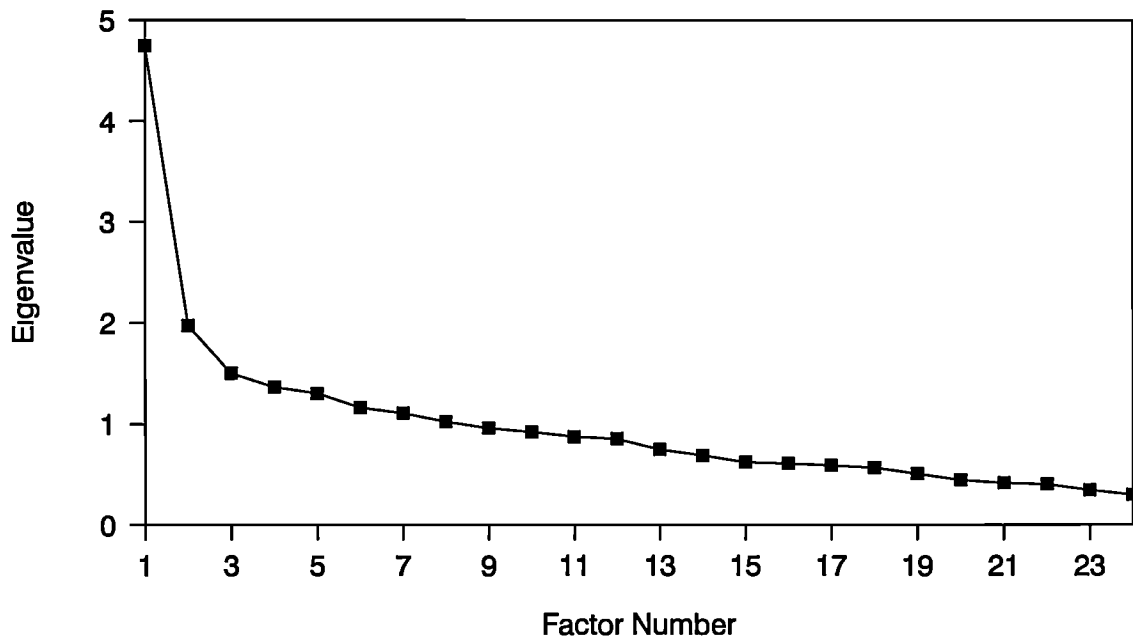


An initial factor analysis of principal components was performed on the scores and the Eigenvalues of the of the unrotated factor matrix are seen in Table 4.48.

Table 4.48. Eigenvalues of Unrotated Factor Matrix, Practitioner SADP Scores

Statement	1	2	3	4
Eigenvalue	4.745180	1.969942	1.499885	1.365208
Statement	5	6	7	8
Eigenvalue	1.301644	1.161904	1.107252	1.024160
Statement	9	10	11	12
Eigenvalue	0.958118	0.920578	0.873344	0.8520252
Statement	13	14	15	16
Eigenvalue	0.744765	0.686557	0.621159	0.608824
Statement	17	18	19	20
Eigenvalue	0.587400	0.565422	0.505468	0.442994
Statement	21	22	23	24
Eigenvalue	0.413527	0.402369	0.342526	0.299727

An examination of the unrotated factor matrix for the dental practitioners and the application of Cattell's scree test (Cattell 1966) and the Kaiser Criterion (Kaiser 1960) to the eigenvalues of the sample, again supported the retention of three interpretable factors. The factor scree plot is seen in Fig 4.11.

Fig 4.11. SADP Factor Scree Plot, Dental Practitioners

Three factors were retained and a three factor analysis on the data was performed. This analysis, on the principal components to three factor groups, when combined was accountable for 82.0% of the common variance. Rotation of the factor matrix was performed to the varimax criterion. Factor loadings and communalities are seen in Table 4.49

The statements, in Table 4.49, marked with an * are statements that can be grouped together in relation to the respondents perception of the statement.

Table 4.49. Varimax Rotational Method, Factor Loadings SADP, Dental Practitioners

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	0.05323	0 08896	*0 54328	0.305898
02	-0.02309	0 08434	*0 32179	0.111198
03	*0.62112	0 21689	0 05773	0.436164
04	*0.67030	0 20249	0.12597	0.506173
05	0 02303	0.19401	*0 51592	0.304342
06	0 04707	0.06405	*0.62427	0 396036
07	0.36545	-0.09090	*0.45672	0 350410
08	*0 53377	-0 02647	0.13247	0.303158
09	*0 49947	0 02639	0.02594	0.250843
10	*0 56234	0.14706	-0 12637	0 353821
11	0 02318	*0 65113	0 09329	0 433214
12	0 11809	*0 55512	0 10341	0 332798
13	0 25162	*0 43323	0 01701	0 251292
14	*0 53131	0 07044	0.13122	0 304469
15	0 06470	0.18581	*0 55824	0.350342
16	0 09883	*0.46575	0 28539	0 308133
17	0.42835	-0.01403	*0.43116	0.369584
18	*0 59666	-0 05191	0.11198	0 371236
19	*0 59140	0.26781	-0.00644	0.421517
20	0 16945	*0.66697	0.20989	0 517617
21	-0.00190	*0.54009	0.05783	0.295047
22	*0.53149	0 30939	-0.03135	0.379184
23	0.01339	*0.50753	0.01829	0.258103
24	0.21768	*0 48005	0.16307	0.304427

They are divided into Groups 1, 2, and 3.

The statement groupings for Group 1 are: statements 3, 4, 8, 9, 10, 14, 18, 19 and 22.

Group 2: statements 11, 12, 13, 16, 20, 21, 23 and 24.

Group 3: statements 1, 2, 5, 6, 7, 15 and 17.

Looking at these statement groupings more closely:

Group 1

Statement 3: A disabled individual is not capable of making moral decisions.

Statement 4: The disabled should be prevented from having children.

Statement 8: The disabled are in many ways like children

Statement 9 The disabled need only the proper environment and opportunity to develop and express criminal tendencies.

Statement 10. Disabled adults should be voluntarily committed to an institution following arrest.

Statement 14: Disabled people should live with others of similar disability.

Statement 18: Simple repetitive work is appropriate for the disabled.

Statement 19: The disabled show a deviant personality profile.

Statement 22: The disabled engage in bizarre and deviant sexual activities.

This grouping is quite negative showing prejudice and misconception regarding handicapped people.

Group 2

Statement 11: Most disabled people are willing to work.

Statement 12: Disabled individuals are able to adjust to life outside an institutional setting

Statement 13: The disabled should not be prohibited from obtaining a driver's license

Statement 16: The opportunity for gainful employment should be provided to disabled people.

Statement 20. Equal employment opportunities should be provided to disabled people.

Statement 21: Laws to prevent employers from discriminating against the disabled should be passed.

Statement 23. Disabled workers should receive at least the minimum wage established for their jobs.

Statement 24: Disabled individuals can be expected to fit into competitive society.

This grouping recognises social and moral issues relating to employment and integration into society. The tone is positive optimistic and hopeful.

Group 3

Statement 1: The disabled should not be provided with a free public education

Statement 2. Disabled people are not more accident prone than other people.

Statement 5: The disabled should be allowed to live where and how they chose.

Statement 6: Adequate housing for the disabled is neither too expensive nor too difficult to build.

Statement 7: Rehabilitation programmes for the disabled are too expensive to operate

Statement 15: Group homes for the disabled should not be prohibited in residential areas

Statement 17: Disabled children in regular classrooms have an adverse effect on other children.

This grouping is concerned with social normalisation and integration into society. It expresses both positive and negative aspects.

The factor weighting for statement 17 places it in group 3, but it has a nearly similar weighting for group 1, and could be placed in this group as well.

The individual scoring for each individual SADP statement is seen in Table 4.50.

Table 4.50. SADP Individual Scores, Dental Practitioners

Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	% Sc	No	%								
01	-3	137	54	2	-2	61	24	4	-1	24	9	6	1	12	4	8	2	11	4	4	3	5	2	0
02	-3	16	6	4	-2	42	16	8	-1	45	18	0	1	52	20	8	2	71	28	4	3	24	9	6
03	-3	63	25	2	-2	80	32	0	-1	43	17	2	1	32	12	8	2	27	10	8	3	5	2	0
04	-3	53	21	2	-2	51	20	4	-1	50	20	0	1	31	12	4	2	45	18	0	3	20	8	0
05	-3	83	33	2	-2	91	36	4	-1	46	18	4	1	16	6	4	2	11	4	4	3	3	1	2
06	-3	36	14	4	-2	72	28	8	-1	57	22	8	1	27	10	8	2	48	19	2	3	10	4	0
07	-3	19	7	6	-2	54	21	6	-1	61	24	4	1	53	21	2	2	52	20	8	3	11	4	4
08	-3	22	8	8	-2	35	14	0	-1	42	16	8	1	86	34	2	2	55	22	0	3	10	4	0
09	-3	43	17	2	-2	61	24	4	-1	57	22	8	1	58	23	2	2	28	11	2	3	3	1	2
10	-3	30	12	0	-2	42	16	8	-1	46	18	4	1	70	28	0	2	50	20	0	3	12	4	8
11	-3	57	22	8	-2	112	44	8	-1	56	22	4	1	14	5	6	2	9	3	6	3	2	0	8
12	-3	19	7	6	-2	113	45	2	-1	91	36	4	1	11	4	4	2	14	5	6	3	2	0	8
13	-3	50	20	0	-2	62	24	8	-1	69	27	6	1	28	11	2	2	28	11	2	3	13	5	2
14	-3	32	12	8	-2	77	30	8	-1	69	27	6	1	44	17	6	2	24	9	6	3	4	1	6
15	-3	55	22	0	-2	101	40	4	-1	51	20	4	1	21	8	4	2	16	6	4	3	6	2	4
16	-3	92	36	8	-2	119	47	6	-1	35	14	0	1	2	0	8	2	2	0	8	3	0	0	0
17	-3	46	18	4	-2	70	28	0	-1	59	23	6	1	43	17	2	2	22	8	8	3	10	4	0
18	-3	15	6	0	-2	31	12	4	-1	29	11	6	1	69	27	6	2	83	33	2	3	23	9	2
19	-3	34	13	6	-2	63	25	2	-1	61	24	4	1	57	22	8	2	29	11	6	3	6	2	4
20	-3	63	25.2	-2	-2	92	36.8	-1	-1	57	22.8	1	1	29	11	6	2	8	3	2	3	1	0	4
21	-3	63	25	2	-2	79	31	6	-1	62	24.8	1	1	29	11.6	2	2	11	4	4	3	6	2	4
22	-3	52	20	8	-2	76	30	4	-1	63	25	2	1	40	16	0	2	13	5	2	3	6	2	4
23	-3	80	32	0	-2	99	39	6	-1	54	21	6	1	9	3	6	2	6	2	4	3	2	0	8
24	-3	31	12	4	-2	90	36	0	-1	72	28	8	1	36	14	4	2	18	7	2	3	3	1	2

The maximum values for the statements is 3, and the minimum is -3. The range of scores is therefore from -3 to +3.

The mean scores for the individual SADP statements for dental practitioners is seen in Table 4.51.

Table 4.51. Mean SADP Scores, Dental Practitioners

	Mean Score	Std Dev	Std Error	t	p-value
01	-2.032	1.513	0.096	-21.240	0.0001
02*	0.356	1.877	0.119	2.999	0.0030
03	-1.164	1.766	0.112	-10.424	0.0001
04	-0.520	2.058	0.130	-3.995	0.0001
05*	-1.720	1.423	0.090	-19.108	0.0001
06*	-0.624	1.881	0.119	-5.246	0.0001
07	-0.144	1.796	0.114	-1.268	0.2060
08	0.192	1.755	0.111	1.730	0.0849
09	-0.740	1.733	0.110	-6.750	0.0001
10	-0.056	1.860	0.118	-0.476	0.6344
11*	-1.652	1.272	0.080	-20.539	0.0001
12*	-3.316	1.212	0.077	-17.162	0.0001
13*	-0.880	1.826	0.115	-7.619	0.0001
14	-0.860	1.623	0.103	-8.377	0.0001
15*	-1.388	1.562	0.099	-14.052	0.0001
16*	-2.172	0.852	0.052	-41.611	0.0001
17	-0.880	1.770	0.112	-7.859	0.0001
18	0.672	1.773	0.112	5.991	0.0001
19	-0.624	1.734	0.110	-5.690	0.0001
20*	-1.528	1.386	0.088	-17.432	0.0001
21*	-1.360	1.565	0.099	-13.743	0.0001
22	-1.148	1.618	0.102	-11.221	0.0001
23*	-1.860	1.196	0.076	-24.592	0.0001
24*	-1.056	1.509	0.095	-11.063	0.0001

Statements marked with an * are statements that agreement with indicate a favourable response, and non * statements are statements that disagreement with indicate a favourable response

There seems to be no real extremes of opinion for statements 7 and 10 and possibly statement 8 (p = 0.2060, 0.6344 and 0.0849).

Statement 7: Rehabilitation programmes for the disabled are too expensive to operate

Statement 10. Disabled adults should be voluntarily committed to an institution following arrest.

Statement 8: The disabled are in many ways like children.

The majority of Dental practitioners disagreed with :

Statement 1: The disabled should not be provided with a free public education

Statement 3: A disabled individual is not capable of making a moral decision.

Statement 4. The disabled should be prevented from having children

Statement 5. The disabled should be allowed to live where and how they choose.

Statement 6: Adequate housing for the disabled is neither too expensive nor too difficult to build.

- Statement 7: Rehabilitation programmes for the disabled are too expensive to operate.
- Statement 9: The disabled need only the proper environment and opportunity to develop and express criminal tendencies
- Statement 10 Disabled adults should be voluntarily committed to an institution following arrest.
- Statement 11: Most disabled people are willing to work.
- Statement 12. Disabled individuals are able to adjust to life outside an institutional setting
- Statement 13 The disabled should not be prohibited from obtaining a driver's license
- Statement 14: Disabled people should live with others of similar disability
- Statement 15: Group homes for the disabled should not be prohibited in residential areas
- Statement 16 The opportunity for gainful employment should be provided to disabled people.
- Statement 17: Disabled children in regular classrooms have an adverse effect on other children.

Statement 19: The disabled show a deviant personality profile.

Statement 20: Equal employment opportunities should be provided to disabled people

Statement 21: Laws to prevent employers from discriminating against the disabled should be passed.

Statement 22 The disabled engage in bizarre and deviant sexual activity.

Statement 23 Disabled workers should receive at least the minimum wage established for their jobs.

Statement 24 Disabled individuals can be expected to fit into competitive society.

The majority of dental practitioners agreed with

Statement 2. Disabled people are not more accident prone than other people

Statement 8: The disabled are in many ways like children.

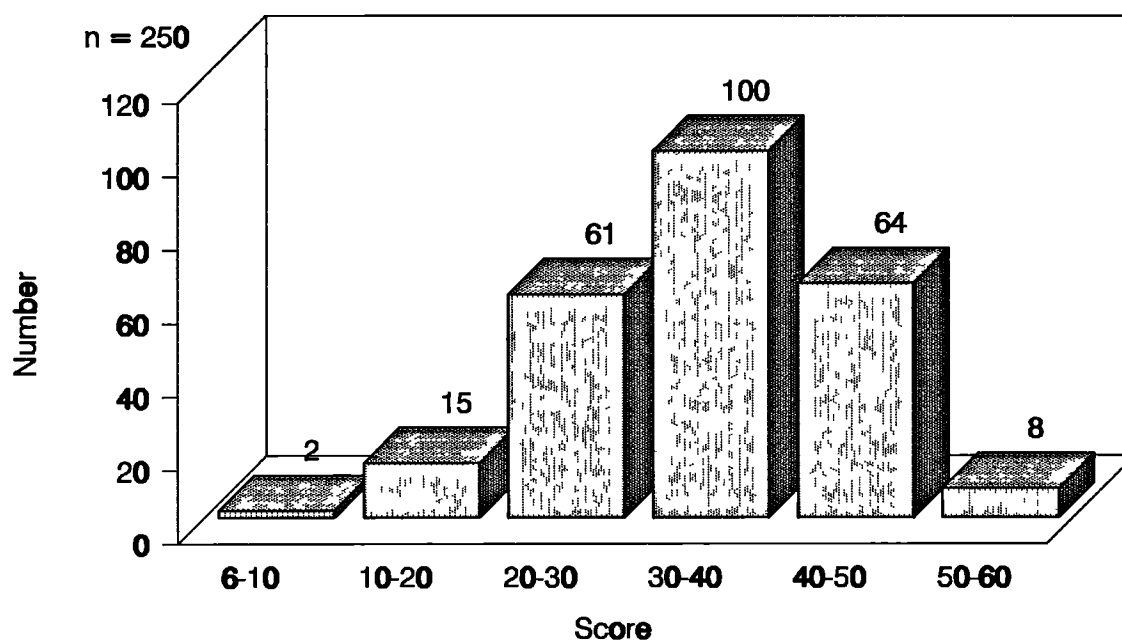
Statement 18: Simple repetitive work is appropriate for the disabled

4.7.2 Data Derived from Dental Practitioner Attitude Scale

This scale is a 10 statement Likert scale. The scores are seen in Appendix VII.

The scores were normally distributed as seen in Fig 4.12

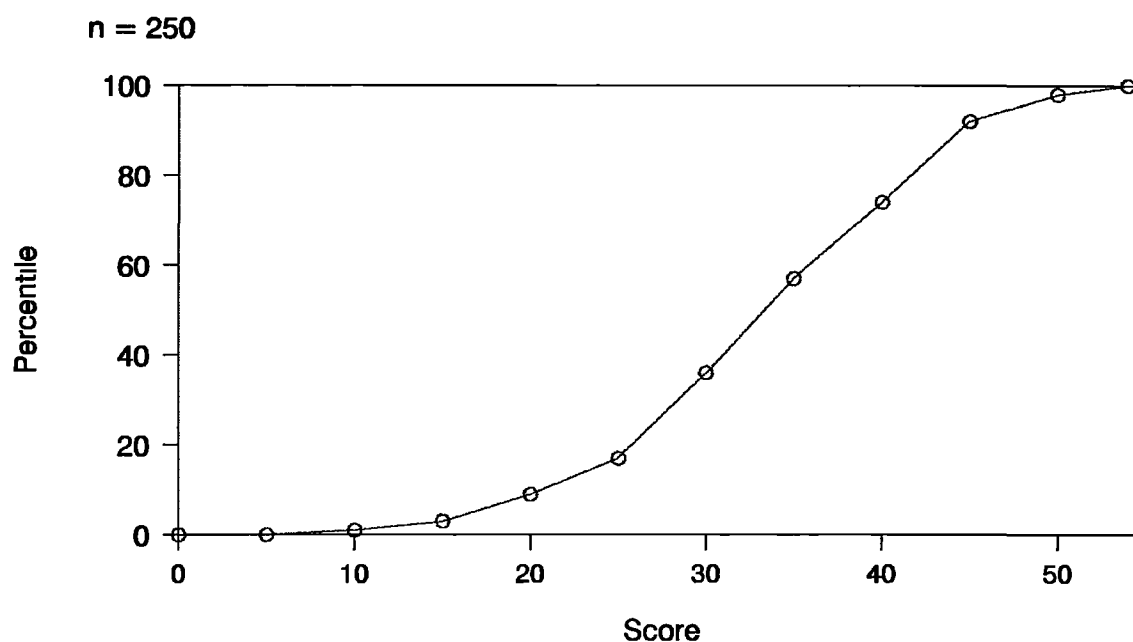
Fig 4.12. Dental Practitioner Attitude Scale, Score Distribution



The mean score was 33.72 with standard deviation of 9.17. The maximum score for this scale is 60. Chronbach's α for the scale was 0.67 for the raw variables and 0.66 for the standardized variables. Cronbach's α was sufficiently high enough to indicate a reliable scale for the population under investigation.

The percentile score curve for the Dental Practitioner Scale is seen in Fig 4.13.

Fig 4.13. Dental Practitioner Attitude Scale, Percentile Score Curve



An initial factor analysis of the principal components of the scale was performed, and the eigenvalues of the unrotated factor matrix are seen in Table 4.52.

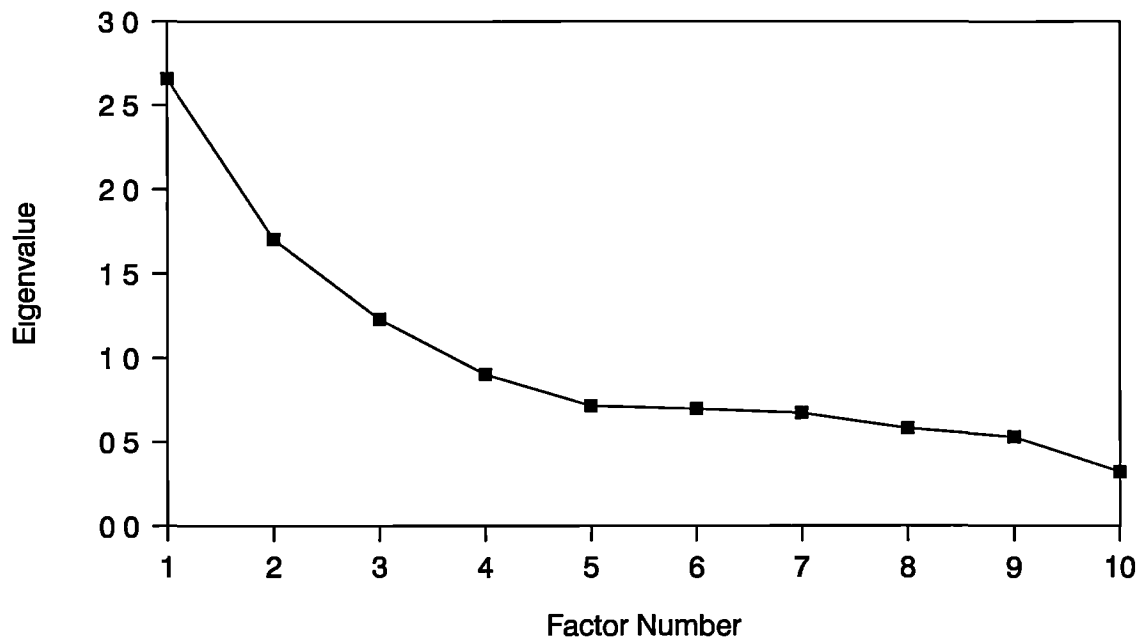
An examination of the unrotated factor matrix for the scale and the application of Cattell's scree test (Cattell 1966) and the Kaiser criterion (Kaiser 1960) to the eigenvalues supported the retention of three interpretable factors.

The factor scree plot for the scale is seen in Fig 4.14.

Table 4.52. Eigenvalues of Unrotated Factor Matrix, Dental Practitioners Attitude Scale

Statement	1	2	3	4	5
Eigenvalue	2.654401	1.703836	1.228149	0.900622	0.714186
Statement	6	7	8	9	10
Eigenvalue	0.696582	0.671208	0.580746	0.528535	0.321734

Fig 4.14. Dental Practitioners Attitude Scale, Factor Scree Plot



Three factors were retained, and a three factor analysis on the data was performed. This analysis, on the principal factors to three factor groups, when combined accounted for 60.0% of the common variance.

Rotation of the factor matrix to the varimax criterion was performed, and the factor loadings and communalities are seen in Table 4.53.

Table 4.53. Varimax Rotational Method, Factor Loadings, Dental Practitioners Attitude Scale

Statement No.	Factor 1	Factor 2	Factor 3	Communality
01	0.24258	*0.69108	0.04221	0.538218
02	*0.50950	-0.01111	-0.07658	0.265584
03	*0.60727	0.22340	0.18058	0.451291
04	*0.82599	-0.03206	0.15189	0.706354
05	*0.80802	-0.01720	0.25305	0.717222
06	-0.04131	0.22112	*0.72747	0.579814
07	0.13134	-0.01292	*0.72388	0.541420
08	-0.17707	*0.78172	0.03862	0.643939
09	0.04310	*0.73920	0.03548	0.549536
10	0.23106	-0.06370	*0.73182	0.593009

The statements marked with an * are statements that can be grouped together.

Group 1: Statements 2, 3, 4 and 5.

Group 2: Statements 1, 8 and 9

Group 3: Statements 6, 7 and 10.

Group 1

Statement 2: Expensive, specialised dental equipment is not needed to effectively treat the handicapped patient.

Statement 3: It is not financially viable to treat handicapped patients in practice

Statement 4: The responsibility of dental treatment for the handicapped should lie with the government.

Statement 5. All handicapped patients should be referred to a specialist centre for dental treatment.

This grouping seems to deal with responsibility for treatment and financial viability of treating the handicapped.

Group 2

Statement 1. I am very enthusiastic about treating the handicapped

Statement 8. It is the duty of dentists to volunteer their services to institutions for the handicapped.

Statement 9. It would benefit me and my practice to have further training in the treatment of the handicapped.

This group is mainly concerned with duty and responsibility toward this group of society

Group 3

Statement 6: The effect of the physical presence of a handicapped person in my waiting room would probably not deter other patients from coming to my practice.

Statement 7. The physical appearance of a handicapped person would make it difficult for me to treat him/her.

Statement 10: It would be difficult to keep ancillary staff if my practice accepted handicapped patients for treatment.

This grouping deals with the effect handicapped persons have on other people, in this case, in a dental practice context.

The individual scoring for each statement are seen in Table 4.54, and the mean scores for the Dental Practitioners Attitude scale are seen in Table 4 55.

Table 4.54. Dental Practitioners Attitude Scale, Individual Scores

	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%	Sc	No	%						
01	-3	21	8	4	-2	66	26	4	-1	92	36	8	1	34	13	6	2	27	10	8	3	10	4	0
02	-3	35	14	0	-2	104	41	6	-1	51	20	4	1	11	4	4	2	41	16	4	3	8	3	2
03	-3	20	8	0	-2	46	18	4	-1	33	13	2	1	60	24	0	2	64	25	6	3	27	10	8
04	-3	11	4	4	-2	49	19	6	-1	29	11	6	1	38	15	2	2	58	23	2	3	65	26	0
05	-3	20	8	0	-2	57	22	8	-1	32	12	8	1	34	13	2	2	69	27	6	3	38	15	2
06	-3	46	18	4	-2	104	41	6	-1	47	18	8	1	23	9	2	2	22	8	8	3	8	3	2
07	-3	47	18	8	-2	72	28	8	-1	38	15	2	1	50	20	0	2	29	11	6	3	14	5	6
08	-3	14	5	6	-2	40	16	0	-1	69	27	6	1	58	23	2	2	46	18	4	3	23	9	2
09	-3	33	13	2	-2	86	34	4	-1	77	30	8	1	20	8	0	2	25	10	0	3	9	3	6
10	-3	37	14	8	-2	69	27	6	-1	53	21	2	1	45	18	0	2	38	15	2	3	8	3	2

Table 4.55. Mean Dental Practitioners Attitude Scale Scores

	Mean Score	Std Dev	Std Error	t	p-value
01*	-0.676	1.631	0.103	-6.551	0.0001
02*	-0.998	1.776	0.112	-8.798	0.0001
03	0.336	1.930	0.122	2.752	0.0001
04	0.756	2.040	0.129	5.860	0.0001
05	0.320	2.069	0.131	2.445	0.0152
06*	-1.208	1.671	0.106	-11.431	0.0001
07	-0.692	1.924	0.122	-5.688	0.0001
08*	0.112	1.793	0.113	0.987	0.3244
09*	-1.004	1.637	0.104	-9.699	0.0001
10	-0.632	1.826	0.115	-5.473	0.0001

Statements marked with and * are statements that agreement with indicate a favourable response and non * statements are statements that disagreement with indicate a favourable response. There seems to be no real agreement or disagreement with statement number 8 ($p = 0.3244$).

Statement 8 It is the duty of dental practitioners to volunteer their services to institutions for the handicapped

The majority of dental practitioners disagreed with :

Statement 1: I am very enthusiastic about treating handicapped patients in my practice

Statement 2: Expensive, specialised dental equipment is not needed to effectively treat the handicapped patient

Statement 6: The effect of the physical presence of a handicapped person in my waiting room would probably not deter other patients from coming to my practice.

Statement 7: The physical appearance of a handicapped person would make it difficult for me to treat him or her.

Statement 9: It would be of benefit to me and my practice to have further training in the treatment of the handicapped.

Statement 10: It would be difficult to keep ancillary staff if my practice accepted handicapped patients.

The majority of practitioners agreed with.

Statement 3: It is not financially viable to treat handicapped patients in practice.

Statement 4: The responsibility of providing dental treatment for the handicapped should lie with the government.

Statement 5: All handicapped patients should be referred to a specialist centre for dental treatment.

Statement 8: It is the duty of dental practitioners to volunteer their services to institutions for the handicapped.

5.1 Discussion

The original concepts of the study were based on the considerable evidence in the literature that physical and mental handicap were stigmas, not only the individual's appearance but in the way this appearance affected other people's attitude to the individual. It was evident that this attitude was, in general, not positive.

Physical and mental handicap are not perceived by society as normal even though there may be a range of acceptance and tolerance, and because they are not perceived as normal are stigmatised (Goffman 1986)

The problem of acceptance, by a section of Chinese society in Hong Kong, of the "abnormal" mentally and physically handicapped is highlighted in this study with recent clips from the South China Morning post, a major local English daily newspaper.

Concern as to how the presence of disabled and handicapped persons will affect or disrupt the daily life of a society is not unique to Chinese society, and is world wide. Many western countries have recognised this and have invested resources in promoting the integration of disabled persons into society (Florian et al 1987). Legislation has also been introduced in a number of countries aimed at protecting the rights of these individuals.

The corner stone of Chinese social behaviour, even in "Westernised" Hong Kong, is Confucian. This philosophy subscribes to the principle that everyone is in his or her place

and consequently man exists in relation to others. The mentally and physically handicapped do not fit into this nice, neat pattern, and therefore do not fit easily into well ordered society.

China has also been for many years an agrarian society, tying vast numbers of people to the land. The handicapped person is a burdon to this society, not being able to do his or her share of the work necessary for survival. Even today some provinces in China have passed birth control and sterilisation legislation regarding handicapped people, making sterilisation mandatory.

With this historical background it is evident that rejection of persons who are handicapped can be due to the inherent nature in us all to reject that which is not normal, history and factors of economy and politics

From the dental aspect it was evident that, in the main, dental surgeons did not like treating mentally and physically handicapped persons. This results in difficulty for these people in obtaining dental treatment

The stigma of handicap in relation to dental care has not been looked at in any great depth, and certainly not in a Chinese community. It was therefore felt that this important aspect of dental care for mentally and physically handicapped in such a community should be investigated.

The main hypothesis for the study was that the stigma of mental and/or physical handicap is a major barrier to the delivery of dental care to people with mental and physical handicap in the Chinese population of Hong Kong. There were also two sub hypotheses:

1. The parental and family attitudes, amongst the Hong Kong Chinese, towards a mentally and physically handicapped individual within their unit affects the delivery of dental care to that individual.
2. Dental care provider attitudes, specifically general dental practitioners in Hong Kong, towards mentally and/or physically handicapped individuals affects decisions to treat this group

From the results the hypotheses of the study have been mainly fulfilled. Taking caries experience and treatment need as an indication as to whether the study groups were dental disadvantaged compared with similar groups of non handicapped, and looking at a recent Public Health Report (Department of Health, Hong Kong 1995) caries experience in 3 to 5 year olds is declining. A study by Wong (1968) showed that in this group the mean number of untreated decayed, missing and filled teeth was 5.3. A recent study (Chan 1995) revealed that the mean number of untreated decayed, missing and filled teeth for 3 to 5 year olds was 1.1 to 1.9. This value was very similar to that found in this study for the 4 year old group, and shows the decline in caries incidence in Hong Kong in this age group over the years. A study by O'Donnell (1988) on a group of cerebral palsied pre school children showed the mean number of untreated caries, missing and filled teeth to be 1.8. A similar figure to both previous studies. The introduction of water fluoridation into Hong Kong in the late 1960's is a major factor in this reduction in caries experience.

The Public Health Report No. 2 (Department of Health, Hong Kong 1995) was in no doubt that the caries experience of normal

5 year old normal children was low but widespread. Preschool children are, as yet, not catered for by Hong Kong Government's School Dental Care Service which aims at providing basic preventive and restorative care to primary school children only (Chan 1994). Because these children miss out on the Government service, a territory wide, 3 year preschool oral health programme was launched by the Hong Kong Government's Oral Health Education Unit of the Department of Health in 1993.

The Public health report also indicated that there was a concurrent increase in the percentage of caries free children in this age group from 16.0% to 54.0% from 1968 to the recent study in 1995. This study found 68.9% of mentally and physically handicapped children in the 4 year old group to be caries free, higher than the previous study and higher than recent studies in Norway, Denmark, Finland, United Kingdom and the Netherlands on normal children (Von der Fer 1994, Downer 1994, Truin et al 1994), but similar to studies in Ontario, Canada and Sweden (Burt 1994, Von der Fehr 1994).

Caries experience in the normal 14 year old age group has declined over the years in Hong Kong from a mean number of untreated decayed, missing and filled teeth of 4.6 in 1968 (Wong 1968) to 1.7 (Kwan 1992). This study found the mean number of untreated decayed, missing and filled teeth to be 2.27 in mentally and physically handicapped 14 year old children, higher than the figure in the 1992 study of normal children. The proportion of handicapped children in the study requiring no dental treatment was 61.5%, and the proportion with a DMFT of 0 was 32.2%. There are no comparable figures available for the normal population in Hong Kong except for a study in 1984 (Lind et al

1984) in which the percentage of caries free subjects in this group was 43.0%, higher than the figure for this study.

In the older age group of 25 to 35 year olds the study found that the mean untreated decayed, missing and filled teeth was 5.23. The only figures available for the normal population in Hong Kong was for an age range of 35 to 44 year olds. The figure had decreased from 11, in 1968, to 7, in 1991 (Wong 1968, Lo et al 1994), a higher figure than this study. Eighteen percent of the 25 to 35 year olds in this study were caries free compared with 10% of normal 35 to 44 year olds in 1991 (Lo et al 1994). Similar to other studies, no edentulous subject was found. The major component in the DMFT figure for the study age group was the Missing component, at a high 3.02. A high missing component has been found in other studies of adult handicapped populations (Hinchcliffe 1988, Francis 1991). This was a good indication that teeth were being extracted rather than attempts being made to save. Also, in this age group, 29.4% required one or more extraction showing that there was some degree of dental neglect in this population.

Common to other studies on handicapped populations (Piper et al 1986, Nunn 1987, Hoad Reddick 1987), poor oral hygiene was also evident in this study, worsening as the age groups became older. Studies in Hong Kong also confirm this deterioration with age (Department of Health, Hong Kong Government 1995, Lind et al 1986, Holmgren et al 1994).

Oral health care is an important part of the general well being of handicapped persons and an important factor is the maintenance of good oral hygiene (O'Donnell 1996). This can be difficult as the handicapped person has to rely on others and these others may

not know how to provide adequate oral hygiene maintenance or understand its significance. In an institution or school setting there may be inadequate staff available, the diet may be poor with a high content of soft food. Tooth brushing is not encouraged and consequently a build up of plaque occurs (O'Donnell 1988). This study shows that poor oral hygiene is evident in all age groups.

Most people in Hong Kong only visit the dentist when they have problems (Schwarz et al 1994). Utilisation of dental services among preschool children is low. A survey of non handicapped preschool children by Chan (1995) showed that 85% of those surveyed had never visited a dentist. This was similar to the findings in this study where 84.8% of mentally and physically handicapped 4 year old children had not visited a dentist at all.

In a study by Kwan (1992) which looked at a group of 13 to 15 year old non handicapped children in Hong Kong, only 27.0% of this group attended a dentist at all compared with 86.6% of 14 year old mentally and physically handicapped in this study. However, in this study 37.4% of dental attenders did not attend on a regular basis compared with 59.0% in the 1992 study. It was speculated in the 1992 study that six years in the School Dental Care Service had not instilled a concept of regular dental attendance. In this study, however, there was quite a high utilisation of dental services by the 14 year olds, but again the concept of regular dental attendance was, in the main, not common.

Schools and institutions for the mentally and physically handicapped, especially for those who are adolescents, are very aware of the importance of total health care for their handicapped

charges. They organise oral health projects in house, invite guest professional speakers and quite often arrange dental care for the school with a local dental practitioner. This awareness may account for the higher utilisation of dental services in the 14 year olds but regular dental attendance is still low

The study conducted by Schwarz et al (1994) on non handicapped adults between the ages of 35 to 44 years 11.0% attended a dentist on a regular basis. This is lower than this study where the percentage of mentally and physically handicapped 25 to 35 year olds who attended a dentist regularly was 26.4%.

Dental utilisation of the non handicapped population and the population of this study is low. The reasons for this are not clear (Schwarz et al 1994) and may be due to a number of factors. In the Chinese population in general inadequate dental knowledge and traditional Chinese health beliefs may be important factors. The mentally and physically handicapped are not able to make valid decisions on dental utilisation and it is their parents who have to make these decisions for them. A study in 1987 (Lind et al) showed that both the level of knowledge and attitude of non handicapped adults towards dental health was poor. The more recent study by Schwarz et al (1994) showed that there had been some improvement in knowledge, mainly in the causes of dental caries.

In this study those parents whose children were not regular attenders at the dentist, but felt that dental care was important for their child, were asked why they did not take their child to the dentist. In all age groups a majority felt that treatment would be too expensive. This was in contrast with the study by Schwatz et

al (1994) where they found that the cost of dental care was not a major barrier to dental care. In the present study over 62.0% of the parents of non regular dental attenders said that a major factor was cost. The reasons given in the 1994 study was that the affordability of dental treatment was closely allied to the rapid economic growth of Hong Kong. The Real Wage Index and the Real Salary Index, which measures the change in purchasing power of the amount of money earned by wage and salary earners after taking inflation into account, compiled by the Census and statistics Department of the Hong Kong Government, showed that in the last decade there had been a significant increase in the income of the general community (Hong Kong Government 1994). However, in a 1995 information pamphlet (Hong Kong Government 1995), the Hong Kong Government conceded that "for certain sectors in the community, cost could be a barrier to dental services," and goes on to say that "the economically deprived, and some of the elderly, might not be able to afford dental care even if they are aware of the need. In the present study it was found that the majority of parents of the 4 year old children had a monthly income in the HK\$ 6,000 to HK\$ 7,999 range. The majority of the parents of the 14 year olds were in the income range of HK\$8,000 to HK\$ 9,999 per month. The parents of the 25 to 35 year olds were in the monthly household income range of HK\$ 0 to HK\$ 5,999. Clearly these groups are in the lower income bracket. Even with monthly income of HK\$ 9,999, in Hong Kong, this is not regarded as a large income. Hence cost will be a major barrier to dental care.

Of the other questions asked, a very high proportion of the parents of non attenders overall, 85%, felt that the government should provide total health care, including dental, for

handicapped children. This, of course, does not happen at the moment and is clearly an area that government should address in the future. Hong Kong is a low tax area, and any change in government policy to health care would mean an increase in taxation, which may not be a popular move for the majority population

A large proportion also felt that it was the school or institution's responsibility to provide access to dental care. The study sample of 4, 14 and 25 to 35 year olds falls outside the Hong Kong Governments School Dental Care Scheme and the onus of finding dental care falls on the parents of these individuals. From the results the parents obviously feel that this burden should be taken over by the schools and institutions. At the present time the subvented organisations that run the schools and institutions for mentally and physically handicapped individuals have no definite policy on this matter on the grounds that to administer such a scheme would be time consuming and costly. The decision to provide access to dental care is left to the individual school or institution. Consequently, some do but the majority do not. However, ultimately the decision is the parent's.

A high percentage felt that transportation would be a problem, 41% overall. This was slightly higher for the parents of 14 and 25 to 35 year olds, 53% and 48%, than the parents of the 4 year olds, 36%. Transportation as a barrier to dental care for handicapped persons has been cited in a number of studies (Smith et al 1980, Pool 1981, Melville et al 1981, Diu et al 1989). Hong Kong has one of the most modern, efficient and cheap transportation systems in the world, and it is designed to take vast numbers of able bodied persons quickly from place to place, not for the disabled or handicapped, and no provision is made for

this group. Therefore, other less traumatic forms of transport have to be resorted to, such as taxis, which are costly, making transportation a problem for these low income families

In this group of parents, overall, 35% felt that although they thought dental treatment important, no dentist would treat their child because of his or her handicap. A lower percentage, 28.0%, of the parents of the 4 year olds felt this than the parents of the 14 year olds, 45.3% and the parents of the 25 to 35 year olds, 45.0%. The higher figure for the two older parental groups probably reflected their experience, over the years, in trying to obtain dental treatment for their children. An experience still to come for the younger group. However 28.0% for the younger group still indicated some pessimism at being able to find a dentist willing to treat their children

The more sensitive area for reasons of non attendance was wishing not to be associated with their handicapped children, and fear of embarrassment in being with their children in a waiting room. A small percentage of parents expressed these sentiments overall, 22.0% and 26.0% respectively. With the parents of the 4 year olds a very low 4.3% did not wish to be associated with their child and a low 8.3% said that they did not wish people to see their handicapped child, but 26.0% said that they would be embarrassed sitting in the dentists waiting room with their child. The younger parents do not mind being with their child or being seen, but seemingly a professional situation intimidates them with their child, which may be a reflection on generally low educational level of the parents

The parental feelings in the older groups were more negative. Still, a low 15.0% of the parents of 14 year old non attenders did

not wish people to see their handicapped child. A higher 22.6 % did not wish to be associated with their child, and 28.3% would be embarrassed sitting in the dentist's waiting room with their child.

A low 17.6% of parents of the 25 to 35 non attenders did not wish people to see their handicapped child, and 25.0% would be embarrassed sitting in a dentist's waiting room. A similar percentage to the parents of 14 year olds, 23.0% did not wish to be associated with their handicapped child.

The percentage of parents expressing these feelings is still in the minority, the majority of parents having no problems in this direction.

The majority of parents interviewed for the study were mothers. This is not surprising as the Chinese family is matriarchal with the male going out to work and the female staying at home to run the home, cook or shop. In Hong Kong it is not unusual for the family males to have more than one job, keeping them occupied until the early hours of the morning, seven days a week.

The Chinese family is not unitarian in structure, and it is common for all members of the family to live together in close proximity. Grand parents, aunts and uncles can all live together with their children and their children in what are very cramped conditions. Where the family require the mother to work, for economic reasons, then the grandmother takes over the role of the mother, looking after the children during the day. Hence, a number of grandmothers were interviewed.

The next major part of this study was to determine attitudes of parents towards their handicapped children. Two Likert type scales were used to quantify these attitudes. The basis of all attitude measurement is that there are underlying dimensions along which individual attitudes can be ranged, and by using an attitude scaling procedure a person can be assigned a numerical score to indicate his or her position on the dimension of interest. In this way an attitude can be quantified. Likert scales are relatively easy to construct, are user friendly and have been shown to be reliable (Moser et al 1983).

One of the main scales used in the study was the Scale to Determine Attitudes Toward Disabled Persons, and was used both by the parents and dental practitioners so that comparison between the two could be made. This was a Likert scale and also an ordinal scale. An ordinal scale ranks individuals along the continuum of the characteristic being measured. The important thing with ordinal scales is the position of the individual, in relation to others of the group, on the scale. The SADP was chosen for the study because it was apt and highly suitable to test the study's hypotheses. Also a great deal of work had been done on the scale by its originator to show that it was a reliable and valid scale (Antonak 1981, Antonak 1982). In Likert scaling the respondent is not just asked to decide just whether he or she agrees or disagrees with an item, but rather to chose between several response categories indicating various strengths of agreement. Usually there are five response categories, but often in Likert scaling up to seven can be employed. The SADP employs six, with an absence of a "don't know" category

The scores of the SADP go from -3 to +3, and quite obviously there can be a situation where a minus score is achieved if the

scores were just totalled. The method used in the study to effectively remove this possibility, and make the results more meaningful, was used by the originator of the scale (Antonak 1981). The method, at first glance, may seem complicated, but is in fact relatively easy to implement once the principle has been understood (O'Donnell 1993). The score range of the SADP is 0 to 144, with a score below 72 indicating a progressively poor attitude to disabled persons.

Reliability of the scale has been tested for a Chinese population (Chan et al 1984, Chan et al 1988), but was re assessed for this study. Results confirmed that the SADP was a reliable instrument for the Chinese population in question.

The SADP was derived from the Attitude Toward Disabled Persons scale, ADTP, (Yuker et al 1960) and is a self administered questionnaire. As with most questionnaires the possibility of cheating or faking the responses is always there. i.e. a respondent may fake the response to a statement so that the score will show a good attitude. To counteract this in some way there are equal numbers of positive and negative statements i.e. a positive response to a negative statement would indicate an unfavourable attitude, and a negative response a favourable attitude, and vice versa. Also the positive and negative statements are in no particular order Both these factors make the respondents have to think carefully when responding to a statement.

There have been some studies on the possibility of faking the responses, but only on the original ATDP scale. The results of these studies have been mixed, some saying it is relatively easy to fake the ADP responses (Novick 1982, Vargo et al 1984) others

indicating support of a non faking position (Speakman et al 1979, 1980, 1982). Yuker (1986) in a review article conceded that the possibility of faking is there, but goes on to suggest that an instrument such as the ATDP should not be used under conditions that are likely to elicit socially desirable responses.

The SADP was derived from the ATDP and is therefore a similar scale, even though no work on the possibility of faking responses to the SADP the same statement will apply to the SADP as to the ATDP which is that it should not be used under conditions that are likely to elicit socially desirable responses. With lack of evidence to the contrary, it was assumed that the people who willingly completed all the scales in the study were genuine in their motives and would respond honestly to the statements

The parental scores on the SADP showed no sexual dimorphism in attitude toward disabled persons which was consistent with other studies from Asia to Japan (Jaques et al 1973, Yuker et al 1986). However Yuker et al (1986) pointed out that some gender differences have been found. In Belgium, England and what was Yugoslavia, women have more positive attitudes than men whilst the reverse has been found in Denmark, Finland India, Israel, Italy, Spain and Sri Lanka. In the United states no difference was found, and no consistent theoretical explanation has been tendered to explain these differences across cultures (Yuker et al 1986).

Several studies have shown that women have a more positive attitude toward disabled persons than men. Gender differences have been shown in studies by Yuker et al (1960), Costin et al (1962), Freed (1964) and Chester (1965). A study by Conne (1968) found that female teachers questioned had more positive

beliefs about disabled persons than their male counterparts. A study by Aloia et al (1980) also found that female physical education teachers were more positive toward disabled persons than males. However non significant differences between attitudes of men and women toward the disabled (Sigler et al 1976, Skrtic et al 1978, Stephens et al 1980, Ringlaben et al 1981, Chan et al 1988, O'Donnell 1993). It would seem that reports of gender differences in attitude toward disabled persons is mixed. When they do occur they may be attributed to the influence of other variables such as information or contact (Yuker 1976).

Parental data derived in the study from the SADP was found to be normally distributed. This is seen in other studies which have used the scale (Antonak 1982, Chan et al 1984, O'Donnell 1993). This was quite fortunate in that statistical testing based on the properties of normal distribution could be used rather than non parametric tests.

The mean scores of the scale for each parental group showed that there was a decrease in favourable attitude the older the respondent was. The mean score of the younger parents indicated a reasonably favourable attitude. The mean score of the 14 year olds indicated a less favourable attitude and the mean score of the older parents quite an unfavourable attitude, being less than the 72 score. That is, the older parents had a less favourable attitude toward disabled persons than the younger parents. This was reconfirmed by the percentile curves drawn for each parental group showing a large separation of the curves.

In a study by Feldman (1976) the attitudes of Arab and Jewish community leaders towards the disabled were looked at. It was found that the attitudes of the Arab leaders were less favourable than those of their Jewish counterparts. However in Feldman's sample the Arab leaders were older and less educated than the Jewish leaders and had less contact with disabled persons. The Jewish leaders were not only younger than the Arabs but were women and less religious. The question posed by Feldman's study was whether the more favourable attitude was a function of age, gender, level of education, level of religious belief or an interaction amongst these variables. In this study no gender difference was seen. There was certainly an age difference with the older parents having a less favourable attitude and also the level of education of the older parents was quite low.

Studies of teachers with regard to teacher age as a critical variable in attitude toward disabled persons have shown mixed results. Sigler et al (1976) and Conine (1968) found no relationship between the age of teachers and attitude toward disabled persons. A study by Harasymiw et al (1975) reported that younger teachers were more willing to interact with persons with disabilities than older teachers. Plas et al (1982) found that whilst age was not predictive of willingness to teach adolescents with special needs, the respondents perception of their ages as a facilitating or hindering factor in teaching these children was related to willingness to teach.

Age shows a strong positive relationship with rejection of persons with a mental disorder. Studies Cohen et al (1962), Lawton (1964, 1965), Clark et al (1966) and Murray (1969) indicated that social restrictiveness shows a trend toward increasing with age. Perry (1974), also reported that unfavourable attitudes, such as

social restrictiveness and authoritarianism, increased with age and years of experience, while favourable attitudes, such as benevolence and mental health ideology, decreased.

The gradation of attitude in this study seems to be related to age, education and length of experience and contact with disabled persons. The parents of the younger children are less experienced in the problems of having a handicapped child, and as the child gets older various frustrations and disappointments occur. There may be increased family strains and tensions, and it will be getting more difficult to cope with the older child. The older parent has virtually an adult to cope with which will be a lot more difficult than a younger child

Education , which is a factor related to socioeconomic status, has been found to affect attitude formation (Geskie et al 1988) In an early study (Middleton 1953) less educated hospital personnel were found to have a less favourable attitude toward mentally impaired patients than their more well educated colleagues. Further studies (Freeman et al 1960, Clark et al 1966) endorsed this finding, but went further in saying that less educated individuals tend to endorse a set of beliefs indicative that handicapped individuals are irrational and potentially dangerous to society.

The educational level of the parents in the study was seen to decrease from the younger to the older parents. Even so the general educational level was low with a large number of older parents having no education at all. The older parents would have originally come from China where girls did not get the same educational opportunities as boys. Over 44.0% of mothers in the

older parental group had no education at all compared with 3.9% in the younger parental group.

Low education levels are reflected in household income figures. Over 60.0% of households, overall, had a monthly income below HK\$8,000 per month. This is low for Hong Kong where everyday expenditure is high with the largest proportion of income going on rent

As far as employment was concerned, the majority of fathers were employed in production work and service industries. The majority of mothers in the study came into the unclassified group as they were either housewives or retired

Looking at the three groups, the smallest number of professional people were in the older parental group with only 3.8% and 1.5% of mothers. The majority of older parents were unclassified mainly due to being retired

The proportion of fathers in the other two parental groups were 11.7% and 13.8% respectively with only 3.2% and 4.0% of mothers in the professional classification, reflecting the importance of the male in Chinese culture. However the majority of fathers in these two younger parental groups were in the production, labourer classification, whilst the majority of mothers were housewives.

Digressing from the attitude toward disabled persons and the level of education, some early studies looked at the results of contact with disabled persons at different levels of their education. Studies by Gosse et al (1979) and Weinberg (1976) found that at tertiary education level, contact with disabled persons had a positive effect on attitude. At secondary school

level contact sometimes led to a positive effect (Gosse et al 1979) but sometimes to a negative effect (Centers et al 1963, Gottlieb 1974). The conclusion was that at pre college stage other variables may be relatively more important, but did not say what they were.

Studies comparing Chinese college students and American college students attitudes toward disabled persons have shown that the Chinese students scored significantly lower on the SADP than the American students (Antonak 1982, Chan et al 1984, 1988), and it was deduced that Chinese subjects are less positive toward persons with mental and physical disabilities.

Studies on Israeli Jews of Eastern origin i.e. those mainly from Arab and Muslim countries, show that they appear to have a more negative attitude towards persons with disabilities than Jews of a Western origin (Shurka 1988). Also Israeli Arabs seem to have a less positive attitude towards persons with disabilities than Israeli Jews (Shurka 1988). The explanation given for this negative, from studies by Jordan et al (1968), Tseng (1977) and Florian (1977), was that members of a traditionalised and less modern culture show more negative attitudes than members of more modernised Western based cultures.

Family members of disabled persons might be predicted to have positive attitudes towards handicapped individuals. Since attitudes are influenced by the characteristics and behaviour of the disabled and non disabled family members this may not necessarily be the case (Yuker H E 1988). Chataway et al (1981), Rosenbaum et al (1986) Armstrong et al (1987) and found attitudes of parents of disabled individuals to be positive whilst

earlier studies by Rocher (1959) and Chin-Shong (1968) found them to be negative

In Hong Kong there is a mixture of the older Chinese culture and the more modern Western influenced culture. The attitude of the younger parent in the study may be influenced by a modern education and Western style living and values, whilst the older parent would still be influenced primarily by traditional Chinese culture, education and background, with very little Western influence or education.

An important aspect in the analysis of Likert scale data is the use of factor analysis. The general idea behind factor analysis is that the score on any scale item can be thought of as consisting of a number of components which represents the contributions of underlying factors of the item. An individual's factor scores are weighted according to the relative importance of the various factors in the item and combined together with an error component to form that individual's item score. In practice the item scores are observed and the factor scores unobserved. Factor analysis has to work backwards to estimate factor scores from a knowledge of item scores

Initial factor analysis of the SADP confirmed the retention of three interpretable factors. This is consistent with the original findings by the scale originator (Antonak 1982). The three statement groupings were consistent to a point for the three parental groups. There were, however, some inconsistencies in the placement of some statements in the factor groups. Because of this it was decided to utilise the total score for analysis rather than the three sub scale groupings as comparison between parental groups, using the sub scales, would not be possible.

There is a variation in the statements in the three factor groups for each parental group, but a common theme can be detected in the responses of the parents of the 4 year olds, the parents of the 14 year olds and the older parents. These factor group themes are for group 1: pessimism and hopelessness, for group 2 there is concern for human rights and there is behavioral misconception. For group 3 there is optimism, but tinged with pessimism in the older parents.

The parental responses to the scale items on the SADP were, on the whole, very negative with only a few statements eliciting a positive response. There was common agreement overall that the disabled should not be prohibited from having a drivers license, and only the younger parents disagreed that the disabled should live with others of similar disability. The parents of the 14 year olds agreed that disabled people were not more accident prone than others. All other statements were mostly answered to various degrees of negative which was reflected in the scale scores and percentile curves.

Certain statements were responded to so that there was no real diversity of opinion. For the younger parents these were statements regarding accident proneness and given the circumstances, the disabled would develop criminal tendencies. The parents of the 14 year olds had no diversity of opinion for statements involving accident proneness, as for the younger parents, and the provision of a drivers licence. For the parents of the older children there was no diversity of opinion for the statement regarding where the disabled should live and work.

The other scale employed in the study, for completion by the parents, was the Parental Attitude Scale. This scale was a Likert

type scale with statements derived from a pool relevant to parental experiences of having a handicapped child. The scale was derived for this study, and in that sense a new scale. The scale was found to be a reliable instrument for the population under study from both the small reliability sample and the main study.

Both this scale and the SADP were firstly devised in an English form. The majority of respondents were, of course, Cantonese, with generally very poor understanding of both written and spoken English. The scales were translated into Cantonese and then written in Chinese script. In order to maintain accuracy in translation the statements were first translated into Cantonese and then back translated into English. In this way the accuracy of the translation can be judged. A satisfactory translation was achieved in this way.

The scale scores were again normally distributed for all three parental groups. This meant that parametric statistical tests could be used for analysis of results.

The mean scale scores for each parental group were very close together and this "closeness" of scoring is reflected in the percentile score curves for each parental group. The mean scores for each group were in the 70's, which was high as the range of the scale was 0 to 108. Any score above 54 shows a favourable parental attitude toward their handicapped child as measured by the scale.

The percentile score curves show a gradation of score from the younger parental group to the older parental group showing that the scale scores are influenced by age, education and

socioeconomic variables as with the SADP. However the comparison of the scores of the younger parental group and the parents of the 14 year olds, the parents of the 14 year olds and the parents of the 25 to 35 year olds were marginally insignificant ($p = 0.0684$ and $p = 0.0642$ respectively). The difference between the mean scores of the younger parents and the parents of 25 to 35 year olds was significant ($p = 0.0111$) showing the influence of age socioeconomic, education and possible cultural differences as variables

The closeness of the scores throughout the parental groups may be due to the types of statements and the nature of the scale. The statements were aimed at testing the opinions specifically of Chinese parents and had built in common beliefs and superstitions seen in everyday contact with Chinese people. All parents were Chinese so there were common feelings experienced by all age groups. Even so, the more conservative or traditional opinions were still evident in the gradation of attitude through the age groups.

Comparison of scores on the SADP and the Parental Attitude Scale are not directly comparable, but it is of note that the scores on the Parental attitude Scale showed a more positive attitude of the parents toward their own handicapped child than towards handicapped persons in general, as measured by the SADP. The SADP is a more general attitude scale whilst the Parental Attitude Scale is directly concerned with the parents' own experience and feelings. The Chinese family is a close knit family and Chinese people, in general, have little concern for people and events outside their own immediate circle of family and friends. Therefore the parents' general attitude towards handicapped

people who are not part of their family, would be less positive than the attitudes towards their own children.

There was no real diversity of opinion by all parents regarding the statement that "nothing can be done to make my handicapped child more normal." Whilst statistically there was no real diversity of opinion, the scores showed a slight tendency to disagreement. This was the only statement in the scale which had this non diversity of opinion throughout the parental groups, and strictly speaking it could be removed if the scale was to be used in further studies of this nature.

There was general disagreement with the ancestral concept as a reason for handicap in all parental groups. It was also encouraging to note strong disagreement with the concept of locking handicapped children away. Parents also felt that other children in the family would not accept a handicapped sibling with love and understanding. It was disappointing to note strong disagreement with concepts of integration of handicapped individuals into society. This as well as other factors such as access difficulty, crowded streets, inaccessible public transport goes some way to explain the rarity of handicapped persons on the streets of Hong Kong.

During the 1970's and 80's the deinstitutionalisation movement was at its height in the United States, and Europe, but it was soon realised that there were problems, especially in the United States (National Institute of Mental Health 1980). Opposition to community based homes became quite fierce, especially in "middle class" neighbourhoods (Piasecki 1975, Gardener 1981, Hogan 1986, Graham et al 1990). Announcements in the media prior to introducing a home into a neighbourhood had mixed

responses. Some studies found that this approach was likely to engender more intense opposition (Baron et al 1981, Seltzer 1984). This is in contrast to a study by Gething (1986) where the opposite was found.

In Hong Kong the opposition to community integration has been reported extensively recently in the press, and discussed in the literature review. The negative attitude of parents to integration is possibly due to their experience of this opposition or they may actually believe themselves that integration is not a good thing.

The parents overall were in agreement with two statements, both statements dealing with the burden of a handicapped child and the strain this places on marital relationships. The agreement here indicated an acceptance that having a handicapped child will cause disruption in the family, possibly disintegration of a marriage and certainly a financial burden as well as an emotional one

In the older parental group agreement for these statements was not as strong as with the two younger parental groups. Agreement was also seen in the older parental group for the statement on removal of a handicapped child from the family as soon after birth as possible. It was significant that agreement to this statement only came from the older parents. It is quite an emotive and controversial statement, and their agreement may reflect the possibilities, as they see, of a life if their handicapped child had been removed from the family at a very early stage. Also the facilities now in place for education and training were not available to the older parents who were consequently left to shoulder the full burden of looking after a handicapped child. Today, parents can chose day school or weekly school where the

child stays at the school all week, coming home at weekends and holidays, so reducing the strain on the family

There was general disagreement on whether the parents of handicapped children should not let this influence their decision to have more children. This being a negative statement, disagreement means it should be of influence. Even though there was general disagreement there was a gradation of disagreement with the older parents disagreeing the most, possibly due to the older parents having had more experience with their handicapped child and realising the limitations the child puts on family life. However there was uniform disagreement that it would be preferable for handicapped children to die at birth.

Parental concern about what other people thought about them having a handicapped child was evident and total disagreement that other children and relatives would accept a handicapped child in the family. There was also general disagreement that parents should not consider themselves to blame for their child's handicap. This meant that there was agreement that apportionment of blame should rest to some extent on the parent.

This is seen in studies on middle class white populations (Lax 1984) and a Chinese population (Shen Ryan et al 1989). In the study by Lax (1984) the parents felt that the child's condition was a result of something they had done. In the study by Shen Ryan et al (1989) some parents feared being blamed for causing the disability. Some blamed their spouse and some became depressed and socially isolated

There was a gradation in the degree of disagreement, the older parental group showing a higher mean negative response.

Overall a pattern of opinion emerges. Parents in all groups felt to varying degrees that.

1. A handicapped child was a burden both in terms of finance and family disruption.
2. Handicapped children were a strain on marriages and family life.
3. A mother of a handicapped child should think carefully before having more children.
4. The concept of ancestor blame was not relevant in today's thinking.
5. There should not be social integration of handicapped persons
6. Families were not charitable towards their handicapped members.
7. There was no embarrassment or shame attached to having a handicapped child
8. There is some portion of blame attached to the parent for having a handicapped child

There is gradation of opinion throughout the parental groups which reflected the age, education and experience of the parents, culminating in the contrary agreement of the older parents on removal of the child permanently from the family.

Factor analysis of the scale showed three interpretable factor groups. There were some common statements in the factor groupings for each parental group, but these were not consistent. It decided, therefore, to take the score of the scale in total as a measure of opinion.

An important question for all parents of handicapped individuals is what future their child will have. Many countries have good social service support for handicapped person and their parents, from education for the younger groups to work training centres for adults. However, even in developed countries such as the United States, these systems are relatively recent. Seltzer et al (1987) said a consequence of this is that the older parent has missed out on this support and has suffered. This is borne out to some extent in this study with only 3.8% of older parents felt that the future for their child was good. Hong Kong does not have a well developed social service which is essential to support families of handicapped persons without this support breakdown in the family structure can occur (Carter 1984) with the result of permanent admission of the handicapped member to an institution. The stress buffering effects of good social service support have been documented by Carter (1984), Friedrich et al (1985), Tausig (1985) and Grant (1990). Parental concern for the future of their handicapped child is seen in this study with an overall of only 12.9% of parents who felt that the future for their child was good.

If the feeling for the future of their children is not good then planning for the future should be the next important item on the family agenda. However, the results showed that the majority of younger parents, 97.7% had not planned for their child's future, and a similar proportion of parents of the 14 year olds had also not planned for their child's future. In the older parental group 66.8% had no plans but conversely 33.2% had. This planning was very limited to trying to find training or work centre places for the child.

Studies by Pahl et al (1984) and Quine et al (1989) confirm this reluctance to plan for the future with parents coping on a "day to day" basis. It has been suggested that this might be a subconscious desire of the parent not to accept that their child is abnormal (Grant 1990).

Parental vacillations and anxieties about the future of their handicapped child have been studied by Richardson et al (1986) and Richardson (1987). Some older parents were seen to be concerned with finding a place for their adult handicapped offspring outside the family home, either to alleviate their own failing health, incapacity or stress, or to allow their son or daughter to develop some independence from the family. Others were not looking for any future provision either because they depended on having their son or daughter with them to meet their own needs in some way, or they had not yet faced making any decision. The Chinese family is a large one and to a great extent self supporting. The lack of preparation for the future may be due, in some way, to this. There is also the supportiveness of the kinship network with its shared sense of values and the interdependencies of people who are in similar circumstances can lead to deferred decision making (Grant 1990).

In general, parents are worried about what the future holds for their handicapped child but seem unable to make provision for that future.

The dental practitioners scores on the SADP were quite good with a mean score of 94.5 and the 50th percentile score being in the 90's. This indicates a positive attitude toward handicapped persons and is even better than the scores of the younger parental group. The majority of dental practitioners surveyed

had qualified from 1985 to 1995 and were the younger practitioners. Also only 42.8% of the practitioners qualified in Hong Kong, the rest having qualified in other parts of the world, mainly the United Kingdom, Taiwan and the Philippines. The positive attitude scores could therefore be influenced by a number of variables. The practitioners are in the younger age bracket, they are well educated and earning a high income. Even so, the majority of practitioners, 59.6% see only 1 up to 5 handicapped patients a year and 15.5% non at all.

Contact is an important aspect of accepting and being willing to treat handicapped people. This has been shown in studies by Campbell et al (1983), Bedi et al (1986), Wright et al (1987), O'Donnell (1993) on dental students, and a studies by Gruythuysen (1987) and Bickley (1990) on dental hygienists. It is a circular process lack of contact or fewer patients leads to lack of expertise which results in wanting to see fewer patients. A study by Davies et al (1988) showed that in Salford about 114 handicapped patients were treated by 62 dentists which means that each dentist may treat about 2 handicapped adults per year. The authors conclude that with this distribution it would be highly unlikely that expertise could be developed. A similar conclusion can be made from the results of this study.

The SADP scores were normally distributed and a factor analysis showed three interpretable factors. The groupings were different from the parental groupings with one group similar to a grouping seen in the younger parental responses.

The SADP responses showed agreement with only three statements related to repetitive work being suitable for the disabled, childishness of disabled people and their accident

proneness. All other statements were disagreed with. Because of the way in which the scale is constructed this does not imply total negativeness. There were positive attitudes on moral issues such as education, and having children which was contrary to the parental attitudes, and negative attitudes on where the disabled should live and employment, very similar to the parents.

The Dental Practitioner Attitude Scale was a scale derived for this study and was a 10 statement Likert scale. The maximum score available on the scale was 60. The mean score for the practitioners was 33.7, over the half way mark indicating a slightly positive feeling for treating handicapped persons in practice.

A factor analysis found three interpretable factor groups, grouped into financial considerations, training and management and effect on the practice of having handicapped patients.

There was disagreement in the need for training in the treatment of handicapped persons which was also found in the study by Davies et al (1988), even though it has been shown that courses on the treatment of handicapped patients have a positive effect on the practitioner (Bedi et al 1989, Ferguson et al 1991, O'Donnell 1993). Combined with this the dental practitioners were not very enthusiastic about treating handicapped patients in their practice. Handicapped people require patience and understanding to treat, which is time consuming and quite frustrating. This is perceived as time consuming which is related to practice costs.

The major agreement was that treating handicapped people in private practice was not financially viable. This was combined

with the opinion that expensive, specialised dental equipment was necessary to treat handicapped patients. This is not necessarily true as the majority of handicapped patients can be treated in a normal general practice (Hinchcliffe 1988, Stevenson et al 1991)

Studies by Smith et al (1980), Kail et al (1984), Felder et al (1988) and Finger et al (1989) have indicated that access to buildings has often been mentioned by handicapped persons as a problem. In this study the number of dental practitioners with surgeries on the ground floor was 39.6%. The majority having their surgeries on the first or second floors. This makes access difficult and combined with transport problems will be a major barrier.

There was major agreement that the government should be responsible for the provision of dental care to the handicapped with specialist centres. This view is similar to that of the parental groups. There seems a need from both practitioners and parents to be able to accuse a higher authority of not behaving responsibly. The general dental practitioners quite obviously feel that the treatment of handicapped patients should be done elsewhere, and the parents also feel that their handicapped child should be treated at a government specialist centre. The government "Community Dental Service" is not well developed, and does not cater for the groups of children used in this study. They have no other recourse but to utilise general dental surgeons who look on this prospect with little enthusiasm.

There was disagreement that a handicapped patient would have a detrimental effect on the practice, and also it was not felt that a practice treating handicapped patients would have problems with ancillary staff.

5.2 Conclusions

The major conclusions of the study can be enumerated as follows:

1. Dental service utilisation by the three groups was low
2. Caries experience in the older age group was high with a large Missing component, indicating that extractions rather than prevention and conservation had been carried out.
- 3 Oral hygiene in all groups was poor.
4. The main reasons for the low dental utilisation was finances, transportation and a belief that the dentist would not treat the child.
5. There was gradation in parental attitude toward handicapped individuals. The older parents were more negative.
6. The gradation corresponded to education, age and socioeconomic factors.
7. There was a strong negative feeling regarding integration of handicapped persons in schools and society in general
8. Overall groups the parents felt that a handicapped child put a strain on their marriage and a financial burden on the family.
- 9 There was a strong feeling of hopelessness towards the future prospects of the children This feeling was strongest in the older parental group
- 10 Dentists' attitude towards handicapped persons was good, much better than the parental groups.
11. Due to the better socioeconomic situation of the dentists, the younger age group and better more diversified education.
12. Dentists did not feel enthusiastic about treating handicapped individuals.
13. They also felt that it would be financial non viable to treat handicapped patients.

14. The dentists did not feel that treating handicapped patients would affect their practice or have an adverse effect on their ancillary staff.
15. Dentists felt that further training in the care of handicapped patients would not benefit them in any way.
16. All parental groups and dental practitioners felt strongly that it was the responsibility of government to provide dental care for mentally and physically handicapped people with the dental practitioners going further in feeling that handicapped persons should be treated at specialist centres.

5.2.1 In Summary

The hypothesis and sub hypotheses of the study have been mainly fulfilled in that being mentally and/or physically handicapped is a barrier to the delivery of dental care, and is therefore a stigma, but more in the socioeconomic sense than in physical presentation and appearance.

For the parents, all the parental groups there is a reluctance for the parents to integrate their child into society, and to take their child out in public as much as possible. Whilst the major reasons for dental non attendance were financial and transport problems, with some concern that the dentist will not treat, the reluctance to be seen out or integrate their child into society will have an effect on whether the child is taken to the dentist or not. The "stigma" of being handicapped, as perceived by the parents, combined with other factors, has the effect of low dental service uptake.

The dental practitioners are not enthusiastic about treating handicapped patients and perceive that such treatment will be

time consuming, involve complicated equipment and be expensive. This combined with the strong feeling that government should be providing dental care, and there should be specialist centres, means that the dental practitioner does not want to treat you if you are handicapped. In this case, the "stigma" of being handicapped is not in the way handicapped persons are presented i.e. physical appearance and manner, but more socioeconomic in the way the practitioner feels.

The strong feelings of the parents and dental practitioners about government involvement in dental care for the handicapped indicates that more should be done by the government to help in this area. The school dental care service should be expanded to include handicapped persons of all ages with the establishment of specialist centres. Dental health education should be provided to special schools and institutions with special programmes devised for this group. Without this government involvement, dental care for the handicapped preschool children, adolescents and adults will remain in the private sector where there are no organised dental education and preventive programmes and dental practitioners who are not enthusiastic about treating this group of patients.

REFERENCES

Acton H.M , Zabatany L. (1988) Interaction and performance within cooperative groups. effects on non handicapped students' attitudes toward their mildly mentally retarded peers. *Am J Ment Ret* 93: 16-23

Agerholm M (1975) Handicaps and the handicapped: a nomenclature and classification of intrinsic handicaps. *J Roy Soc Hlth* 95 3-8.

Albrecht G.L , Walker V.G., Levy J A. (1982) Social distance from the stigmatized: a test of two theories *Soc Sci Med* 16: 1319-1327.

Aloia G.F., Knutson R., Minner S H , Von Seggen M. (1980) Physical education teachers' initial perceptions of handicapped children. *Ment Ret* 18: 85-87.

American Psychiatric Association (1987) Diagnostic and statistical manual of mental disorders (DSM-III-R). American Psychiatric Association 28-33. Washington

Anthony W.A. (1972) Societal rehabilitation: changing society's attitudes toward the physically and mentally disabled. *Rehab Psychol* 19. 117-126.

Antonak R.F. (1981) Prediction of attitudes toward disabled persons: a multivariate analysis *J Gen Psychol* 104. 119-123.

Antonak R.F. (1982) Development and psychometric analyses of the scale of attitudes towards disabled persons. *J Applied Rehab Counselling* 13: 22-29.

References

- Armstrong R W., Rosenbaum P L., King S M. (1987) A randomized controlled trial of buddy program to improve children's attitude toward the disabled. *Dev Med Child Neurol* 29. 327-336.
- Ashman A.F., Pendred J (1983) Attitudes towards the mentally and physically disabled *Br J Med Psychol* 56. 179-187.
- Bambrick M., Roberts G.E (1991) The sterilization of people with a mental handicap: the views of parents *J Ment Def Res* 35: 353-363.
- Bart B A. (1994) Trends in caries prevalence in North American Children *Int Dent J* 44 403-413.
- Baron R., Piasecki J R. (1981) The community versus community care in New directions of mental health services: Issues in community residential care. P 63-76. Josey-Bass San Francisco.
- Becker H. (1973) *Outsiders. studies in the sociology of deviance.* New York Free Press, New York.
- Bedi R , Chan T.S C., O'Donnell D (1986) Evaluation of attitudes of Chinese dental students toward dental care for patients with handicapping conditions. *Spec Care Dent* 6: 29-32.
- Bedi R , O'Donnell D. (1989) Long term effects of a course on dental care for handicapped persons *J Dent Educ* 53: 722-724.
- Begab M.J., (1970) Impact of education on social work students' knowledge and attitudes about mental retardation *Am J Ment Def* 74: 801-808.

References

Beh-Pajoo A. (1991) The effect of social contact on college students' attitudes toward severely handicapped students and their educational integration. *J Ment Def Research* 35: 339-352.

Bishley S R (1990) Dental hygienists' attitudes toward dental care for people with a mental handicap and their perceptions of the adequacy of their training. *Br Dent J* 168. 361-364

Bloom B. (1963) Definitional aspects of the crisis concept. *J Consult Psychol* 27: 42.

Block M.J, Walken J W. (1980) Effect of an extramural programme on students attitudes towards dental care for the mentally retarded. *J Dent Educ* 44: 158-161.

Bond M.H , and Kwang K H (1988) The social psychology of the Chinese people. In *The psychology of the Chinese people*. Ed Bond M H. Oxford University Press. Hong Kong

Bond M.H. (1991) *Beyond the Chinese face. Insights from psychology* Oxford University Press. Hong Kong.

Booth T A. (1978) From normal to handicapped child. unravelling the idea of sub normality in families of mentally handicapped children. *Sociology* 12: 203-221.

Bourke L.F., Jago J.D. (1983) Problems of persons with cerebral palsy in obtaining dental care. *Aus Dent J* 28: 221-226.

Breslau N. (1987) Abortion of defective fetuses: attitudes of mothers of congenitally impaired children *J Marriage and the Family* 49: 839-845.

References

- Bull R. (1979) The psychological significance of facial deformity. In Cook M, Wilson G (eds) Love and attraction: an international conference. Pergamon. Oxford.
- Bulman J.S., Osborn J F. (1989) Statistics in Dentistry: probability and sampling. *Brit Dent J* 166: 132-135
- Burden R., Thomas D. (1986) A further perspective on parental reaction to handicap. *The Exceptional Child* 33: 140-145
- Burt B A (1994) Trends in caries prevalence in North American children. *Int Dent J* 44 403-413
- Chen M., Jones G.S., Muncie D.L., et al. (1986) Availability of dental services to developmentally disabled persons residing in the community. *Spec Care Dentist* 10 182-184.
- Butler E.W. (1986) Labelling, mild mental retardation, and long range social adjustments. *Soc Perspective* 29: 461-483.
- Campbell J.T., McCaslin F.C. (1983) Evaluation of a dental training program for care of the handicapped. *Spec Care Dentist* 3: 100, 102-107.
- Carsrud A.L., Ahgler R.D., Dood B G. (1986) Evaluating the effects of a community awareness program on attitudes toward sheltered work shop and living projects. *Br J Ment Subnormality* 32: 37-41.
- Carter G. (1984) Why are the mentally handicapped admitted to hospital? A ten year survey. *Br J Psychiat* 145: 283- 288.
- Cattell R.B. (1966) The scree test for the number of factors. *Multivariate Behavioral Research* 1: 245-276.

References

Centers L., Centers R. (1963) Peer group attitudes toward the amputee child. *J Soc Psychol* 61: 127-132.

Chan D.Y.H. (1995) A report on the pre programme surveys of the preschool oral health education programme, part I - V. Department of health. Hong Kong Government. Hong Kong

Chan F., Hua M S., Ju J J., Chow S L. (1984) Factorial structure of the Chinese scale of attitudes toward disabled persons, a cross cultural validation *Int J Rehab Research* 93: 317-337.

Chan F., Hedl J., Parker., Lam C., Chan T N., Yu B. (1988) Differential attitudes of Chinese students toward people with disabilities, a cross cultural perspective *Int J Social Psychiat* 34. 267-273

Chan J C.Y. (1994) Introduction to the School Dental Care Service, Hong Kong. *Pub Health Epidemiol Bull* 3: 22-23.

Chataway E J , Madak P R (1981) Parental attitudes toward disabled persons and reaction to integration of disabled and non disabled children in an elementary school setting. Proceedings of the Annual Convention of the Canadian Psychological Association. Toronto. Canada.

Chester M. (1965) Ethnocentrism and attitudes toward the physically disabled. *J Personality Social Psychol* 2: 877-882.

Chin Shong (1968) Rejection of the mentally ill: A comparison with findings on ethnic prejudice. Doctor of Philosophy Dissertation. Columbia University. New York.

References

Chronbach L.J. (1951) Coefficient alpha and the internal structure of tests. *Psychometrika* 16 297-334.

Clark A.W., Binks N.M. (1966) Relation of age and education on attitudes toward mental illness. *Psychological Reports* 19: 649-650.

Cochran W G. (1997) *Sampling Techniques*. Wiley. New York

Cohen J A. (1960) A coefficient of agreement for nominal scales. *Educ Psychol Measurement* 20: 37-46.

Cohen J.S., Struening E.C. (1962) Opinion about mental illness in the personnel of two large mental hospitals. *J Abn Soc Psychol* 64 349-360.

Cohen P. (1962) The impact of the handicapped child on the family. *Social Casework* 43: 137-142.

Comer R.J , Pilavin J A (1972) The effects of physical deviance upon face-to-face interaction the other side. *J Personality and Soc Psychol* 23: 33-39.

Conine T A. (1968) Teachers' attitudes toward disabled persons. *dissertation Abstracts Int* 29, 4102A.

Costin F., Kerr W.D. (1962) The effect of an abnormal psychology course on students' attitude toward mental illness. *J Educ Psychol* 53. 214-218.

References

Davies K.W., Holloway P.J., Worthington H.V. (1988) Dental treatment for mentally handicapped adults in general dental practice: Patient's and dentist's views *Community Dent Health* 3: 381-387.

Davies P.J., Brook A.H., King N.M. (1985) The dental treatment needs of handicapped children and young adults in Hong Kong. *J Int Assoc Dent Child* 16 3-37.

Davis F. (1961) Deviance disavowal: the Management of strained interaction by the visibly handicapped *Social Problems* 9. 120-132.

Deluca K.D., Salerno S.C. (1984) Helping professionals connect with families with handicapped children. Charles C Thomas. Illinois.

Department of Health and Social Security (1972) Cash benefits for the handicapped A selective study of schemes of some European countries. Unpublished report cited in Duckworth D. (1982) The classification and measurement of disablement. H M.S.O. London.

Dixon J E. (1981) The Chinese welfare system 1949-1979 Praeger. New York

Diu s s., Gelbier S. (1989) Oral health screening of elderly people attending a community care centre. *Community Dent Oral Epidemiol* 22: 501-506.

Donaldson J. (1980) Changing attitudes toward handicapped persons: a review and analysis of research *Exceptional Children* 46: 504-514

Downer M.C. (1994) Caries prevalence in the United Kingdom. *Int Dent J* 44:365-370.

References

- Drotar D , Baskiewicz A., Irvin N., Kennel J., Klaus M. (1975) The adaptation of parents to the birth of an infant with a congenital malformation. a hypothetical model. *Pediatrics* 56: 710-717.
- Dudley J R. (1983) *Living with stigma*. Charles C. Thomas. Springfield. Illinois.
- Eissenbery L S. (1976) The care and treatment of handicapped children *J Dent Child* 43, 240-244.
- Elliott G.C., Ziegler H.L., Altman B.M., Scott D.R. (1982) Understanding Stigma; Dimensions of deviance and coping *Deviant Behaviour* 3: 275-300.
- Emerton G.R , Rothman G. (1978) Attitudes towards deafness : hearing students at a hearing and deaf college. *Am Annals of the Deaf* 123 588-593
- Endacott G B. (1988) *A history of Hong Kong* Oxford University Press. Hong Kong.
- Fang H. (1977) *Growing public support for rehabilitation service* Hong Kong Council of Social Service· 40th anniversary. Hong Kong.
- Fairbank J K., Reischauer E.O. (1973) *China: Tradition and Transformation*. Houghton Mifflin New York.
- Farina A., Holland C.H., Ring K (1965) Role of stigma and interpersonal set in the interpersonal interaction. *J Abn Psychol* 71: 421-428.

References

Farina A., Allen J.G., Saul B.B. (1968) The role of the stigmatized person in affecting social relationships. *J Personality* 36: 169-182.

Farina A., Gluha D., Boudreau L.A., Allen J.G., Sherman M. (1971) Mental illness and the impact of believing others know about it. *J Abn Psychol* 77: 1-5.

Felder R.S., Gillette V.M., Leseberg K. (1988) Wheelchair transfer techniques for the dental office. *Spec Care Dentistry* 8: 256-259.

Fergusson F.S., Berentsen B., Richardson P.S. (1991) Dentists willingness to provide care for patients with developmental disabilities. *Spec Care Dentist* 11: 234-237.

Fichten C.S., Compton V., Amsel R. (1985) Imagined empathy and attributions concerning activity preferences of physically disabled college students. *Rehab Psychol* 30: 235-239.

Fichten C.S., Amsel R. (1986) Trait attributions about physically disabled college students: circumplex analyses and methodological issues. *J App Psychol* 16: 410-427.

Finger S.T., Jedrychowski J.R. (1989) Parents' perception of access to dental care for children with handicapping conditions. *Spec Care Dentist* 9: 195-199.

Fisher S. (1973) *Body consciousness: you are what you feel*. Englewood Cliffs. Prentice Hall. New Jersey.

References

Florian V. (1977) A comparison of attitudes toward the physically disabled between Jewish and Arab high school students. *Megamot* 2: 184-192.

Florian V. (1978) Employers' opinions of the disabled person as a worker. *Rehab Counselling Bull* 22; 38-43.

Florian V., Shurka E. (1981) Jewish and Arab parents' coping patterns with their child with a disability in Israel. *Int J Rehab Research* 4: 201-204

Florian V., Kehat D. (1987) Changing high school student's attitudes toward disabled people. *Health and Social Work*, Winter: 57-63

Florian V. (1989) The cultural impact on the family dynamics of parents who have a child with a disability. *J Comp Fam Stud* XX: 97-111.

Francis J R , Stevenson D R , Palmer J.D (1991) dental Health and dental care requirements for young handicapped adults in Wessex. *Community Dent Health* 8: 131-187.

Freed E X. (1964) Opinion of psychiatric hospital personnell and college students toward alcoholism, mental illness and physical disability. An exploratory study. *Psychological Reports* 15. 615-618.

Freeman H.E., Kassenbaum G.G. (1960) Relationships of education and knowledge to opinions about mental illness. *Mental Hygiene* 44: 43-47.

Freidson E. (1965) Disability as social deviance In Sussman M B. (ed) *Sociology and rehabilitation*. American Sociological Association. Washington D.C.

References

Friedrich W., Wilturner L., Cohen D. (1985) Coping resources of parenting mentally retarded children. *Am J Ment Deff* 90. 130-139.

Fung Y.L. (1948) *A short history of Chinese philosophy*. Macmillan. New York.

Gallup Organization. (1976) Report for the President's committee on mental retardation: public attitudes regarding mental retardation. In Nathan R. (ed) *Mental retardation. century of decision*. U S Government Printing Office. Washington D C.

Gardener P. (1981) Community acceptance of alternative living arrangements for the developmentally disabled mentally retarded citizen of Ohio. Association for the Developmentally Disabled. Columbus. Ohio. USA

Geist C.S., Calzaretta W.A. (1982) *Placement handbook for counselling disabled persons*. Charles C. Thomas. Springfield. Illinois.

Geskie M.A., Salasek J.L. (1988) Attitudes of health care personnel toward persons with disabilities, in: *Attitudes toward persons with disabilities*. Ed Yuker H E. Chapter 14 Springer. New York.

Gething L. (1986) International Year of Disabled Persons in Australia: Attitudes and integration *Rehab Lit* 47: 66-70

Gilfoyle E M., Gliner J.A. (1986) Attitudes toward handicapped children: impact of an educational program. *Physical & Occupational Therapy in Paediatrics* 5. 27-41.

References

Glassner B., Freedman J.A. (1979) *Clinical Sociology*, Longman. New York

Goffman E. (1971) *Relations in public: microstudies of the public order*. Allen Lane, London

Goffman E. (1986) *Stigma: Notes on the management of spoiled identity* Touchstone Simon and Schuster. New York.

Goss V.F., Sheppard G (1979) Attitudes toward physically disabled person. Do education and personal contact make a difference? *Canadian Counselor* 13: 131-135.

Gotleib J. (1974) Attitudes toward retarded children. Effects of labeling and academic performance. *Am J Ment Def* 79: 268-273

Gove W (1976) *Disability and social deviance in Sociology and rehabilitation*. Albrecht G. (ed) University of Pittsburg Press Pittsburg, Pennsylvania

Graffi S , Minnes P.M. (1988) Attitudes of primary school children toward the physical appearance and labels associated with Down syndrome. *Am J Ment Ret* 93: 28-35.

Graham L , Hogan R. (1990) Social class and tactics: neighbourhood opposition to group homes *Sociol Quarterly* 31: 513-528

Grant G. (1990) Elderly parents with handicapped children: Anticipating the future. *J Aging Studies* 4: 359-374.

References

- Gruythuysen R J.M. (1987) Dental hygiene students' attitudes and self confidence in the care of the disabled J Dent Educ 51: 713-716.
- Gullikson J.S. (1969) Oral findings of mentally retarded children. J Dent Child 36. 59-63.
- Gunzburg H C. (1968) Social compliance and mental handicap: an introduction to social education Bailliere, Tindall and Cox. London.
- Haber L.D , Smith R.T. (1971) Disability and deviance: Normative adaptations of role behaviour Am Soc Review 36: 87-97.
- Hafner M , Narcus M (1979) Information and attitudes toward disability. Rehab Counselling Bull 23. 95-102
- Hagen B.H , Powell C., Adams R (1983) Influence of personal and academic experiences on formation of attitudes towards mentally retarded adults. Perceptual and Motor Skills 57: 835-838.
- Hahn H. (1983) Paternalism and public policy Society March\April. 36-46
- Hahn H. (1988) The politics of physical differences: disability and discrimination. J Soc Issues 44:39-47
- Hanks M., Poplin D. (1981) The sociology of physical disability: a review of literature and some conceptual perspectives. Deviant Behaviour 2 309-328.
- Hare E.H., Laurence K.M., Paynes H., Rawnsley K. (1966) Spina bifidocystica and family stress. Br Med J 2: 757.

References

Harris A.I., Cox E and Smith C R W. (1971) Handicapped and impaired in Great Britain. Part 1. H.M S.O. London.

Harrisymiw J.J. (1976) Integration of handicapped children: Its affect on teacher attitudes. *Education* 96. 153-158.

Hastorf A.H , Wildfogel J , Cassman T. (1979) Acknowledgements of handicap as a tactic in social interaction. *J Personality and Soc Psychol* 37: 1790-1797.

Her Majesties Stationary Office. (1959) Handicapped Pupils and special education. H.M S O London.

Herman N J., Miall C E. (1990) The positive consequences of stigma. two case studies in mental and physical disability. *Qualitative Sociology* 13: 251-269

Hillard L.T. (1960) Report on the problem of mental deficiency in Hong Kong. Hong Kong Government report. Hong Kong

Hinchcliffe J E., Fairpo C.O., Curzon M.E J. (1988) The dental conditions of mentally handicapped adults attending adult training centres in Hull. *Community Dent Health* 5: 151-162.

Hoad Reddick G., Grant A.A. (1987) The dental health of an elderly population in north west England, *J Dentistry* 15: 138-146.

Hogan R. (1986) Community opposition to group homes. *Soc Science Quarterly* 67. 442-449

References

Holmgren C.J., Corbet E.F., Lim L.P. (1994) Periodontal condition among the middle aged and elderly in Hong Kong Community Dent Oral Epidemiol 22. 396-402.

Hong Kong Association for the Mentally Handicapped (1993/4) Annual report.

Hong Kong Government. (1960) The mental health ordinance. Department of Health. Government secretariat. Hong Kong.

Hong Kong Government. (1976) The future development of rehabilitation services in Hong Kong Green paper. Hong Kong Government. Hong Kong.

Hong Kong Government. (1977) Integrating the disabled into the community. White paper. Hong Kong Government. Hong Kong

Hong Kong Government. (1978) Rehabilitation programme plan. Rehabilitation division Education and manpower branch of the government secretariat. Hong Kong.

Hong Kong Government (1981) 1981 Population census: disablement characteristics. Census and statistics department. Hong Kong.

Hong Kong Government (1984) Hong Kong 1984 review of rehabilitation programme plan. Rehabilitation division, education and manpower branch of the government secretariat. Hong Kong

Hong Kong Government (1991) 1991 population census Census and statistics department. Hong Kong

References

Hong Kong Government (1994) Hong Kong annual digest of statistics. Census and statistics department. Hong Kong

Hong Kong Government (1995) Public health report No 2. Department of health. Hong Kong.

Hong Kong Government (1995) Comprehensive social security assistance scheme information pamphlet 527. Hong Kong

Jackson D. (1950) The measurement of caries susceptibility. *Br Dent J* 88. 157-168.

Jarvis K.C., French R. (1990) Attitudes of physical educators toward the integration of handicapped students. *Perceptual and Motor Skills* 70: 899-902

Jaques M E , Burleigh D.L., Lee G (1973) Reactions to disabilities in China: a comparative, structural and descriptive analysis. *Rehab Counselling Bull* 16: 207-217.

Jones E.E., Farina A., Hastorf A.H , Markus H., Miller D T , Scott R A , French R.de S. (1984) *Social stigma : the psychology of marked relationships*. Freeman Press. New York.

Jones R L (1972) Labels and stigma in special children. *Exceptional Children* 38: 553-564.

Jordan J.E., Friesen E.W. (1968) Attitudes of rehabilitation personnel toward physically disabled persons in Columbia, Peru and the United States. *J Soc Psychol* 74: 151-161.

References

Kail B.J P , Silver M.M. (1984) The dental demands of elderly people living at home in Hertfordshire. *Br Dent J* 157: 94-97.

Kaiser H F. (1960) The application of electronic computers to factor analysis. *Educ and Psych Measurements* 20: 141-151.

Kastner L.S., Reppucci N D , Pezzoli J.J (1979) Assessing community attitudes towards mentally retarded persons. *Am J Mental Def* 84. 137-144.

Katz I., Farber J., Glass D C., Lucido D , Emswiller T. (1978) When courtesy offends: effects of positive and negative behaviour by the physically disabled on altruism and anger in normals *J Personality* 46. 506-518

Katz I., Glass D.C., Farber J. Harm-doing and victim's racial or orthopaedic stigma as determinants of helping behaviour. *J Personality* 47: 340-364.

Kelly T.L. (1942) The reliability coefficient. *Psychometrika* 7. 73-75.

Kinne R., Steifel D.J. (1979) Assessment of student attitude and confidence in a program of dental education in the care of the disabled *J Dent Educ* 43: 271-275

King A.Y.C., Bond M.H. (1985) The Confucian paradigm of man a sociological view. In W.S. Tseng and D.Y.H. Wu (Eds). *Chinese culture and mental health* p 29-46. Academic Press. New York.

References

King N.M , Ling J.Y K., Ng B.V. and Wei S.H Y. (1986) The dental caries status and dental treatment problems of 12 year old children in Hong Kong. *J Dent Research* 65: 1371-1374.

Kifune N (1986) The relationships between the attitudes toward mentally retarded children and the experience and contacts with mentally retarded children by normal children *Jap J Spec Educ* 24.11-19

Kristof N.D., Wudunn S. (1994) *China wakes*. Random House. New York.

Kwan E L (1992) Oral health status of 13 and 15 year old secondary school children in Hong Kong MDS thesis. University of Hong Kong

Latimer R. (1970) Current attitudes towards mental retardation. *Mental Ret* 8: 30-32.

Lawton M.P. (1964) Studies on the psychiatric aide. *Mental Hospitals* 15 512-515.

Lawton M P. (1965) Personality and attitudinal correlates of psychiatric aide performance. *J Soc Psychol* 66: 215-226.

Lax R F. (1984) Some aspects of interaction between mother and impaired child. Mother's narcissistic trauma. *Int J Psychoanalysis* 53: 339-344.

Lees D. and Shaw S. (1974) *Impairment, disability and handicap*. Heinman Educational. London.

References

Leonard C.J. (1985) Brief outlines of the parent\family reaction to childhood disability in families from 3 ethnic minority groups Int J for the Adv of Counselling 8. 197-205.

Leung A.K.C., Robson W.L.M , Fagan J., Chopra S , Lim S.H N (1995) Mental Retardation. J Roy Soc Health 115: 31-39.

Levine N. (1985) Community responses to the disabled and the dental profession's responsibility. J Can Dent Assoc 51: 35-40.

Levintin T.E (1975) Deviants as active participants in the labelling process; the visibly handicapped Social Problems 22. 548-557.

Leviton F.J. (1980) The willingness of dentists to treat handicapped patients. a summary of eleven surveys. J Dent Handicapped 5· 13-17

Likert R. (1932) A technique for the measurement of attitudes. Arch Psychol 40 1-55.

Lind O.P. Evans R W., Holmgren C J., Corbet E.F., Lim L P. and Davies W I R. (1986) Hong Kong survey of adult oral health. Department of Periodontology and Public Health. Faculty of Dentistry. University of Hong Kong. Hong Kong

Linveh H. (1982) On the origins of negative attitudes towards people with disabilities. Rehab Literature 43: 338-347.

Lo E.C.M Schwarz E (1994) Tooth and root conditions in the middle aged and the elderly in Hong Kong Community Dent Oral Epidemiol 22. 381-385

References

Lo G.L , Soh G., Vignehesa H., Chellappah N K. (1991) Dental service utilization of disabled children Spec Care Dentist 11: 194-196.

Locker D. (1988) Measuring oral health: a conceptual framework. Community Dent Health 5: 3-18.

Lubin R.A.S , Zigman A.A , Warren B , Janicki M P. (1982) Community acceptance of residential programs for developmentally disabled persons Applied Research in Mental Retardation 3. 191-200.

McConkey R , McCormack B , Naughton B. (1983) A national survey of young peoples perceptions on mental handicap. J Ment Def Res 27 171-185.

McCubbin H.I., Joy C., Cable A , Comeau J , Patterson J., Needle R. (1980) Family stress, coping and social support: a decade review J Marriage and Family 42: 855-871.

McMichael J K (1971) Handicap. a study of physically handicapped children and their families. Staples Press. London.

Manning P. (1975) Deviance and dogma. Brit J Criminology 15 1-20

Mathewson R J., Beaver H.A. (1970) A survey of dental care for handicapped children. J Pub Health Dent 30: 45-52.

Matheny A.P., Vernick J. (1969) Parents of the mentally retarded child. emotionally overwhelmed or informationally deprived. J Paediatrics 74: 953-959

References

Melville M R.D , Pool D.M., Jaffe E.C., Gelbier S , Tulley W.J. (1981) A dental service for handicapped children. Br Dent J 151: 259-261.

Middleton J (1953) Prejudices and opinions of mental hospital employees regarding mental illness Am J Psychiatry 110: 133-138

Miller S.L., Heil J. (1976) Effect of an extramural program of dental care for the special patient on attitudes of students. J Dent Educ 40: 271-275

Mitchell R.G (1973) Defining medical terms. Editorial. Dev Med and Child Neurol 15. 279-280.

Moser C.A.,Kalton G. (1980) Survey methods in social investigation Heinemann. London.

Mosley K L (1986) The history of infanticide in Western society. Issues in Law and Medicine 1: 345-361

Murray R (1969) Attitudes of professional non psychiatric nurses toward mental illness. J Psychiatric Nursing and Mental Health Care 20. 117-123.

Myers J.K (1965) Consequences and progression of disability. In Sussman M.B. (ed) Sociology and Rehabilitation. American Sociological Association. Washington D C.

National Institute of Mental Health (1980) Halfway houses and long term community residences for the mentally ill. Deapartment of health and Human Services publication no ADM 80 Government Printing Offoce. Washington DC. USA.

References

Needham P.L. (1978) Evaluation of a special training program. *J Dent Educ* 32. 276-278.

Novic B.J. (1982) Letter to the editor *Physical Therapy* 62: 873-874.

Nunn J.H. (1987) The dental health of mentally and physically handicapped children. A review of the literature. *Community Dent Health* 4. 157-168.

Nunn J H., Murray J.J. (1988) Dental care of handicapped children by general dental practitioners *J Dent Educ* 52: 463-465

Nuttall N.M , Davies J A (1988) The capability of the 1983 Children's Dental Health Survey in Scotland to predict fillings and extractions subsequently undertaken. *Community Dental Health* 5: 355-362.

O'Donnell D., Cooper J R. (1984) A pattern for the establishment of a unit for the dental treatment of the handicapped patient in the community based on such a unit in Hertfordshire. *J Roy Soc Hlth* 104: 123-125

O'Donnell D (1985) Barriers to dental treatment experienced by a group of handicapped adults in Hertfordshire. *Quintessence Int* 16: 225-228.

O'Donnell D. (1988) The dental status of a group of cerebral palsied pre-school children in Hong Kong. *Hong Kong Journal of Paediatrics* 5: 135-139.

O'Donnell D., Crosswaite M.A (1988) Dental health education for mentally handicapped children. *J Roy Soc Hlth* 108: 8-10.

References

O'Donnell D (1992) The prevalence of non repaired fractured incisors in visually impaired Chinese children and young adults in Hong Kong *Quintessence Int* 23: 363-366.

O'Donnell D (1993) Use of the SADP for measurement of attitudes of Chinese dental students and dental surgery assistants toward disabled persons. *Spec Care Dentist* 13. 81-85.

O'Donnell D. (1996) The special needs patient: treatment in general dental practice - is it feasible? *Int Dent J.* 46:315-319.

Olshansky J. (1962) Chronic sorrow a response to having a mentally deficient child. *Social Casework* 43 190-193.

Pahl J., Quine L. (1984) Families with mentally handicapped children: A study of stress and service response Health Service Research Unit, University of Kent at Canterbury.

Parsons T. (1951) *The social system*, Free Press, Glencoe, Illinois,

Patterson J M., McCubbin H.I. (1983) Chronic illness: family stress and coping. In Figley C R., McCubbin H.I (eds). *Stress and the family Vol II. Coping with catastrophe*. Brunner/Mazel New York

Perry R J. (1974) The effect of long term experience on the attitudes of psychiatric aides. *J Community Psychol* 2: 166-173.

Phelps W.D. (1965) Attitudes related to the employment of the mentally retarded *Am J Ment Def* 69: 575-585

References

Piasecki J R. (1975) Community response to residential services for the psycho socially disabled: Preliminary findings of a national survey. First Annual Conference of the International Association of Psycho Social Rehabilitation Services. Miami. Florida. USA.

Piper K., Dirks B , Kessler P (1986) Oral hygiene and periodontal disease in handicapped adults. *Community Dent and Oral Epid* 14. 28-30.

Plas J., Cook V.J. (1982) Variables that predict desire for work with special education adolescents *Psychology in the Schools* 19. 388-394.

Pool D. (1981) Dental care for the handicapped. *Br Dent J* 151: 267-270.

Quine L., Pahl J (1989) Stress and coping in families caring for a child with severe mental handicap, a longitudinal study *Institute of Social and Applied Psychology. Centre for Health Services Studies University of Kent and Cantabury.*

Rees L.M , Spreen O., Harnadek M. (1991) Do attitudes towards persons with handicaps really shift over time? Comparison between 1975 and 1988. *Ment Ret* 29: 81-86.

Reiter S., Mar'i S., Rosenberg Y. (1986) Parental attitudes toward the developmentally disabled among Arab communities in Israel: a cross-cultural study. *Int J Rehab Research* 9: 355-362.

Ringlaben R P., Price J R (1981) Regular classroom teachers' perception of mainstreaming effects. *Exceptional Children* 47: 302-304

References

Roith A.I (1963) The myth of parental attitudes J Ment Subn 9: 51-54.

Rosenbaum C H. (1984) Treatment of disabled patients in private practice. Dent Clin N Amer 28: 95-106.

Rosenbaum P L., Armstrong R.W., King S M. (1986) Improving attitude toward the disabled: A randomized controlled trial of direct contact versus Kids on the Block. J Dev Behav Pediatr 7: 302-307.

Rocher G A. (1959) A study of certain public attitudes toward the orthopaedically disabled. Doctor of Philosophy Dissertation. New York University. New York.

Roskies E (1972) Abnormality and normality, the mothering of Thalidomide children. Cornell University Press. New York.

Rumsey N., Bull R, Gahagan D (1982) The effect of facial disfigurement on the proxemic behaviour of the general public J Applied Soc Psychol 12: 137-150

Schneider C R., Anderson W. (1980) Attitudes toward the stigmatized some insights from recent research. Rehab Counselling Bull 23: 299-313.

Scholle R H. (1979) Enabling the disabled. JADA 98 514.

Schuller H , Berger W (1979) The impact of physical attractiveness on an employment decision In Cook M., Wilson G (eds) Love and attraction: an international conference Pergammon. Oxford

References

Schwarz E , Lo E.C.M. (1994) The use of dental services by the middle aged and elderly in Hong Kong. *Community Dent Oral Epidemiol* 22. 403-407.

Seige M D (1986) The usefulness of a state wide referral directory of dentists willing to treat disabled persons. *J Pub Health Dent* 46 161-163

Selliz C., Johoda M., Dentsch M., Cook S.W. (1966) Attitude scaling. In. *Attitudes* Johoda M , Warren P. (eds). Penguin London

Seltzer M.M. (1984) Correlates of community opposition to community residences for mentally retarded persons. *Am J Ment Def* 89: 1-8.

Seltzer M.M., Kraus M. (1987) *Aging and mental retardation: Extending the continuum.* Washington American Association of Mental Retardation

Shaw L., MacLaurin E.T., Foster T D. (1986) Dental study of handicapped children attending special schools in Birmingham *Community Dent Oral Epidemiol* 14: 24-27

Shurker E Z. (1988) The impact of cultural, ethnic, religion and natural variables on attitudes toward persons with physical a disability, in: *Attitudes towards persons with disabilities* Ed Yuker H E. Chapter 8, Springer. New York.

Shen-Ryan A., Smith M.J. (1989) Parental Reactions to developmental disabilities in Chinese families. *Child and Adolescent Social Work* 6 283-299.

References

Sigler G R., Lazar A.L (1976) Prediction of teacher attitudes toward handicapped individuals. Annual Convention of the Council for Exceptional Children, Chicago. ERIC Documentation Reproduction Service No ED125235

Silness J., Loe H (1964) Periodontal disease in pregnancy II. Correlation between oral hygiene and periodontal disease. *Acta Odontol Scanda* 22 121-135.

Simson J C , Stanton C L.S. (1990) An investigation into attitudes (and attitude change) towards mental handicap *Br J Ment Sub Normality* XXXVI. 53-64.

Skrtic T M., Siger G.R , Lazar A.L. (1978) Attitudes of male and female TMR teachers toward the handicapped Annual Convention of the Council for Exceptional Children. Dallas. Texas. ERIC Document Reproduction Service No ED 086699.

Smith J.M., Sheiham A. (1979) How dental conditions handicap the elderly. *Community Dent Oral Epidemiol* 7. 305-310.

Smith J.M , Sheiham A. (1980) Dental treatment needs and demands of an elderly population in England *Community Dent Oral Epidemiol* 8: 360-364

Smith L.B. (1981) Dental care of the medically compromised child. A behavioral overview. *J Can Dent Assoc* 10: 667.

Snyder J.R , Knopp J.J., Jordan W.M (1960) Dental problems of non-institutionalised mentally retarded children. *Northwest Dent* 39: 123-133.

References

- Soble R K. (1974) Sociological and psychological considerations in special patient care: the dentist, the patient and the family. *Dent Clin N Amer* 18 545-556.
- Speakman H G.B , Hoffman C.M. (1979) The "fakeability" of the attitude toward disabled persons scale Form B. *Physical Therapy* 59.866-869
- Speakman H G.B , Kung J.S. (1979) Fakeability of the attitude toward disabled persons scale Form A. *New Zealand J Physiotherapy* 8 24-25
- Speakman H.G B., Kung J.S (1980) The relationship between social desirability and attitudes toward disabled persons in physiotherapy students. *J Pakistan Physiotherapy Soc* 7:6-11.
- Speakman H.G B , Kung J S. (1982) Attitudes of physical therapists in Wisconsin toward disabled persons. *Physical Therapy* 62.191-194.
- Spreen O. (1977) Attitudes towards mentally retarded and attitude change: an experimental study. *Zeitschrift fur experimental und angewandte Psychologie* 24: 303-323.
- Steifel D J., Shaffer S.M., Bigelow C. (1981) Dentist's availability to treat the disabled patient. *Spec Care Dentist* 1: 244-249.
- Stephens T.M., Braun B.L. (1980) Measure of regular classroom teachers' attitude toward handicapped children. *Exceptional Children* 46: 292-294.
- Stiff R H., Phipps G.T. (1964) Attitudes of dental students toward chronically ill, aged and disabled persons. *J Dent Educ* 28: 149-154.

References

Stolotov W C. (1971) Evaluation of the patient In Kruser F H., Kottke J F., Ellwood P.M. (eds) Handbook of physical medicine and rehabilitation second edition. W.B. Saunders, New York.

Storhaug K., Holst D. (1987) Caries experience of disabled school-age children. Community Dent Oral Epidemiol 15: 144-149.

Stover L.E. (1984) The cultural ecology of Chinese civilisation. New American Library, New York

Tang F.C., Lee A., Yeung M. and Wong N (1976) Parents attitudes toward the mentally retarded (moderate grade), a study of 293 families. Hong Kong Association for Mentally Handicapped Children and Young Persons. Hong Kong.

Tausig M. (1985) Factors in family decision making about placement for developmentally delayed individuals. Am J Ment Def 89. 325-361.

Taylor D (1977) Physical impairment: Social handicap. Office of health economics. London.

Taylor M C (1991) Stigma: Theoretical concept and actual experience Br J Occupational Therapy 54. 406-410.

Townsend P. (1967) The disabled in society. Greater London Association for the Disabled. London.

Truin G L., Konig K G., Bronkhorst E.M. (1994) Caries prevalence in Belgium and the Netherlands. Int Dent J 44:379-385.

References

Tsang M.S. (1972) Attitudes toward the disabled : A cross cultural study *J Soc Psychol* 87: 311-312.

Turnbull A.P , Summers J A., Brotherson M J. (1984) Working with families with a member with a disability: a family systems approach Kansas University Affiliated Faculty Lawrence Bureau of Child Research. Kansas. U.S A.

Vargo J W., Semple J.E. (1984) Honest versus fake scores on the attitude toward disabled persons scale Form A *Rehab Counsel Bull* 27.182-185

Voeltz L.M. (1982) Effects of structured interactions with severely handicapped peers on children's attitudes. *Am J Ment Def* 86 380-390.

Von der Fehr F.R. (1994) Caries prevalence in the Nordic countries. *Int Dent J* 44 371-378.

Warren S.A. (1965) Problems in the placement and follow-up of the mentally retarded. *Am J Mental Def* 59:408-412.

Wei S.H Y., Holm A K , Tong L.S M and Yuen S.W H (1993) Dental caries and related factors in 5 year old children in Hong Kong. *Paed Dent* 15: 116-119.

Weinberg N L. (1976) Social stereotyping of the physically handicapped. *Rehab Psychol* 23: 115-124.

References

Wilgosh L R., Skaret D.(1987) Employer attitudes toward hiring individuals with disabilities: a review of the recent literature. Can J Rehab 1: 89-98.

Wilson K I. (1991) Treatment accessibility for physically and mentally handicapped people. Community Dent Health 9. 187-192

Wong K K (1968) Report of a dental survey in Hong Kong 1968, The Government Dental Service and the World Health Organisation

Wong N P H. (1993) Superintendent, Pinehill Village School, Hong Kong Association for the Mentally Handicapped, Hong Kong. Personal communication.

Wood P.H.N. (1975) Classification of impairments and handicaps. Document WHO\ICODO\REVCONF\ 75 15. W H.O. Geneva.

World Health Organisation (1977) Manual of the international statistical classification of diseases, injuries and causes of death, Vol 1. W.H.O Geneva

World Health Organisation (1980) International classification of impairments, disabilities and handicaps W.H O. Geneva.

World Health Organisation (1987) Oral health surveys, basic methods. W H.O Geneva.

Wright B.A (1980) Developing constructive views of life with a disability. Rehab Literature 19801: 274-279

References

Wright B.A. (1983) *Physical disability, a psychological approach* Harper & Row. New York.

Wright B.A (1988) Attitudes and the fundamental negative bias: conditions and corrections in Attitudes toward persons with disabilities. Chapter 1. Yuker H.E (ed). Springer. New York

Wright G.Z., Friedman C S. (1987) Dentistry for the handicapped: A survey of pre doctoral teaching programs *Spec Care Dentist* 7: 62-64

Yuker H E., Block J.R., Campbell W.J. (1960) A scale to measure the attitude towards disabled persons. Human resources Study No 5 Human Resources. Albertson. New York

Yuker H E., Block J R., Young J H (1966) The measurement of attitudes toward disabled persons. Human Resources Center, Albertson. New York

Yuker H.E. (1976) Attitudes of the general public toward handicapped individuals. White House Conference of Handicapped Individuals Washington D.C.

Yuker H E. (1986) The attitude toward disabled persons scale susceptibility to faking. *Rehab Counsel Bull* 26 200-204.

Yuker H E., Block J.R. (1986) Research with the Attitude Toward Disabled Persons scale (ATDP) 1960-1985. Hofra University Centre for the Study of Attitudes towards Persons with Disabilities Hempstead New York.

References

Yuker H.E. (1988) The effects of contact on attitude toward disabled persons: Some empirical generalisations in: Attitudes toward persons with disabilities. Ed Yuker H.E. Chapter 19. Springer. New York.

APPENDICES

APPENDIX I

APPENDIX I

Historical Legislative Review of the Educational and Training Services Available to the Handicapped in Hong Kong

The history of educational and training services for the handicapped in Hong Kong has been a chequered one, especially with regard to the mentally handicapped. The Mental Hospital Ordinance, section 3 (1936) ruled that mental defectives were not to be admitted to mental hospital unless clearly dangerous to themselves or others. Mentally defective was defined as someone "with unsound mind."

The sub committee of the Hong Kong Council of social Service on the Care of Mental Defectives compiled a report on the problems of mental deficiency in Hong Kong, and submitted the report to the government in 1955 recommending:

1. A home for persons with mental handicap should be established to house, initially 200 persons, with allowance for expansion
- 2 Two occupational centres be set up, one in Kowloon and one on Hong Kong Island.

At this time there were 19 voluntary institutions in Hong Kong caring for 182 people with mental handicap, and 341 mentally handicapped who had attended the out patient department of and had been discharged from the mental hospital in the previous ten years (Hilliard 1960)

The Joint Council for the Physically and Mentally Disabled was formed in 1957 and absorbed into the Hong Kong Council for Social services in 1966 and became its rehabilitation division, which to this day is responsible for the co-ordination of voluntary agencies providing education and training services for the handicapped in Hong Kong (Fang 1987). A list of agencies providing training and education for the physically and mentally handicapped is seen in Appendix I. A (Joint Council for the Physically and Mentally Disabled, Rehabilitation Division, 1989)

The Mental Health Ordinance (Hong Kong Government 1960) has the basic object of official care of persons who are mentally disordered. No provision was made in the ordinance for the mentally retarded, and so anyone not mentally disordered was normal Hilliard (1960) recommended that the government adopt the British classification of children with handicaps (H.M.S.O 1959) which drew a distinction between mildly handicapped children and severely handicapped in that the mild grade were considered to be educable. This was adopted by the government in 1960. The severely handicapped, especially those with medical complications were the responsibility of the Medical and Health Department. Educational and training services for the severely handicapped did not come into operation until 1964 when a group of parents decided to provide education and training for their own handicapped children in a church building. From this development the government set up a steering committee on services for the handicapped

The first Programme Plan for Rehabilitation Services (Hong Kong Government 1976) appeared as a green paper, and was an attempt to present an integrated and comprehensive picture of existing services for the handicapped and set long term goals and recommendations for the

future. A three grade system of classification of mental retardation was also recommended and put forward in the eventual white paper. A further recommendation was that the responsibility of education and training of all handicapped individuals should be transferred from the Social Welfare Department to the Education Department, and this also was put forward in the white paper.

The white paper (Hong Kong Government 1977) adopted the following policy objective:

"To provide such comprehensive education and training services as are necessary to enable disabled persons to develop their physical, mental and social capabilities to the fullest extent which their disabilities permit."

The publication of this white paper marked the first time that the Hong Kong Government had committed itself to long term planning in the field of training and education for the handicapped. The Rehabilitation Programme Plan (Hong Kong Government 1978) evolved with reviews each year to improve and update the services available to the handicapped.

APPENDIX II

APPENDIX II

Dental Health Care Services in Hong Kong

II.1. Public Dental Service

The government does not provide a comprehensive dental service for members of the public in Hong Kong. The public dental care services which do exist are mainly provided by the Department of Health. These include

II.1.1 The School Dental Service

This was introduced in 1980 for children entering primary schools, but has since been extended to cover all primary 1 to 6 school children. Each participant in the scheme pays HK\$10 (Hong Kong Dollars) per annum, and in return, they are provided with annual dental examinations, routine restorative and preventive care at government dental clinics. Usually this service is provided by dental auxiliaries under the supervision of a government dental officer. The government has no plans to extend this service to secondary school children.

II.1.2 Dental Services for Civil Servants and their Dependent

Under civil service regulations, serving and retired civil servants, together with their eligible dependent, are entitled, as part of their conditions of service, to receive full dental treatment at government dental clinics. This service is provided free of charge, except for prostheses, which are charged at specific rates. There are 43 government dental clinics throughout the territory.

II.1.3 Emergency Dental Services for the Public

Emergency dental treatment is provided free, to members of the public, at 12 of the government dental clinics. Services are limited to relief of pain and dental extraction. Longer term care and restorative services, such as provision of dentures, are not available.

II.1.4 Dental Services for Patients in Government Hospitals

Patients admitted into government hospitals who are in need of emergency dental treatment, or patients who are under the care of government doctors, and for whom dental care is considered an essential part of medical care, may receive limited services from the hospital's dental unit. There is no hospital dental service, as such, for the general public.

II.2. Private Dental Practice

II.2.1 General Dental Practitioners

Dental practitioners in the private sector charge on a fee for item basis or by the hour, and essentially serve the general public in terms of general dental health care.

II.2.2 Dental Specialists Working in the Private Sector

Every aspect of dental speciality is seen in the private sector, and charges are usually on a fee per item basis. Oral surgeons who work in the private sector register with one of the privately run hospitals for use of their facilities. Patients are charged a fee for service from the practitioner

and a separate fee for the use of the hospital bed and any hospital provided items and service, including food. Anaesthetic fees are also a separate item.

II.3. Others

II.3.1 Services Provided by the Prince Philip Dental Hospital Faculty of Dentistry, University of Hong Kong

The Prince Philip Dental hospital (P P D H), opened in 1981, is the sole dental teaching hospital in Hong Kong. Patients are primarily accepted for teaching purposes and are charged a small fee for registration and subsequent treatment. Limited emergency treatment, limited by the number of patients accepted, is provided to the public by a small number of Junior House Dental Officers (J.H.D O). Senior staff of the Faculty of Dentistry also provide specialist care on a private fee paying basis.

II.3.2 Services Provided by Voluntary Agencies

There are no accurate data available on the number of clinics or the scope of services provided by voluntary agencies in Hong Kong. Some charity organisations provide a limited dental service through a roster of voluntary dentists. Other organisations employ dentists to provide a reasonably full range of low-cost dental services to the public. There are at present 44 static or mobile clinics of this type in Hong Kong, providing some 60 dental chairs for such activities *. The fees charged by these clinics vary, but are generally lower than those charged in the private sector. Services of these organisations are often

targeted towards defined groups such as the handicapped, its own members or residents in one particular locality.

*** Department of Health, Hong Kong Government, 1993**

APPENDIX III

APPENDIX III

Definitions and Characteristics in Key Terms in the International Classification of Impairments, Disabilities and Handicaps (WHO 1980).

III.1 Handicap

Definition

In the context of health experience, a handicap is a disadvantage for a given individual, resulting from an impairment or a disability, that limits or prevents the fulfilment of a role that is normal (depending on age, sex, and social and cultural factors) for that individual.

III.1.1 Characteristics

Handicap is concerned with the value attached to an individual's situation or experience when it departs from the norm. It is characterized by a discordance between the individual's performance or status and the expectations of the individual himself or of the particular group of which he is a member. Handicap thus represents socialization of an impairment or disability, and as such it reflects the consequences for the individual - cultural, social, economic and environmental - that stem from the presence of impairment and disability.

Disadvantage arises from failure or inability to conform to the expectations or norms of the individual's universe. Handicap thus occurs when there is interference with the ability to sustain what might be designated as "survival" roles.

III.1.2 Impairment

Defintion:

In the context of health experience, an impairment is any loss or abnormality of psychological, physiological, or anatomical structure or function. (Note: "Impairment" is more inclusive than "disorder" in that it covers losses e g : the loss of a leg is an impairment, not a disorder)

III.2. Characteristics

Impairment is characterizes by losses or abnormalities that may be temporary or permanent, and that include the existence or occurrence of an anomaly, defect or loss in a limb, organ, tissue, or other structure of the body, including the system of mental function. Impairment represents exteriorization of a pathological state, and in principle it reflects disturbances at the level of the organ

III.3 Disability

Defintion:

In the context of health experience, a disability is any restriction or lack (resulting in impairment) of ability to perform an activity in the manner or within the range considered normal for a human being

III.3.1 Characteristics

Disability is characterized by excesses or deficiencies of customarily expected activity performance and behaviour, and these may be temporary or permanent, reversible or irreversible, and progressive or regressive. Disabilities may arise as a direct consequence of impairment or as a response by the individual, particularly psychologically, to a physical, sensory, or other impairment. Disability represents objectification of an impairment, and as such it reflects disturbances at the level of the person

Disability is concerned with abilities, in the form of composite activities and behaviours, that are generally accepted as essential components of everyday life. Examples include disturbances in behaving in an appropriate manner, in personal care (such as excretory control and the ability to wash and feed oneself), in the performance of other activities of daily living, and in locomotor activities (such as the ability to walk)

APPENDIX IV

APPENDIX IV

The Grading System of Mental Retardation in Hong Kong Review of Rehabilitation Programme Plan, 1984.

IV.1 Mild Grade (50 < I.Q. <70)

Individuals with this level of mental handicap can develop social and communication skills during the preschool period (ages 0-5 years), have minimal impairment in sensorimotor areas, and often are not distinguishable from normal children until a later age. By their late teens they can learn academic skills up to approximately primary five to six level, and, during the adult years they can usually achieve social and vocational skills adequate for minimum self support, but may need guidance and assistance when under unusual social or economic stress

IV.2 Moderate Grade (25 < I.Q. <50)

Individuals with this level of mental handicap, during the preschool years, can talk or learn to communicate, but they have only poor awareness of social conventions. They may profit from vocational training and can take care of themselves with moderate supervision. during the school age period they can profit from training in social and occupational skills, but are unlikely to progress beyond about primary level two in academic subjects. They may learn to travel alone in familiar places. During their adult years they may be able to contribute to their own support by performing unskilled or semi-skilled work under close

supervision in sheltered workshops. They need supervision and guidance under mild social and economic stress.

For the low functioning group during the preschool period, there is little evidence of poor motor development and little or no communicative speech. During the school age period they may learn to talk and can be trained in elementary hygiene skills. During their adult years they may be able to perform simple work tasks under close supervision.

IV.3 Severe Grade (I.Q. < 25)

During the preschool period, children with this level of mental handicap display minimal capacity for sensorimotor functioning. During the school age period, some further motor development may occur and children may respond to minimal or limited training in self care. Some speech and further motor development may take place during adult years, and limited self care may be possible in a highly structured environment with constant aid and supervision. They are generally unable to profit from vocational training, but some high functioning adults in this group may be able to perform simple work tasks under close supervision.

(H.K. Government, Review of Rehabilitation Programme Plan 1984)

APPENDIX V

APPENDIX V

Scales and Questionnaires Used in the Study

V.1 The Scale to Determine Attitudes Towards Disabled Persons

Code:

+3	Agree very much		-3	Disagree very much
+2	Quite agree		-2	Quite disagree
+1	Agree a little		-1	Disagree a little

			+3	+2	+1	-1	-2	-3
1.	The disabled should not be provided with a free public education.		-	-	-	-	-	-
2.	Disabled people are not more accident prone than other people		-	-	-	-	-	-
3	A disabled individual is not capable of making moral decisions.		-	-	-	-	-	-
4.	The disabled should be prevented from having children.		-	-	-	-	-	-

		+3	+2	+1	-1	-2	-3
5	The disabled should be allowed to live where and how they chose.	-	-	-	-	-	-
6	Adequate housing for the disabled is neither too expensive nor too difficult to build.	-	-	-	-	-	-
7.	Rehabilitation programmes for the disabled are too expensive to operate	-	-	-	-	-	-
8.	The disabled are in many ways like children	-	-	-	-	-	-
9.	The disabled need only the proper environment and opportunity to develop and express criminal tendencies.	-	-	-	-	-	-
10	Disabled adults should be voluntarily committed to an institution following arrest	-	-	-	-	-	-
11	Most disabled people are willing to work.	-	-	-	-	-	-

	+3	+2	+1	-1	-2	-3
12. Disabled individuals are able to adjust to life outside an institutional setting.	-	-	-	-	-	-
13. The disabled should not be prohibited from obtaining a driving license.	-	-	-	-	-	-
14. Disabled people should live with others of similar disability.	-	-	-	-	-	-
15. Group homes for the disabled should not be prohibited in residential districts.	-	-	-	-	-	-
16. The opportunity for gainful employment should be provided to disabled people	-	-	-	-	-	-
17. Disabled children in regular classrooms have an adverse effect on other children	-	-	-	-	-	-
18. Simple repetitive work is appropriate for the disabled.	-	-	-	-	-	-

		+3	+2	+1	-1	-2	-3
19.	The disabled show a deviant personality profile.	-	-	-	-	-	-
20	Equal employment opportunities should be provided to disabled people.	-	-	-	-	-	-
21.	Laws to prevent employers from discriminating against the disabled should be passed.	-	-	-	-	-	-
22.	The disabled engage in bizarre and deviant sexual activity.	-	-	-	-	-	-
23.	Disabled workers should receive at least the minimum wage established for their jobs.	-	-	-	-	-	-
24	Disabled individuals can be expected to fit into competitive society.	-	-	-	-	-	-

**V.1.1 The Scale to Determine Attitudes Towards Disabled Persons
(Chinese Version)**

代號： +3 非常同意 -3 非常不同意

+2 頗同意 -2 頗不同意

+1 少許同意 -1 少許不同意

	+3	+2	+1	-1	-2	-3
1) 不應提供免費教育與傷殘人仕。	-	-	-	-	-	-
2) 傷殘人仕不一定比常人容易發生意外。	-	-	-	-	-	-
3) 傷殘人仕對一些道德觀念沒有能力作出決定。	-	-	-	-	-	-
4) 他們應避免生育。	-	-	-	-	-	-
5) 他們有權選擇自己的居住地方及生活方式。	-	-	-	-	-	-
6) 一些適合傷殘人仕居住的樓宅並不需要大量金錢或困難去興建。	-	-	-	-	-	-
7) 復康計劃需花費大量金錢纔能運作。	-	-	-	-	-	-
8) 傷殘人仕很多時的舉動都頗像小孩子。	-	-	-	-	-	-
9) 他們只要有適合的機會或環境便會引發及表達他們的犯罪傾向。	-	-	-	-	-	-
10) 傷殘人仕被捕後應自願進入中心。	-	-	-	-	-	-
11) 大多數的傷殘人仕都願意工作。	-	-	-	-	-	-

	+3	+2	+1	-1	-2	-3
12) 他們在中心計劃之外，也可適應生活。	-	-	-	-	-	-
13) 他們不應被禁止獲取駕駛執照。	-	-	-	-	-	-
14) 傷殘人仕應聚居在一起。	-	-	-	-	-	-
15) 傷殘人仕宿舍不應被禁止設在住宅區內。	-	-	-	-	-	-
16) 傷殘人仕應給予機會去工作。	-	-	-	-	-	-
17) 傷殘兒童與普通兒童一起上課，對普通兒童構成不良影響。	-	-	-	-	-	-
18) 一些簡單，重覆性的工作都適宜傷殘人仕去做。	-	-	-	-	-	-
19) 他們的性格都異於常人。	-	-	-	-	-	-
20) 他們應享有同等的工作機會。	-	-	-	-	-	-
21) 應通過法例防止顧主歧視殘疾人士。	-	-	-	-	-	-
22) 他們的性生活或對性生活的看法也異於常人。	-	-	-	-	-	-
23) 傷殘人仕也應享有一定底薪的工資。	-	-	-	-	-	-
24) 傷殘人仕可以被預計去適應這個競爭的社會。	-	-	-	-	-	-

V.2 The Parental Attitude Scale

Code:

+3	Agree very much	-3	Disagree very much
+2	Quite agree	-2	Quite disagree
+1	Agree a little	-1	Disagree a little

	+3	+2	+1	-1	-2	-3
1. Parents should not consider themselves to blame for their child's handicap	-	-	-	-	-	-
2. In my experience, immediate relatives will readily accept a handicapped child within the family	-	-	-	-	-	-
3. Your child's handicap is a punishment for wrong doings of your ancestors.	-	-	-	-	-	-
4. Nothing can be done to make my handicapped child more normal	-	-	-	-	-	-
5. Handicapped children should be locked away, or tied up, at times when they are not at school/training centre.	-	-	-	-	-	-

	+3	+2	+1	-1	-2	-3
6. Handicapped children should be treated with kindness and understanding when they misbehave.	-	-	-	-	-	-
7. In my experience a handicapped child is a great burden to the family.	-	-	-	-	-	-
8. Parents of a handicapped child should not allow this to influence any decision to have or not to have more children	-	-	-	-	-	-
9. Handicapped children in a family have more attention than the other siblings.	-	-	-	-	-	-
10. A handicapped child brings shame and is embarrassing for the family.	-	-	-	-	-	-
11. Parents of handicapped children should be encouraged to help their child mix and integrate into normal society.	-	-	-	-	-	-

	+3	+2	+1	-1	-2	-3
12. Other children in the family will accept a handicapped sibling with love and understanding.	-	-	-	-	-	-
13 The presence of a handicapped child in the family is regarded as loss of face for the family.	-	-	-	-	-	-
14. It would be preferable for handicapped children to die at birth.	-	-	-	-	-	-
15. Handicapped offspring cause strain in marital relationships	-	-	-	-	-	-
16 It would be better if a handicapped child were taken from the family and placed permanently in a residential institution as soon after birth as possible.	-	-	-	-	-	-
17. Parents should not be concerned about others outside the family knowing that their child is handicapped.	-	-	-	-	-	-

	+3	+2	+1	-1	-2	-3
18 Handicapped people should be taken out and seen in public as often as possible.	-	-	-	-	-	-

V.2.1 The Parental Attitude Scale (Chinese Version)

代號 .	+3	非常同意	-3	非常不同意						
	+2	頗同意	-2	頗不同意						
	+1	少許同意	-1	少許不同意						
					+3	+2	+1	-1	-2	-3
1)		父母不應將孩子的傷殘歸咎自己。			-	-	-	-	-	-
2)		以你的經驗，近親更容易接受有缺陷的孩子。			-	-	-	-	-	-
3)		孩子的缺陷是祖先做錯事的懲罰。			-	-	-	-	-	-
4)		你認為再沒有其他方法可以使孩子較像正常人一點。			-	-	-	-	-	-
5)		當他不在學、訓練中心時，應將他關閉起來或鎖著。			-	-	-	-	-	-
6)		當他們做得不當，應抱以仁慈及諒解的態度。			-	-	-	-	-	-
7)		根據你的經驗，傷殘孩子是家庭的一個重擔。			-	-	-	-	-	-
8)		父母不應因為育有傷殘孩子，而影響他們的生育計劃。			-	-	-	-	-	-
9)		殘疾孩子，在家中應得到更多的照顧。			-	-	-	-	-	-

	+3	+2	+1	-1	-2	-3
10) 他們為家庭帶來羞恥。	-	-	-	-	-	-
11) 應鼓勵父母多些幫助殘疾孩子參與及融入正常的社會生活。	-	-	-	-	-	-
12) 家中其他孩子都應以愛心及諒解去接受他。	-	-	-	-	-	-
13) 家中有殘疾孩子是一種不光采的事。	-	-	-	-	-	-
14) 寧可他們一出世便夭折。	-	-	-	-	-	-
15) 殘疾人仕的婚姻通常都會有麻煩。	-	-	-	-	-	-
16) 他們出世後，便應離開家庭，永久住進一些為他們而設的宿舍。	-	-	-	-	-	-
17) 父母不應太著重別人知道你的孩子是傷殘的。	-	-	-	-	-	-
18) 當可能的話，應多些帶他們與人接觸及出外活動。	-	-	-	-	-	-

V.3 The Dental Practitioners Attitude Scale

Code:

+3	Agree very Much	-3	Disagree very much
+2	Quite agree	-2	Quit disagree
+1	Agree a little	-1	Disagree a little

		+3	+2	+1	-1	-2	-3
1.	I am very enthusiastic about treating handicapped patients in my practice.	-	-	-	-	-	-
2.	Expensive, specialised dental equipment is not needed to effectively treat the handicapped patient.	-	-	-	-	-	-
3.	It is not financially viable to treat handicapped patients in practice.	-	-	-	-	-	-
4.	The responsibility of providing dental treatment for the handicapped should lie with the government.	-	-	-	-	-	-
5.	All handicapped patients should be referred to a specialist centre for dental treatment.	-	-	-	-	-	-

	+3	+2	+1	-1	-2	-3
6. The effect of the physical presence of a handicapped person in my waiting room would probably not deter other patients from coming to my practice.	-	-	-	-	-	-
7. The physical appearance of a handicapped person would make it difficult for me to treat him or her.	-	-	-	-	-	-
8. It is the duty of dental practitioners to volunteer their services to institutions for the handicapped.	-	-	-	-	-	-
9. It would be of benefit to me and my practice to have further training in the treatment of the handicapped.	-	-	-	-	-	-
10. It would be difficult to keep ancillary staff if my practice accepted handicapped patients	-	-	-	-	-	-

V.3.1 The Dental Practitioners Attitude Scale (Chinese Version)

代號：	+3	非常同意	-3	非常不同意						
	+2	頗同意	-2	頗不同意						
	+1	少許同意	-1	少許不同意						
					+3	+2	+1	-1	-2	-3
1)		我十分熱心去治療傷殘人仕。			-	-	-	-	-	-
2)		並不需要昂貴及複雜之儀器去治療病人。			-	-	-	-	-	-
3)		並不經濟地去治療他們。			-	-	-	-	-	-
4)		治療他們的責任是落於政府。			-	-	-	-	-	-
5)		所有的傷殘人仕應呈交去專科醫生診治。			-	-	-	-	-	-
6)		傷殘人仕的出現並不影響在候診室的其他病人。			-	-	-	-	-	-
7)		傷殘人仕的體形令我十分困難地治療他們。			-	-	-	-	-	-
8)		牙科醫生是有責任和自願地去中心替他們治療。			-	-	-	-	-	-
9)		更加深入之訓練能令我及我的診所有好的益處去治療他們。			-	-	-	-	-	-

+3 +2 +1 -1 -2 -3

10) 這是一個困難去保留我的輔助人員如我去治療傷殘人仕。

- - - - -

V.4 Assessment and Dental Examination Form

Institution/Centre: _____

Name: _____ Age. yr _____ months _____

Sex. _____

Handicapping Condition: _____

Mental Retardation Grade. _____

Mobility. _____

Clinical Examination

Caries status and treatment need:

		15	14	13	12	11	21	22	23	24	25			
17	16												26	27

		45	44	43	42	41	31	32	33	34	35			
47	46												36	37

Plaque

13	12	11	21	22	23

Calculus

SUPRA

--	--	--	--	--

SUB

--	--	--	--	--

V.4.1 Child Assessment Coding

Handicapping Condition

	<u>Code</u>
Cerebral Palsy Only	01
Mental Impairment with Cerebral Palsy	02
Mental Impairment Only	03
Down Syndrome	04
Praeder Willy Syndrome	05
Autism	06
Friedrich's Ataxia	07
Muscular Dystrophy	08
Goldenhar Syndrome	09
Cornelia De Lange Syndrome	10
Spina Bifida	11
Cri Du Chat	12
Developmental Delay	13
Cardio Vascular Accident	14

Mental Retardation Grade

	<u>Code</u>
Normal	00
Mild	01
Moderate	02
Severe	03

Mobility

	<u>Code</u>
Walk Unaided	01
Walk Aided	02
Unable to Walk	03
Wheelchair	04

Institution Residency Status

	<u>Code</u>
Full Time Resident	01
Weekly Resident, Home at Weekends	02
Day Stay, Home at Night	03

V.5 Parental Interview Questionnaire

Section 1:

Personal Details

Family member interviewed _____

Marital Status of Parent. _____

Parental Education. Father____ Mother____

Father's Occupation. _____

Mother's occupation _____

Family Income HK\$ per month. _____

Family Religion: _____

Family Dwelling _____

Section 2:

Dental Questionnaire

1. Does the school/institution provide access to dental treatment? Yes____ No____

2. If yes:

Is this service provided by	Volunteer Dentists	_____
	Private Practice	_____
	Government Scheme	_____
	Others	_____
	(Tick one)	

3. When did your child last visit the dentist?

Less than one year ago	_____
More than one year ago	_____

Never _____
(Tick one)

4. Does your child attend a dentist on a regular basis? Yes____ No____
- Do you attend a dentist regularly? Yes____ No____

Dental Attenders

5. Where does your child go for dental care? Yes No
- | | | |
|-------------------------------|-----|-----|
| Government Clinic | ___ | ___ |
| Private Practice | ___ | ___ |
| Volunteer Dentist | ___ | ___ |
| Charity Clinic | ___ | ___ |
| Red Cross Clinic | ___ | ___ |
| Government Hospital | ___ | ___ |
| Prince Philip Dental Hospital | ___ | ___ |
| Other | ___ | ___ |

6. What type of treatment did your child have? Yes No
- | | | |
|-------------------------|-----|-----|
| Check up only | ___ | ___ |
| Prevention only | ___ | ___ |
| Fillings | ___ | ___ |
| Extraction | ___ | ___ |
| Fillings and Extraction | ___ | ___ |
| Other | ___ | ___ |

7. Has your child ever had a general anaesthetic for dental treatment? Yes__ No__

- 8 Was your child admitted to hospital for dental treatment? Yes__ No__
If yes:
9. What are your feelings regarding the treatment obtained:
Very satisfied ___ Satisfied ___ Unsatisfied__
Very unsatisfied___ Don't know ___
10. If you were unsatisfied or very unsatisfied with the treatment, give your reasons:

Non Attenders

11. Do you feel that dental advice should only be sought if your child has toothache? Yes__No__
12. Do you feel that dental care is important for your child? Yes__No__
13. If No , give reasons:
-

14. If Yes, Why have you not sought dental advice?

- | | | | |
|----|---|---|---|
| a. | Because of your child's handicap, no dentist will treat | — | — |
| b. | Treatment is too expensive | — | — |
| c. | No one is available to take your child to the dentist | — | — |
| d. | You do not wish people to see you with a handicapped child | — | — |
| e. | You feel the dentist will refuse to treat your child because of his/her handicap | — | — |
| f. | You will be embarrassed sitting in a waiting room with a handicapped child | — | — |
| g. | You feel it is the school/institution's responsibility to provide access to dental services | — | — |
| h. | You feel that the government should provide total health care for handicapped children | — | — |
| i. | You do not wish to be associated with your handicapped child | — | — |
| j. | Others. | — | — |
-

Section 3:

Personal Questionnaire:

15. Was the pregnancy full term? Yes___ No___
- 16: If No: How many months Premature___ Overdue___
17. Where was the child born
- | | | |
|--|----------------|---|
| | At home | — |
| | Hospital(Gov) | — |
| | Hospital(Priv) | — |
| | Clinic(Gov) | — |
| | Clinic(Priv) | — |
| | Abroad | — |
| | Other | — |
- 18 How did you learn your child was handicapped.
- | | | Yes | No |
|--|--------------------|-----|----|
| | From A Doctor | — | — |
| | Nurse | — | — |
| | Mid Wife | — | — |
| | Relative | — | — |
| | Friend | — | — |
| | Realised yourself | — | — |
| | Other | | |

19 What did you feel when you first realised your child was handicapped?

	Yes	No
Nothing	___	___
Shock	___	___
Confusion	___	___
Disbelief	___	___
Revulsion	___	___
Disappointment	___	___
Others		

20. Were you told the cause of the handicap Yes ___ No ___

21. If No: Did you ask? Yes ___ No ___

22. What member of the family looks after the handicapped child for most of the time? _____

23. If it is not the mother. Why?

Poor health	_____
Has to work	_____
Has rejected the child	_____
The child is too difficult to manage	_____
Others	_____

24 Are you concerned about your child's future ?

Not at all _____

A little _____

Is a major worry _____

It causes family conflict _____

Others _____

25. What sort of future do you think your handicapped child has?

Poor___

Mediocre___

Good___

26. Have you planned for your child's future Yes ___ No__

27. If yes: In what way?

V.5.1 Parental Interview Questionnaire (Chinese Version)

第一部份：
個人資料

- 1) 被訪者與該孩子的關係： _____
- 2) 孩子父母的婚姻狀況： _____
- 3) 父母之教育水平。 _____
- 4) 父親之職業： _____
- 5) 母親之職業。 _____
- 6) 家庭每月收入。 _____
- 7) 宗教信仰： _____
- 8) 住所類別： _____

第二部份：
牙科問卷

- 1) 貴子女就讀之學院/學校有否提供
貴子女參與牙科保健計劃之服務？
是 _____
否 _____

- 2) 如果有的話，這項服務是：
自願牙醫團體 _____ 提供
私人實習牙醫 _____
政府保健計劃 _____

紅十字會 _____
 聖約翰救傷隊 _____
 其它 _____

3) 貴子女最近一次接受檢查的時間是： 過往一年內 _____
 一年之前 _____
 從未 _____

4) i) 貴子女是否定期接受牙醫診治？ 是 _____
 否 _____

ii) 你是否定期接受牙醫診治？ 是 _____
 否 _____

接受牙科服務者

5) 貴子女前往接受牙科服務之機構是： 政府診所 _____
 私人實習所 _____
 慈善團體診所 _____
 紅十字會 _____
 政府醫院 _____
 菲臘牙科醫院 _____
 其它 _____

6) 貴子女所接受之牙科服務是： 牙齒檢查 _____
 預防蛀牙 _____
 補牙 _____
 脫牙 _____
 補牙與脫牙 _____
 其它 _____

7) 貴子女是否曾接受全身麻醉，基於牙齒護理的需要？

是 _____
否 _____

8) 貴子女曾入住醫院接受牙科護理？

是 _____
否 _____

9) 你對曾得到的牙科服務有何意見？

非常滿意 _____
滿意 _____
不滿意 _____
非常不滿意 _____
不滿意 _____
不清楚 _____

10) 假若是不滿意此項服務，請列舉原因

不接受牙科服務者

11) 你是否認為只在貴子女患牙痛時，纔需要接受牙科檢查？

是 _____
否 _____

12) 你是否感到牙科護理對貴子女是很重要？

是 _____
否 _____

13) 如果不是，請列舉原因。

14) 如果是的話，為何尋找牙科服務？

i) 因貴子女是傷殘者，不會接受到牙醫的幫助？

是 _____

否 _____

ii) 因牙科護理是昂貴的支出？

是 _____

否 _____

iii) 因貴子女是傷殘者，交通不便？

是 _____

否 _____

iv) 沒有空餘的時間攜同子女接受服務？

是 _____

否 _____

v) 不願意讓他人接觸傷殘子女？

是 _____

否 _____

vi) 你認為醫生不願意接受傷殘病人？

是 _____

否 _____

vii) 感到異常尷尬，當在候診室與傷殘子女一起的時候？

是 _____

否 _____

viii) 認為子女牙科護理是學校的責任？

是 _____

否 _____

ix) 認為政府需要提供傷殘兒童所有的牙科保健服務？

是 _____

否 _____

x) 你不願意陪同或照顧你的傷殘或弱智子女？ 是 _____
否 _____

xi) 其他 _____

15) 懷孕週期是否正常： 是 _____
否 _____

16) 如不正常，多少個月。 早產 _____
延遲 _____

17) 出生地點： _____

18) 你如何知道孩子是傷殘的？

	是	否
經醫生診斷	_____	_____
自己發現	_____	_____
由護士告知	_____	_____
由助產士告知	_____	_____
經朋友轉告	_____	_____
親戚	_____	_____
其他	_____	_____

19) 當你知道孩子是傷殘時，你的感覺是：

	是	否
若無其事	_____	_____
非常激動	_____	_____
神智混亂	_____	_____
不肯相信	_____	_____
感到厭惡或嫌棄	_____	_____
失望	_____	_____
其他	_____	_____

- 20) 他們有否告知你孩子傷殘的原因？
- 有 _____
否 _____
- 21) 如沒有，你有否查問？
- 有 _____
否 _____
- 22) 大部份時間是由誰來照顧孩子？
- _____
- 23) 如非母親照顧，為什麼？
- 健康不佳 _____
需要工作 _____
對他反感 _____
孩子太難管教 _____
其他 _____
- 24) 你關注孩子的將來嗎？
- 沒有 _____
少許 _____
非常關注 _____
他令到家庭出現糾紛 _____
其他 _____
- 25) 你感到他的將來會是
- 灰暗 _____
普通 _____
會好的 _____
- 26) 你有否為孩子計劃過將來？
- 有 _____
否 _____

27) 如有，在那一方面？

V.5.2 Parental Questionnaire Coding

Family Member Interviewed

	<u>Code</u>
Mother	01
Father	02
Brother	03
Sister	04
Grand Mother	05
Grand Father	06
Other	07

Marital Status

	<u>Code</u>
Married	01
Single	02
Divorced	03
Separated	04
Widow	05

Parental Education

	<u>Code</u>
None	00
Primary	01
Secondary (not completed)	02
Secondary (completed)	03
Tertiary (not completed)	04
Tertiary (completed)	05

Parental Occupation

Definition:

The kind of work done during the reference period by a person employed (or performed previously by the unemployed) The classification coding follows the major groups indicated in the International Standard Classification of Occupation.

Code 01

Professional, technical related workers - Includes qualified professional scientists, doctors, dentists, architects, engineers, surveyors, marine and aviation officers and engineers, university academic staff, qualified teachers, system analysts and computer programmers, lawyers, accountants, members of religious orders, writers, artists, sportsmen librarians, social workers, nurses and other paramedical workers, other technicians.

Code 02

Administrative and managerial workers - Includes administrative officers in government service, consular staff, directors, managers and working proprietors (except wholesale and retail trade, import and export, catering and lodging services) in industry, commerce, transport and services

Code 03

Clerical and related workers - Includes executive officers in government service, stenographers, and typists, punching and computing machine operators, book-keepers and clerks of any kind, transport conductors, postmen, telephone operators, ship's radio officers and flight radio operators.

Code 04

Sales workers - Includes managers and working proprietors in wholesale and retail, import and export trade, sales supervisors, salesmen, shop assistants and hawkers.

Code 05

Service workers - Includes managers and working proprietors of catering and lodging services, hotel and domestic staff, building caretakers, laundry workers, barbers and hairdressers, police and other disciplined services, tourist guides and other service workers.

Code 06

Agricultural workers and fisherfolk - Includes master farmers, farm hands, gardeners in parks, master fishermen, fish farmers and oyster culturists.

Code 07

Production and related workers, transport equipment operators and labourers - Includes foremen and supervisors in manufacturing and construction industries, miners and quarrymen, metal and chemical processors, food and beverage processors, tobacco workers, textile workers, tailors and other clothing workers, shoe makers and other leather workers, blacksmiths, tool makers, fitters and machinists, radio and electrical workers, goldsmiths and jewellers, glass and pottery workers, rubber and plastic product workers, printing and painting workers, musical instrument makers and other production workers, bricklayers, carpenters and other construction workers, stationary engine operators, hand packers, dockers and loaders, riggers and crane operators, seamen, drivers and lighthouse operators

Code 08

Armed forces and unclassified - Includes members of the armed forces, persons in an occupation inadequately described or unclassified

Monthly Household Income HK\$

	<u>Code</u>
0 - 1,999	01
2,000 - 3,999	02
4,000 - 5,999	03
6,000 - 7,999	04
8,000 - 9,999	05
Over 10,000	06

Child's Birthplace

	<u>Code</u>
Government Clinic	01
Government Hospital	02
Private Clinic	03
Private hospital	04
Charity Clinic	05
Own Home	06
Others	07

Family Religion

	<u>Code</u>
None	00
Christian	01
Roman Catholic	02
Buddhist	03
Taoist	04
Muslim	05
Others	06

V.6 Dental Practitioners Questionnaire

1. Sex Male__ Female__
2. Age Yr __ Months__
3. Type of Practice General Practice ____
Specialist ____
4. Qualifications Basic ____
Basic & Post Grad ____
5. Where was your basic qualification obtained?
e.g. Australia etc. _____
6. Year of Qualification _____
7. How many handicapped patients have attended your practice
in the last year? None ____
1 up to 5 ____
5 up to 10 ____
over 10 ____
8. Is your practice on Ground Flr ____
1st Flr ____
2nd Flr or above__
9. Do you volunteer your services to any institution dealing
with handicapped persons? Yes__ No__

10. Is any one in your immediate family handicapped?

Yes__

No_

V.6.1 Dental Practitioners Questionnaire (Chinese Version)

- | | | |
|------------------------|-------|-------|
| 1) 性別 | 男 | 女 |
| | _____ | _____ |
| 2) 年齡 | 年 | 月 |
| | _____ | _____ |
| 3) 診所性質 | 普通全科 | _____ |
| | 專科 | _____ |
| 4) 執業資格 | 基本學位 | _____ |
| 5) 在何處取得執業資格？例如：英國、澳洲等 | _____ | |
| 6) 於哪一年執業？ | _____ | |
| 7) 在過去一年來，你治療過多少傷殘人仕？ | 沒有 | _____ |
| | 一至五個 | _____ |
| | 五至十個 | _____ |
| | 超過十個 | _____ |
| 8) 你的診所設置於 | 地下 | _____ |
| | 一樓 | _____ |
| | 二樓或以上 | _____ |

9) 你有沒有參與自願團體去服務傷殘人仕？

有	_____
沒有	_____

10) 你有沒有一位近親是傷殘的？

有	_____
沒有	_____

V.6.2 Dental Practitioner Questionnaire, Coding

Country of Qualification	<u>Code</u>
Hong Kong	01
United Kingdom	02
Australia	03
U.S A.	04
Taiwan	05
Philippines	06
Canada	07
Burma	08
New Zealand	09
Singapore	10
Peoples Republic of China	11

APPENDIX VI

APPENDIX VI

Construction, Scoring and Reliability of the Scales Used in the Study.

VI.1 The Scale to Determine Attitudes Toward Disabled Persons

The Scale to Determine Attitudes Toward Disabled Persons (SADP) is a 24 statement, self administered Likert type scale. It was devised by Antonak (1982), adapted and developed from the Attitude Toward Disabled Persons Scale (Yuker et al 1960,1966, Shaw et al 1967).

VI.1.1 The Construction of the SADP

There is a slight difference in the construction of the SADP to that of the classic Likert type scale in that there are six response categories with the omission of the "undecided" category. These categories are.

Strongly Agree	Quite Agree	Agree a Little
Strongly Disagree	Quite Disagree	Disagree a Little

Of the 24 statements, 12 are worded so that to strongly agree indicates a favourable attitude to the statement, and 12 are worded so that to strongly agree indicates an unfavourable attitude towards the statement, and vice versa.

VI.1.2 Scoring the SADP

Each response category is given a numerical value. The response categories are scored as follows:

To strongly agree with a statement, a score of	+3 is given
To quite agree, a score of	+2 is given
To agree a little, score of	+1 is given
To disagree a little, a score of	-1 is given
To quite disagree, a score of	-2 is given
To strongly disagree, a score of	-3 is given

When the respondent's scores are added algebraically, it is quite possible to obtain a negative score total. Whilst this is not incorrect, it is inconvenient, and so in order to eliminate this possible negative score, a mathematical "trick" is employed

The scale is looked at as though the respondent had the most unfavourable attitude towards disabled persons. The respondent would disagree strongly with all favourable statements and agree strongly with all unfavourable statements. This gives a "worst case" scenario score of 0. This is hypothetical as in the normal course of events this would not happen, leaving the possibility of a negative score.

To eliminate this:

the signs of the scores of the statements eliciting a negative response in this "worst case" scenario, are reversed. i.e. -3 would become +3. This means that:

1. The signs of the scores to statements numbered 2, 5, 6, 11, 12, 13, 15, 16, 20, 21, 23 and 24 are reversed

2. The scores are now added algebraically, which in this "worst case" scenario, would come to 72
3. The sign of the total is reversed, 72 becomes -72.
4. A constant is now added.

A constant is now added to this score. The constant is dependent upon the number of statements in the scale and is the product of this $\times 3$. For the SADP this constant is $3 \times 24 = 72$. The "worst case" scenario is still 0, but the possibility of negative total scores has been eliminated, making the scale more meaningful and easier to interpret. All respondents total scores are calculated in this way. The "best case" scenario would be 144. The range of the SADP is therefore 0 - 144, and all total scores will lie between these values. The interpretation being that the higher the score, the more favourable the attitude of the respondent is toward disabled persons, but, more importantly, the position of the individual's score on a percentile curve of the group tested.

VI.1.3 Scale Reliability

Research based on measurement and scales must be concerned with the reliability of the measurement and the scale. The best way to determine how accurate a measurement is, is to make two independent measurements using the same subjects, and compare them. However, it is usually difficult to recall respondents to repeat a test, enthusiasm for the test may have waned and the test not taken seriously. In these circumstances a reliability coefficient is calculated using a one time result

A reliability coefficient demonstrates if a test designer was correct in expecting a certain collection of items to give interpretable statements about individual differences (Kelly 1942).

The a reliability coefficient, devised by Chronbach (1951) is widely used in sociological research. It utilises the variance of item scores, weighted, and the variance in total test scores, in the following formula:

$$\alpha = \frac{n}{n - 1} \times \frac{V_1}{(1 - V_t)}$$

Where V_1 is the variance of the item scores, and V_t the variance of the test scores. The formula reduces to 0 when all items are 1 or 0. The maximum value of α is 1, and the nearer the α value is to 1, the more reliable the test instrument is

VI.1.4 Reliability of the SADP

The reliability of the SADP has been tested on Chinese respondents in the USA (Chan et al 1984,1988), but it was felt that Chinese respondents in Hong Kong may respond differently to the scale. The reliability was tested using a sample of undergraduate students from the University of Hong Kong.

VI.1.4.1 Material and Method

A best Chinese translation of the scale was produced by translating the English version into Chinese, translating back into English and then back into Chinese. There are many verbal dialects in the Chinese language, all distinctly different from each other. Written Chinese is, however, universally the same for all dialects.

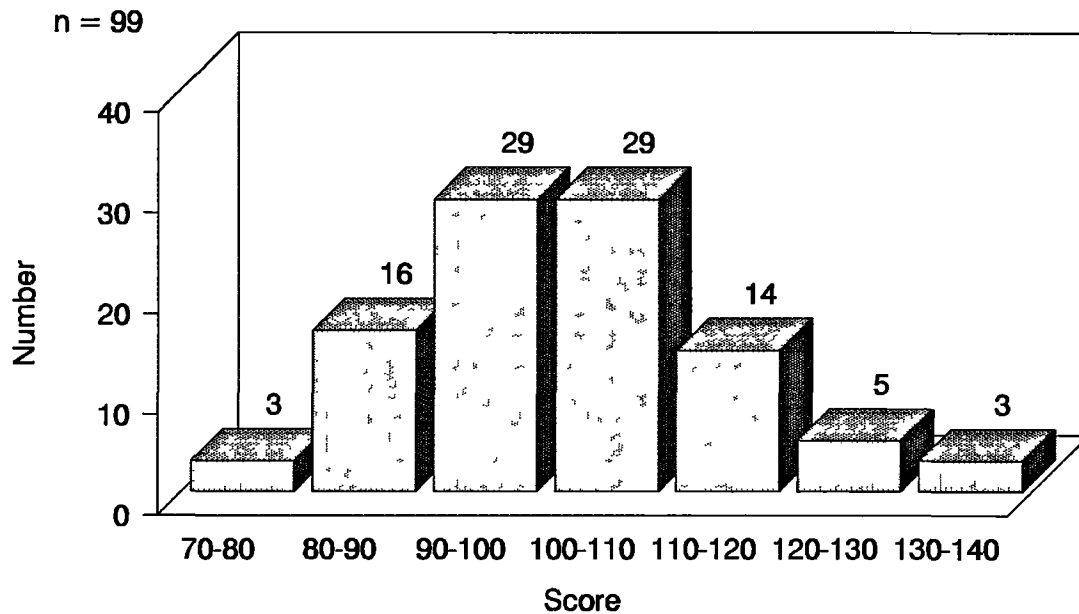
This best Chinese translation was distributed to ninety nine first year undergraduate students of the University of Hong Kong who were taking psychology as part of their course, but not as their major. They were asked to complete the scale and comment on the translation. Fifty male and forty nine female students took part in the reliability exercise.

VI.1.4.2 Results

The mean age of the students was 20.2 years (S.D. 0.97) with an age range of 18 to 23 years. All participants were ethnic Chinese from and living in Hong Kong.

The score data for male and female students are seen in Table VI.1 and Table VI.2.

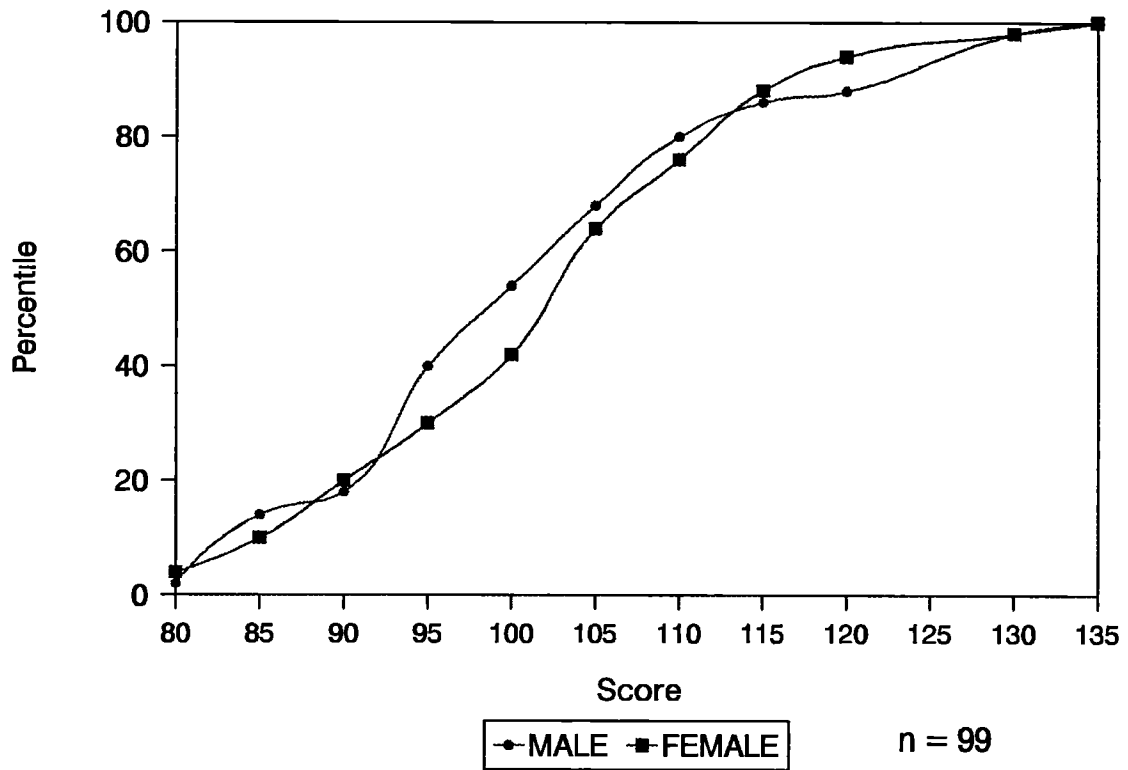
The SADP scores for both male and female participants were normally distributed as seen in Fig VI.1.

Fig VI.1. Student SADP Score Distribution

The percentile curves for male and female scoring, seen in Fig VI.2, shows that there is no sexual dimorphism of attitude between male and female respondents.

The a coefficient for male and female scores together was 0.73, indicating that the SADP is a reliable instrument in its translated form. A Chronbach's α coefficient greater than 0.6 is deemed to indicate sufficient reliability.

Fig VI.2. M/F Students' SADP Score Percentile Curves



VI.2 The Parental Attitude Scale

The scale consists of an 18 statement, Likert type scale. The 18 statements were derived from a pool of statements relative to the objectives of the study. Also, from the current literature, it was found that there have been only two relevant studies recently in Hong Kong (Tang et al 1976, Chan 1988). Questionnaires from these studies were looked at and suitable questions incorporated in the scale. The scale, and its Chinese translation, is seen in Questionnaire Appendix V.

Of the 18 statements, nine are worded so that to strongly agree indicates a favourable response, and nine are worded so that to strongly agree indicates an unfavourable response. The response categories for the scale are the same as those for the SADP, with numerical value equivalents the same also

VI.2.1 Scoring of the Parental Attitude Scale

The scoring is similar to that of the SADP. In order to eliminate a negative total score the scoring procedure is as follows:

1. The signs of the responses to statements 1, 2, 6, 8, 9, 11, 12, 17, and 18 are reversed
2. The scores are added algebraically, which in this "worst case" scenario is 54.
3. The total score sign is reversed.
4. A constant of 3 x the number of statements is added, i.e. 54

The resulting "worst case" scenario score is 0 and the "best case" scenario score is 108. All individuals are scored this way and the score will fall between a range of 0 - 108. The nearer the score is to 108, the more favourable is the parental attitude towards the handicapped offspring in the family.

VI.2.2 Reliability of the Parental Attitude Scale

For the purpose of reliability, a Chronbach's α reliability coefficient was calculated on a sample of parents with adult mentally and physically handicapped siblings.

VI.2.2.1 Material and Method

The best Chinese translation of the scale was given to 97 parents of mentally and physically handicapped adults, and they were asked to respond to the 18 statements, and comment on the translation. The parents were seen at 2 institutions for the adult mentally and physically handicapped, where their siblings were being trained.

The majority of the respondents were the mothers of the handicapped individuals as seen in Table VI 3

Table VI.3: Parent Respondents to the Parental Attitude Scale

Respondent	Number	%
Mother	79	81.4
Father	18	19.6
Total	97	100.0

VI.2.2.2 Results

The parental attitude scale scores were normally distributed as seen in Fig VI.3 and are tabulated in Table VI.4.

The reliability coefficient was calculated for the scale, and the a coefficient was found to be 0.77, indicating a reliable instrument in its translated form.

Fig VI.3. Parental Attitude Scale Score Distribution

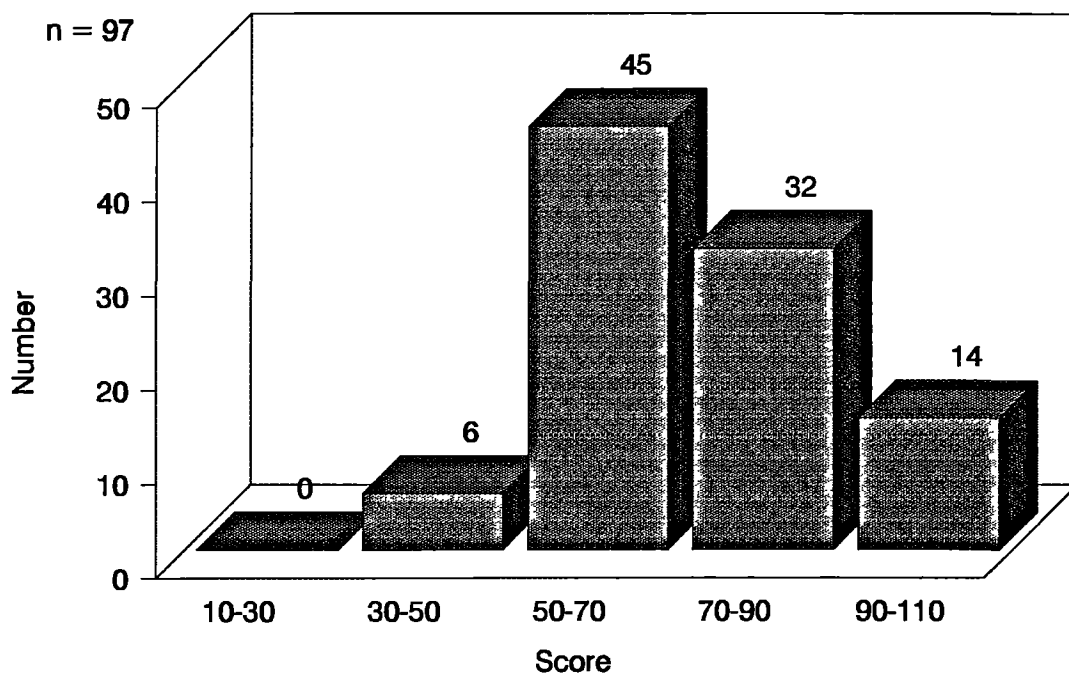


Table VI.4: Parental Attitude Scale Scores

	Scale Item Number																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
01	-2	2	-2	2	-3	2	2	3	-1	1	2	2	-2	-3	2	2	1	2	66
02	1	1	-1	-2	1	3	2	-1	2	-1	2	2	-1	-3	1	1	2	2	71
03	-2	3	-3	3	-3	3	3	-3	3	-3	3	3	-1	3	3	-3	3	3	71
04	-1	3	-3	3	-3	3	-1	-2	2	-2	2	3	-3	-2	-3	-3	-3	3	81
05	0	-1	3	-1	-3	3	3	-3	3	3	3	1	-2	3	3	3	3	3	54
06	2	-2	1	2	-2	1	2	2	2	2	2	-2	1	-3	2	2	1	3	56
07	-1	-2	-2	3	-2	2	3	2	2	2	1	-1	2	-2	3	3	-2	2	47
08	1	-2	1	-1	1	2	2	-1	1	1	1	-2	1	1	1	1	1	2	49
09	1	2	1	2	-3	3	3	-3	3	-3	3	3	-3	1	2	2	3	3	70
10	-2	-3	-2	2	-2	2	3	-3	2	2	2	-2	2	-3	-2	1	2	2	53
11	-2	2	2	3	-2	3	3	-3	2	3	2	-2	3	3	3	3	2	3	40
12	2	2	1	1	2	-1	2	2	2	2	2	2	2	1	2	2	2	2	54
13	1	1	1	2	1	1	2	1	1	1	2	1	2	1	3	2	1	2	50
14	-2	-3	-3	3	-3	3	1	1	3	2	-1	-2	1	3	3	3	-3	-2	38
15	2	-1	1	-1	-2	2	1	3	1	2	2	1	2	3	1	3	3	3	60
16	2	2	-2	2	2	-2	2	2	2	-2	2	2	2	-2	2	1	2	2	63
17	1	2	1	1	-1	2	1	1	2	1	1	2	2	1	-2	2	-1	2	60
18	3	3	-3	2	-3	3	3	-1	3	1	3	3	2	-2	3	3	2	3	71
19	0	2	-1	-2	-1	-2	1	-2	1	1	1	2	-1	1	-1	1	1	2	61
20	-2	1	-2	2	-2	2	2	2	2	-2	2	2	-2	-2	2	-2	2	2	73
21	0	2	-3	2	-2	2	-1	3	2	-2	3	2	-3	-2	-3	3	3	3	85
22	3	3	-3	3	-3	3	3	-3	3	2	2	3	-3	2	-2	3	3	3	72
23	-1	2	-1	-1	-1	2	1	-2	2	2	1	1	1	2	-1	-2	1	2	62
24	2	-2	-2	2	1	2	2	-2	2	1	2	2	1	2	2	-2	-1	2	54
25	2	2	-1	-1	1	1	2	1	2	2	1	1	1	2	-2	1	1	1	61
26	2	2	-2	3	-2	2	-1	-2	-2	2	2	1	-2	-1	-2	3	3	3	67
27	1	1	1	-1	1	1	1	1	1	1	1	1	1	2	1	1	2	1	56
28	3	3	-3	3	-3	3	3	3	3	-3	3	3	-3	-3	3	3	3	3	84
29	-2	1	-2	2	2	2	-2	-1	2	2	2	-1	-2	2	1	-2	2	2	60
30	-1	-2	-2	2	3	3	-1	3	1	1	2	1	2	1	-3	3	3	-2	56
31	-2	2	2	2	2	2	-2	-2	-1	2	2	2	2	-2	2	2	1	1	51
32	2	1	-1	-1	-1	1	1	1	2	1	2	-1	1	2	1	1	1	2	61
33	2	1	-1	-1	-1	1	1	1	2	1	2	-1	1	2	1	1	1	2	61
34	3	1	-3	3	-3	3	3	1	3	-3	3	3	-3	-2	3	-2	3	3	84
35	-2	2	-1	3	3	3	3	-3	3	3	3	3	-3	3	-3	3	3	3	58
36	-2	-1	-2	-1	-1	-2	2	-2	2	2	-1	1	1	-2	-1	2	1	-1	49
37	2	2	1	2	-1	2	2	2	-2	1	-2	1	1	1	1	2	2	2	53
38	2	-1	-1	-2	1	-2	1	2	1	-2	1	1	-2	1	1	1	1	1	62
39	-2	2	-3	3	3	3	-3	3	3	3	3	3	-3	3	3	3	3	3	66
40	-2	-3	-3	3	2	3	3	2	3	2	2	2	1	-2	2	2	1	2	54
41	-1	2	2	-2	-2	3	3	3	2	1	1	2	-2	1	2	2	1	2	64
42	-2	1	1	2	-2	-1	1	2	2	-2	1	1	-2	-2	1	2	2	2	63
43	-2	-3	-3	3	2	3	3	2	3	2	2	2	1	1	2	2	1	2	51
44	-2	2	-2	3	-2	2	1	2	3	2	2	2	1	2	2	-2	2	2	64
45	-2	2	1	3	-2	2	3	-1	2	-3	3	2	-2	3	-3	3	3	2	65
46	3	3	-3	-3	-3	3	1	3	3	1	3	3	1	-3	-1	3	3	3	88
47	3	3	-3	-2	-3	3	2	3	3	1	3	3	1	-3	-3	3	3	3	88
48	3	3	-3	-3	-3	3	2	3	3	1	3	3	1	-3	-2	3	3	3	88
49	3	2	-3	-3	-3	3	-1	3	3	-1	3	3	-1	-3	-2	3	3	3	94
50	3	3	-3	-3	-3	3	3	-3	3	2	3	3	1	-3	-2	3	3	3	80

Table VI.4: Parental Attitude Scale Scores (Continued)

	Scale Item Number																		Total
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
51	3	3	-3	2	3	3	-3	3	3	-3	3	3	-3	-3	-3	3	3	3	97
52	-3	2	-3	-3	-3	3	-2	3	3	2	3	3	2	-3	-2	3	3	3	83
53	3	3	-3	-3	-3	3	2	3	3	-3	3	3	-3	-3	-2	3	3	3	96
54	3	2	-3	-2	-2	3	2	3	3	1	3	3	1	-3	-2	3	3	3	85
55	3	2	-3	-3	-3	3	1	3	3	-1	3	3	1	-3	-2	3	3	3	90
56	3	3	-3	-2	-2	3	2	-3	3	2	3	2	2	-3	1	3	3	3	74
57	3	3	-3	-3	-3	3	-3	3	3	-2	3	3	-2	-3	-3	3	3	3	100
58	3	3	-3	-3	-3	3	-3	3	3	-2	3	3	-2	-3	1	3	3	3	96
59	3	3	-3	-2	-3	3	1	3	3	1	3	3	-1	-3	-2	3	3	3	90
60	3	3	-3	-3	-3	3	2	3	3	-2	3	3	-2	-3	-2	3	3	3	94
61	2	-2	2	1	-3	3	2	3	2	-3	3	-2	1	3	2	-3	3	1	65
62	2	-2	-1	1	1	2	2	-1	1	3	3	2	2	2	2	1	3	2	53
63	-3	3	-2	-3	-3	-2	1	3	3	-3	3	3	-2	-3	-3	3	3	3	85
64	3	3	2	3	-3	3	3	3	3	-3	2	3	-3	3	3	3	2	3	71
65	3	1	1	-1	3	3	-1	1	3	-3	3	-1	-1	-1	1	3	3	3	72
66	-2	1	2	-3	-3	3	3	-3	3	2	2	-1	2	-2	-3	3	3	2	61
67	3	2	-3	-3	-3	3	3	-3	3	2	2	2	3	3	-3	3	2	3	69
68	3	3	-3	3	-3	2	3	3	2	-3	3	3	-2	-3	-3	3	3	3	87
69	3	3	-3	3	-3	2	3	3	3	-3	3	3	-3	-3	2	-3	-3	3	84
70	3	3	-3	-1	1	3	2	-1	3	2	3	2	2	-2	2	3	3	3	70
71	3	2	-3	-2	-2	3	-2	3	3	-2	3	3	-2	-3	-2	3	3	3	95
72	3	2	-3	-2	-2	3	1	3	3	1	3	2	1	-3	-1	3	3	3	84
73	3	2	-3	-2	-3	3	1	3	3	-3	3	3	-3	-3	-2	3	3	3	95
74	3	2	-3	-3	-2	3	2	3	3	-3	3	3	-3	-3	-2	2	3	3	95
75	3	2	-3	-3	-3	3	2	3	3	2	3	3	1	-3	1	3	3	3	83
76	3	3	-3	-3	-3	3	3	3	3	-3	2	3	-3	-3	-2	3	3	2	93
77	3	3	-3	-3	-3	3	-3	3	3	-3	2	3	-3	-3	-2	3	3	3	100
78	3	3	-3	-2	-3	3	3	3	3	-3	2	3	-3	-3	-1	3	-3	-2	81
79	2	3	-3	-1	2	1	3	2	3	2	3	2	1	2	-3	3	3	2	69
80	3	1	-3	-3	-3	3	3	2	3	-3	2	3	-3	-3	-1	3	3	3	90
81	3	3	-3	-3	-2	3	3	2	3	-3	-2	3	-3	-3	-3	3	3	-2	84
82	-2	2	2	3	-3	3	2	3	3	2	1	1	2	1	3	3	2	-1	51
83	3	-3	2	-2	-3	3	3	-2	3	3	2	1	3	3	3	3	3	3	52
84	3	3	-3	-3	3	3	3	3	3	-3	-2	2	-3	-3	-3	3	3	-3	78
85	-3	2	-3	-3	-3	-2	3	2	3	-3	3	2	-3	-3	-3	3	3	3	82
86	-2	2	-3	3	-1	2	1	3	3	3	3	2	3	3	3	2	3	2	58
87	-3	3	-3	-3	-3	3	3	3	3	-3	-2	3	-3	-3	-3	3	3	-2	80
88	1	1	-3	3	3	2	3	3	3	2	2	1	1	1	1	3	2	1	56
89	3	-2	-3	-3	-2	3	3	3	3	-3	3	-2	-3	-3	-3	3	3	2	84
90	3	2	1	1	2	3	3	1	3	2	3	3	3	-3	3	-3	-2	3	64
91	-1	-2	1	1	-2	1	3	3	2	3	2	-2	3	3	2	3	-2	3	41
92	3	3	-3	3	-3	3	3	-3	3	3	3	3	3	-3	3	-2	3	3	71
93	2	2	-3	-1	2	2	-2	2	3	1	-2	2	-1	-3	-2	2	-1	-2	69
94	3	3	-3	3	1	-2	-2	2	3	-3	1	3	-3	-3	3	2	-1	-2	69
95	2	-2	1	1	2	2	3	-2	3	3	3	2	1	3	-3	3	3	3	54
96	3	-3	-3	-2	2	3	3	3	3	1	2	-3	1	-3	-1	3	3	3	67
97	2	2	1	2	-1	-1	1	2	1	1	2	2	-1	-1	-2	-2	-2	2	66

VI.3 Dental Practitioners Attitude Scale

The scale is a 10 statement Likert type scale of similar design to the SADP with identical response categories.

Of the 10 statements, 5 are worded so that to strongly agree indicates a favourable response, and 5 are worded so that to strongly disagree indicates an unfavourable response, and vice versa.

The statements used for the scale were taken from a number of statements dental practice and the treatment of mentally and physically handicapped in Hong Kong. A recent study, with relevance to this study, (Bedi et al 1989) was looked at and statements incorporated into the scale. The scale is seen in Questionnaire Appendix V.

VI.3.1 Scoring of the Dental Practitioners Scale

The scoring of the scale is similar to that of the other scales used in the study. In order to eliminate the possibility of a final negative score, the scoring procedure is as follows.

1. The signs of the responses to statements 1, 2, 6, 8 and 9 are reversed.
2. The scores are added algebraically.
3. The total score sign is reversed.
4. A constant of $3 \times$ the number of statements is added. This constant is 30 in this case.

This scoring will give a "worst case" scenario score of 0, and a "best case" scenario score of 60. The score range of the scale is 0 - 60, and the nearer the score is to 60, the more favourable the practitioner's attitude is.

VI.3.2 Reliability of the Dental Practitioners Attitude Scale

Chronbach's α reliability coefficient was calculated for the scale from a sample of General Dental Practitioners taken from members of the Hong Kong Dental Association.

VI.3.2.1 Material and Method

The first 100 dental practitioner respondents in the main study were used for reliability testing. The first 100 were analysed for score distribution and a Chronbach's α coefficient calculated.

VI.3.2.2 Results

The scores were normally distributed and the Chronbach's α coefficient for the scale was 0.67, indicating a reliable instrument. The score distribution is seen in Fig VI.4 and the score percentile curve is seen in Fig VI.5. The raw scores are tabulated in Table VI.5

Fig VI.4. Dental Practitioners Attitude Scale Score Distribution

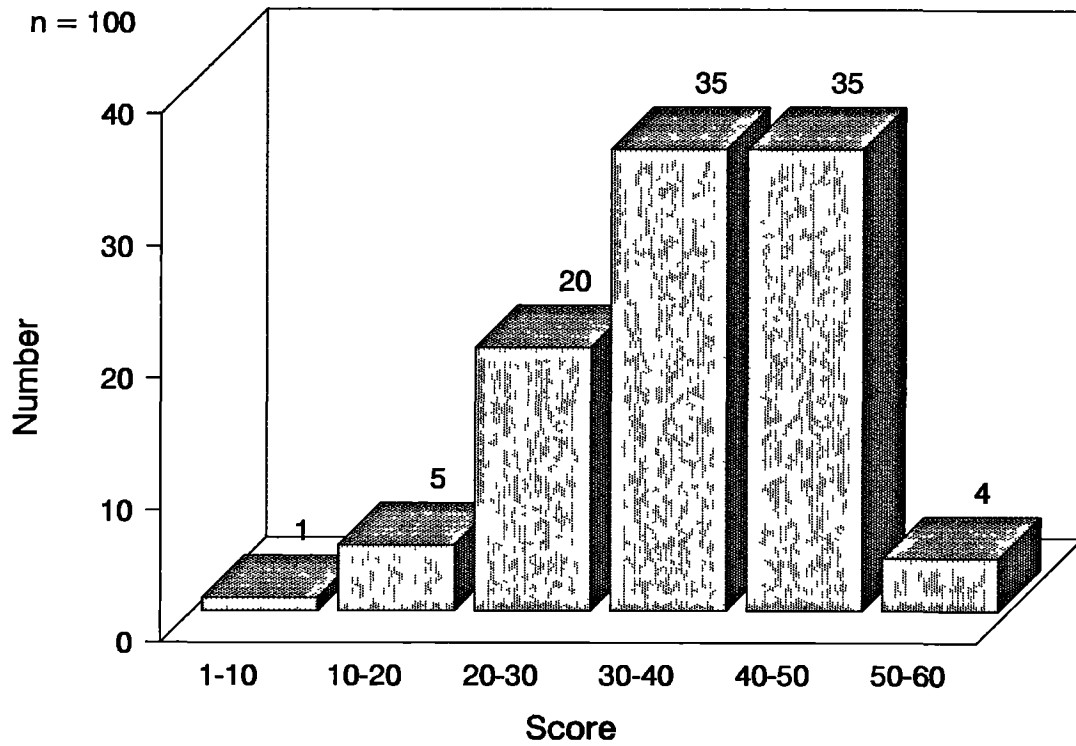


Fig VI.5. Dental Practitioners Attitude Scale Percentile Curve

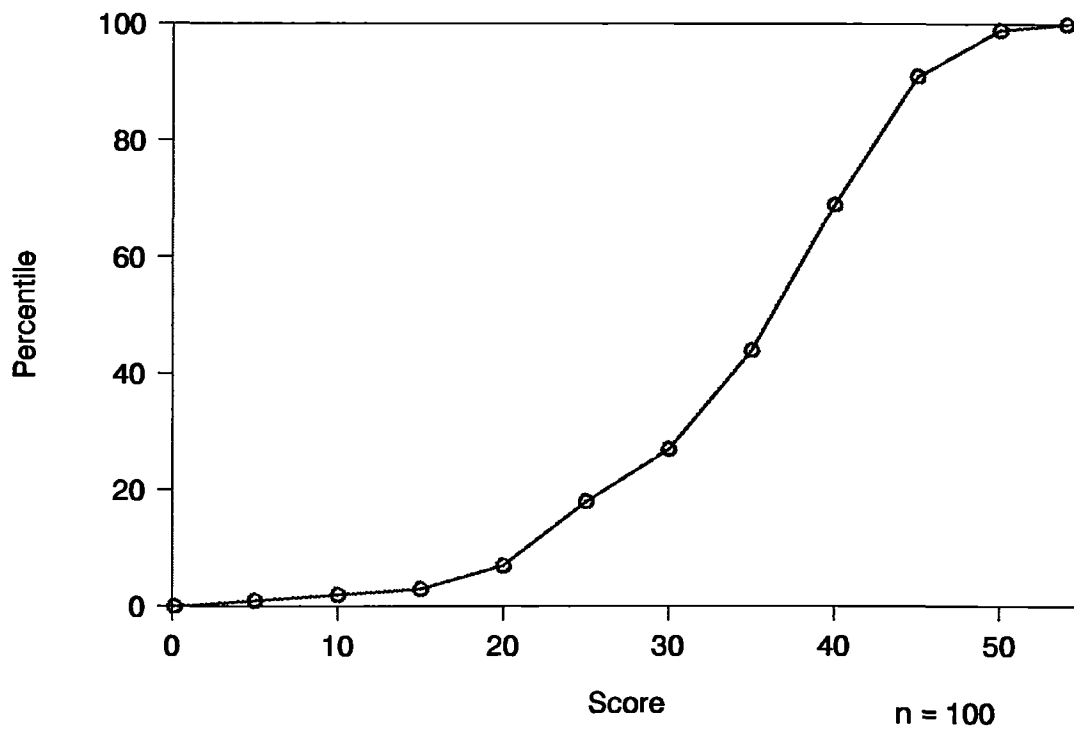


Table VI.5 Dental Practitioner Attitude Scale Scores

	Scale Item Number										
	1	2	3	4	5	6	7	8	9	10	Total
01	2	1	-3	3	3	3	-3	3	3	-3	45
02	2	2	-2	-2	1	2	1	1	2	2	39
03	1	1	2	3	3	1	1	2	1	1	26
04	-1	1	-2	1	-2	1	-3	-1	2	-2	40
05	-3	3	2	3	3	-2	3	-3	-3	3	8
06	2	2	1	3	1	3	-2	1	1	-2	38
07	-1	3	-2	-1	-2	2	-2	-3	-2	1	35
08	-2	1	-1	1	2	-1	2	-2	3	2	23
09	-2	2	-1	-1	2	2	-2	1	1	-2	38
10	3	2	-2	1	1	-1	1	1	1	1	34
11	1	-2	1	3	2	1	2	2	1	1	24
12	1	2	2	3	2	-3	3	-2	3	2	19
13	1	2	2	3	1	3	-3	-2	2	-2	35
14	1	-2	2	3	2	2	-1	-1	-1	1	22
15	2	2	1	-1	-2	3	-3	1	2	-3	48
16	1	-2	3	3	2	2	-3	-2	-2	-2	24
17	1	2	1	1	2	2	-1	1	1	-3	37
18	-1	-2	-3	-3	-2	2	1	-1	2	-3	40
19	2	-2	2	3	2	3	-2	2	3	-1	34
20	2	2	1	2	-1	2	-2	1	2	-1	40
21	-1	1	1	3	2	2	1	1	-2	-1	25
22	2	2	-2	3	2	3	-2	2	2	-3	43
23	3	3	3	-1	-1	2	2	1	1	2	35
24	2	-3	1	1	2	3	-3	-1	-2	-2	30
25	2	2	1	3	3	3	-2	1	2	2	33
26	1	1	-1	-1	-2	2	-1	-1	1	-3	42
27	2	1	2	3	2	-1	2	2	2	-1	28
28	1	2	1	-1	-2	2	-3	-2	1	-2	41
29	-1	2	1	-2	-2	2	-2	-2	1	-2	39
30	-1	1	2	-1	-1	1	-2	-1	-2	-2	32
31	1	3	-2	1	-2	2	-3	-2	1	1	40
32	-1	1	-1	1	-1	-2	-2	-1	1	-1	32
33	-2	1	1	1	2	-2	3	-1	2	2	19
34	2	3	-2	-2	-1	2	1	1	1	-1	45
35	1	2	-3	-2	-2	2	-2	-2	-2	-2	42
36	2	2	-2	2	1	2	-1	1	2	-2	42
37	3	-2	-1	-1	-2	-2	-1	-2	2	-1	35
38	2	2	-2	2	2	2	1	2	3	1	37
39	2	-2	-2	-2	-2	3	2	1	2	-3	43
40	1	2	1	1	-2	3	1	1	1	-1	38
41	-3	2	3	3	1	2	-3	-3	1	-1	26
42	3	3	2	2	1	2	-2	2	3	-3	43
43	-1	-2	2	3	3	2	1	-1	3	-2	24
44	-2	3	2	3	3	3	-3	3	2	-1	35
45	2	-1	-1	-1	-1	3	-3	1	2	-1	44
46	1	2	-1	1	2	1	-1	1	1	-1	36
47	1	1	3	2	2	1	-1	-2	2	-1	28
48	1	-1	1	2	-3	-3	-3	1	1	-1	33
49	2	2	-2	-3	-3	3	-3	2	-3	-3	50
50	1	-2	3	3	3	2	1	-3	-2	3	13

Table VI.5: Dental Practitioner Attitude Scale Scores (Continued)

	Scale Item Number										
	1	2	3	4	5	6	7	8	9	10	Total
51	-2	2	3	-2	2	3	-3	2	2	-2	39
52	1	-2	-3	-2	2	-1	-3	1	3	-2	40
53	2	2	1	-2	1	2	1	-1	2	1	35
54	2	2	1	1	-1	2	-1	1	-1	-2	38
55	1	1	2	2	2	-2	1	-2	-2	-2	21
56	-2	2	2	2	2	-2	-2	-1	1	-1	25
57	1	-2	-2	-1	-2	2	1	-1	1	-2	37
58	1	1	2	-2	-2	2	-2	-2	1	-2	39
59	3	1	-2	-2	-1	2	-2	1	2	1	45
60	1	2	2	2	-3	-2	-2	-1	-1	-1	31
61	2	3	1	-2	-2	3	-2	-1	2	-3	47
62	1	2	2	2	2	2	-2	-2	-1	1	27
63	1	1	2	1	1	-3	2	-2	2	3	20
64	1	2	2	3	2	2	-2	1	2	-2	35
65	2	-3	-2	-2	-2	2	-3	1	1	-1	43
66	2	2	-3	1	-2	2	-2	-1	2	-3	46
67	3	1	1	3	-1	2	-1	2	3	1	38
68	-2	2	3	3	2	2	-2	-3	3	1	25
69	2	3	-3	-3	-2	3	-2	2	2	-2	54
70	3	2	1	-3	-2	2	-2	-1	3	1	44
71	2	2	-1	1	2	-2	-3	2	3	0	38
72	1	3	-3	2	-3	3	-3	-1	-1	-3	45
73	3	-3	2	1	2	-2	3	3	3	2	24
74	3	3	3	3	3	1	2	3	1	3	27
75	-1	-2	1	1	2	1	-3	-1	1	-1	28
76	1	2	-2	-2	-1	2	-1	-2	3	-3	45
77	-1	1	-2	2	1	1	-2	2	3	-3	40
78	2	2	1	1	-3	3	-3	-1	2	-2	44
79	3	2	-2	1	-1	2	-2	3	2	-2	48
80	2	1	3	3	3	2	-3	1	2	-3	35
81	1	1	2	2	1	-1	1	2	2	2	27
82	1	1	-1	-1	1	1	-1	1	2	-2	40
83	3	3	2	-2	-2	-1	-2	-2	2	-2	42
84	1	2	-1	-1	-1	2	-2	-1	1	-1	41
85	-1	-2	2	3	3	1	3	-1	1	1	16
86	2	2	-2	-2	-2	2	-2	2	2	-2	50
87	1	-1	1	-2	-2	2	-2	-1	1	-2	39
88	1	2	-3	-3	2	2	1	1	3	-2	44
89	1	1	-2	1	1	1	-3	2	2	-1	41
90	3	2	-2	-2	-2	3	2	3	2	-3	50
91	-1	2	1	-2	-3	2	-2	-2	2	-2	41
92	2	3	2	3	1	2	1	3	1	1	33
93	1	-2	-2	-2	3	3	1	-3	1	-2	32
94	1	2	-1	1	-1	1	-2	1	-1	-1	38
95	1	2	2	-2	2	2	-3	-1	-2	-3	36
36	1	-3	2	2	2	2	-1	-2	-2	-2	23
97	1	2	2	-2	-3	3	1	-1	1	-2	40
98	-3	-3	3	3	3	1	-1	-3	-3	1	10
99	1	3	2	-3	-3	3	-3	1	1	-1	47
100	1	1	-1	-1	-1	2	-2	1	3	2	41

APPENDIX VII

APPENDIX VII

Dental Status and Treatment Need Coding and Criteria, Plaque Index and Calculus Index Used in the Study

VII.I Modified WHO Coding System for Caries Status

The following caries experience criteria coding was adopted for both the primary and permanent dentition

Code

0 *Sound Tooth*

A tooth was recorded as sound if it showed no evidence of treated or untreated clinical caries. The stages of caries that proceed cavitation, as well as other conditions similar to the early stages of caries, are excluded because they cannot be reliably diagnosed. Thus teeth with the following defects, in the absence of other criteria, were recorded as sound.

- White chalky spots
- Discoloured rough spots
- Stained pits or fissures in the enamel that catch the explorer, but do not have detectable softened floor, undermined enamel or softening walls
- Dark, shiny, hard, pitted areas of enamel in a tooth showing signs of moderate to severe fluorosis
- All questionable lesions were coded as sound

1 *Decayed tooth*

Caries was recorded as present when a lesion in a pit or fissure, or on a smooth tooth surface, had a detectable softened floor, undermined enamel or softened wall. A tooth with a temporary filling was also included in this category. On proximal surfaces the examiner had to be certain that the explorer had entered a lesion. Where there was any doubt, caries was not recorded as present.

2 *Filled teeth with decay*

A tooth was scored as filled, with decay, when it contained one or more permanent restorations, and one or more areas that were decayed. No distinction was made between primary or secondary caries i.e. whether or not the carious lesions were in physical association with the restoration or restorations

3 *Filled teeth with no decay*

Teeth were considered filled, without decay, when one or more permanent restorations were present, and there was no secondary (recurrent) caries or other areas of the tooth with primary caries.

A tooth crowned because of previous decay was recorded in this category.

4 *Missing teeth*

A tooth missing, for whatever reason, was coded in this category.

Information on the decayed, Missing and Filled Teeth Index (DMFT and dmft) was recorded.

D (d) component included all teeth coded 1 or 2

M (m) component included all teeth coded 4

F (f) component included all teeth coded 3

As well as information on Decayed, Missing and Filled Teeth, treatment need was also recorded. The codes and criteria for treatment need were modified from WHO (1987)

VII.2 Modified WHO Coding System for Treatment Need

Code

0 No Treatment

This code was recorded if a tooth was sound, and no treatment was required

1. A one surface filling was required
2. A two surface filling was required
3. A three surface, or more, filling was required
4. Pulp therapy was required
- 5 An extraction was required

VII.3 Oral Hygiene Status

A simple plaque index, based on Silness and Loe (1964) and the presence or absence of calculus was used as an indicator of oral hygiene status. The anterior six teeth were used for oral hygiene status.

Plaque Index

Code

0 No plaque was visible at the gingival margin

1. Moderate accumulation of soft deposits within the gingival pocket, on the gingival margin and/or adjacent tooth surface, which can be seen by the naked eye.
2. Abundance of soft matter within the gingival pocket and/or on the gingival margin and adjacent tooth surface.

CALCULUS INDEX

Code

0. No calculus present.
1. Supra gingival calculus extending only slightly below the free gingival margin
2. Moderate amounts of supra and subgingival calculus, or subgingival calculus only
3. Abundance of Supra and Subgingival calculus.

APPENDIX VIII

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
18I	-2	2	-2	-2	2	3	3	3	-1	-2	2	2	2	2	-2	2	2	2	2	2	-2	-2	2	2	86	
19I	3	2	2	3	2	3	2	2	-2	-2	2	2	-2	-3	3	3	-3	2	2	2	3	-2	3	2	93	
20I	-3	2	3	3	-2	3	3	3	-1	-3	3	1	1	-3	-2	3	1	3	3	3	1	2	2	2	78	
21I	-2	-2	2	2	2	2	2	-1	2	2	2	2	-2	2	2	2	-2	2	2	1	3	3	-2	2	-2	78
22I	3	2	2	2	1	2	2	3	-2	-3	-2	2	-3	-3	2	3	1	3	3	-2	3	-1	3	1	74	
23I	-3	-3	1	2	3	-3	3	3	-2	2	-2	3	1	-2	-2	3	2	3	3	-2	-2	-3	3	3	65	
24I	-1	2	2	2	3	3	3	-2	-1	3	2	2	2	2	2	2	2	2	2	2	2	-1	2	2	85	
25I	3	2	1	-2	2	2	2	3	2	2	2	2	-3	-2	2	2	-3	3	2	2	2	-2	2	1	81	
26I	2	3	-2	2	-2	2	2	2	-2	-2	2	2	-2	2	-2	2	1	1	2	2	-2	-2	2	1	74	
27I	1	3	3	-3	3	-1	3	3	-3	3	3	1	-3	-3	3	3	-2	3	-3	3	3	-3	3	1	95	
28I	3	2	2	3	2	2	3	3	-2	2	1	2	2	-3	2	3	-3	3	2	3	3	-3	3	2	89	
29I	3	3	-1	-2	3	2	3	3	3	-1	2	2	1	1	-2	2	1	2	1	3	3	1	3	-1	79	

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
16Z	-3	-2	3	3	-3	2	1	1	3	3	3	1	3	2	3	3	3	3	-1	3	3	1	3	3	75	
17Z	-3	3	3	3	-3	2	-2	3	-3	2	-3	-3	-3	3	3	3	-3	3	2	3	3	3	3	3	-2	67
18Z	-2	2	2	2	1	1	1	2	2	1	2	2	-2	2	-2	2	-1	2	-1	2	2	1	1	2	74	
19Z	-3	-3	3	3	-2	-3	3	3	3	3	3	-2	2	-3	3	3	-2	3	-2	3	3	-1	3	1	73	
20Z	-3	-3	1	3	3	2	-2	3	3	3	3	-1	3	3	3	3	-3	3	3	3	3	-1	3	3	84	
21Z	-2	1	1	2	-1	1	2	2	2	-1	1	-2	2	2	2	2	2	1	2	-2	1	2	2	-2	62	
22Z	-2	2	2	2	-1	-1	-1	1	-1	-1	2	2	2	-1	2	2	-1	2	1	2	2	-1	2	-1	87	
23Z	-3	3	1	3	-3	-3	3	3	-3	2	3	-3	-3	3	3	3	-2	3	3	3	3	3	3	-3	62	
24Z	-3	-3	3	3	3	-3	3	3	3	-1	1	-2	-3	3	3	3	-1	3	3	3	3	3	3	1	59	
25Z	-3	3	3	3	-3	3	-3	3	-3	2	3	-3	-3	3	3	3	-3	3	3	3	3	3	3	-3	73	
26Z	-3	-3	3	3	3	-3	3	3	3	3	1	-2	-3	3	-3	3	-1	3	3	3	3	3	3	-1	47	
27Z	-3	-2	2	3	1	-2	1	3	2	1	2	2	3	-2	-2	2	2	2	2	-1	3	2	3	-1	65	
28Z	-2	1	2	1	2	-2	2	2	-1	1	2	2	-2	2	1	2	-1	2	2	2	2	1	2	1	74	
29Z	-3	3	3	3	3	3	-3	3	-3	3	2	-3	-3	3	3	3	-3	3	3	3	3	3	3	-3	77	
30Z	-3	-3	3	3	3	-3	3	3	3	3	2	-1	-2	-3	3	3	1	3	1	3	3	1	3	-2	63	
31Z	-3	2	2	3	2	3	2	3	3	2	3	-2	1	2	2	3	1	1	-1	-1	3	1	2	-1	73	
32Z	-3	3	3	3	3	-3	3	1	3	3	3	-1	-3	-3	3	3	1	3	1	3	3	1	3	-1	72	
33Z	-2	-1	2	2	2	1	1	2	2	1	1	1	-2	-1	2	2	2	2	2	2	2	2	1	-2	66	
34Z	-3	-2	1	3	-3	-2	-1	3	-3	2	2	1	3	3	-3	3	3	3	-1	2	-1	1	-3	-3	55	
35Z	-3	3	1	3	2	3	-3	3	3	3	-3	-3	-3	3	-3	3	-2	3	3	3	3	3	3	-3	60	
36Z	-2	-1	2	2	1	2	2	1	-1	1	2	2	2	2	-1	2	-1	2	1	2	2	1	2	1	78	
37Z	-3	-2	3	3	3	3	-3	3	-3	2	3	-2	3	-3	3	3	-2	3	3	3	3	3	3	-2	87	
38Z	-3	2	1	-2	2	-1	2	1	-1	-1	2	2	-1	-2	1	2	1	2	1	2	2	1	2	1	88	
39Z	-2	2	-1	2	2	-2	2	1	-2	1	1	2	2	1	2	2	1	2	1	2	2	1	2	1	83	
40Z	-3	3	3	3	3	3	0	3	3	3	3	-2	3	3	3	3	3	3	3	3	3	3	3	-2	71	

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
240	-3	-2	2	3	3	-3	1	-1	-3	-1	3	1	3	2	3	3	2	2	1	1	3	1	3	-2	82	
241	-3	-2	-3	-3	3	3	-3	-3	-2	-3	3	3	3	-3	3	3	-3	-2	-2	3	3	-3	3	2	135	
242	-2	1	-2	-1	-1	-1	2	-1	-1	-1	2	1	1	-1	1	2	-1	1	-1	2	3	-1	3	2	97	
243	-3	-2	-3	-3	3	3	-2	-1	-1	1	3	2	1	-1	1	3	-2	1	1	1	1	-1	-3	3	1	106
244	-3	2	-3	2	2	3	-2	1	1	1	2	2	1	-2	-1	2	1	1	-2	2	2	-1	1	2	98	
245	3	2	1	2	-2	-2	2	1	2	2	2	-2	-2	-2	1	-1	-1	-2	2	2	2	3	3	3	65	
246	-3	3	-2	-1	2	2	-1	-1	-1	1	1	2	1	1	-1	1	2	-2	1	1	2	2	1	1	92	
247	-3	-1	-2	-2	2	1	-1	1	1	-2	2	1	1	-1	3	3	-2	1	-1	3	2	-2	3	-1	104	
248	-3	1	-2	-3	1	-2	1	1	-1	1	3	2	-2	-1	2	2	-1	1	-1	2	2	-1	2	2	96	
249	-3	2	-3	-2	3	3	-2	1	1	2	3	2	3	-2	3	3	-3	-2	-2	3	3	-3	-1	2	119	
250	-3	-2	-2	-2	2	1	-1	2	1	-2	2	1	1	-1	3	3	-2	1	-1	3	2	-2	3	-2	101	

VIII.3 Parental Attitude Scale Scores Group A to I

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
01A	-3	-3	-3	3	-3	-3	-1	-3	3	-3	3	3	-3	-3	1	-3	3	3	72
02A	3	1	-3	-2	-3	3	2	-2	2	-3	3	3	-3	2	1	-3	3	3	85
03A	3	-2	-3	2	-3	3	3	3	3	-3	3	3	-3	3	3	-3	3	3	80
04A	3	3	-3	2	-3	2	1	-2	3	-3	3	3	-3	-3	3	-3	3	3	87
05A	3	3	2	2	-3	2	3	3	3	2	3	3	-3	2	-2	-3	3	3	80
06A	1	2	-2	2	-2	3	2	2	3	-2	2	3	-2	-2	2	-3	3	3	83
07A	3	3	-3	-2	-2	-2	-1	2	2	-3	3	3	-3	-2	1	-3	-1	3	88
08A	-2	-1	3	-2	-3	3	3	-3	3	1	3	3	1	3	3	-3	2	3	59
09A	-3	-3	-3	-3	-3	3	3	3	3	-3	3	3	-3	3	-3	-3	3	3	84
10A	-3	3	-3	1	-3	-1	1	3	1	-1	2	3	-3	-3	-1	-3	3	3	83
11A	3	2	-3	3	-3	3	2	-2	3	-3	3	3	-3	-3	3	-3	3	3	85
12A	3	3	-3	-3	-3	-2	-2	-2	3	-3	3	3	-3	-3	-3	-3	3	3	43
13A	-2	2	-2	1	-1	-1	2	-2	1	-2	1	2	-1	2	2	-1	2	1	58
14A	2	-2	-3	2	-3	2	3	-2	3	-2	3	3	2	3	3	-3	3	3	67
15A	2	3	-3	-2	-2	2	3	-1	3	-2	3	3	1	2	-2	-3	3	2	82
16A	2	3	-3	2	-3	3	2	1	3	-3	3	3	-3	2	-3	-3	2	3	89
17A	3	-1	-3	-1	-2	2	1	1	2	-2	2	2	2	2	-1	-2	2	2	75
18A	-2	2	-3	-3	-3	2	1	1	2	-3	3	3	-3	-3	-2	-3	2	3	92
19A	2	1	2	1	3	2	3	2	3	-2	3	3	2	1	2	-2	-2	3	61
20A	3	3	-3	-3	-3	3	3	3	3	-3	3	3	-3	-3	-3	-3	3	3	102
21A	-3	-3	-3	3	-3	-3	-1	-3	3	-3	3	3	-3	-3	1	-3	3	3	72
22A	3	1	-3	-2	-3	3	2	-2	2	-3	3	3	-3	2	1	-3	3	3	85
23A	3	-2	-3	2	-3	3	3	3	3	-3	3	3	-3	3	3	-3	3	3	80
24A	3	3	-3	2	-3	2	1	-2	3	-3	3	3	-3	-3	3	-3	3	3	87
25A	3	3	2	2	-3	2	3	3	3	2	3	3	-3	2	-2	-2	3	3	79
26A	1	2	-2	2	-2	3	2	2	3	-2	2	3	-2	-2	2	-3	3	3	83
27A	3	3	-3	-2	-3	-2	-1	2	2	-3	3	3	-3	-2	1	-3	-1	3	89
28A	-2	-1	3	-2	-3	3	3	-3	3	1	3	3	1	3	3	-3	2	3	59
29A	-3	-3	-3	-3	-3	3	3	3	3	-3	3	3	-3	3	-3	-3	3	3	84
30A	-3	3	-3	1	-3	-1	1	3	1	-1	2	3	-3	-3	-1	-3	3	3	83
31A	3	2	-3	3	-3	3	2	-2	3	-3	3	3	-3	-3	3	-3	3	3	85
32A	3	3	-3	-3	-3	-2	-2	-2	3	-3	3	3	-3	-3	-3	-3	3	3	97
01B	-2	2	-3	2	-3	-3	3	-2	3	-3	3	3	-2	-3	2	-3	2	2	72
02B	3	3	-3	-3	-3	3	3	-3	3	2	2	3	2	1	2	3	2	3	69
03B	3	3	-3	-3	-3	3	3	2	3	2	3	3	-2	3	2	-3	3	3	84
04B	3	3	-3	-3	-3	3	2	3	3	-3	3	3	2	-3	3	-3	2	3	91
05B	3	2	-3	3	-3	2	3	-2	3	1	2	2	2	-3	2	-3	2	3	72
06B	3	3	-3	-3	-3	3	3	-2	3	-2	3	2	-2	-3	-2	-3	2	3	92
07B	-1	2	-2	-1	-2	-2	1	2	2	1	1	2	1	2	2	-1	1	1	61
08B	3	3	-3	2	-3	3	3	3	3	2	3	3	2	3	3	-3	2	3	74
09B	3	3	-3	-2	-3	3	2	3	3	-3	3	3	-3	-3	2	-3	2	3	96
10B	1	2	1	-2	-3	3	3	-1	2	1	2	2	2	1	2	-2	2	2	66
11B	3	2	-2	2	-2	2	2	3	3	-2	3	2	2	1	2	-3	1	2	75
12B	3	2	-3	1	-3	2	2	-2	2	-3	2	2	-2	-1	2	-3	3	3	81
13B	3	3	-3	3	-3	2	2	-2	2	2	3	3	-2	-3	-2	-3	3	3	83
14B	-2	3	-3	-2	-3	1	2	2	2	1	2	3	1	-2	1	-3	2	3	78
15B	2	3	-3	-3	-3	3	-2	-2	3	-3	3	3	-3	-3	3	-3	3	3	95
16B	2	2	-2	2	-3	2	2	-2	2	2	1	3	1	-2	2	-2	1	2	67
17B	3	2	-3	-2	-3	2	3	3	3	2	2	2	-3	3	3	-3	2	3	79
18B	-2	-1	-3	-2	-3	2	3	-2	3	1	2	2	2	3	3	-2	2	2	60
19B	2	-2	-2	-2	-2	2	3	-2	3	-2	3	3	-2	-2	3	-2	-2	3	72
20B	-2	3	-3	3	-3	2	3	-3	3	-3	1	3	-3	-3	-2	-3	3	2	80
21B	3	3	-3	-3	-3	3	-3	3	-2	-3	3	3	-3	-3	-3	-3	3	3	103
22B	-3	-3	-3	3	-3	3	3	2	3	1	3	3	3	-3	3	-3	3	3	67
23B	1	2	-2	2	-2	2	3	-2	2	-2	2	3	-2	-2	2	-2	-2	3	70
24B	3	3	-3	3	3	3	2	2	3	-3	3	3	-3	-3	3	-3	3	3	84

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
21I	-2	2	-2	-2	-2	3	-2	2	2	-1	2	2	-2	-2	2	-2	-2	2	78
22I	1	2	-3	1	-2	3	3	-2	3	1	3	3	1	-2	-1	3	3	3	72
23I	1	2	-3	2	-3	3	3	2	3	1	3	3	1	-2	-1	3	3	3	76
24I	-2	2	-2	2	-2	-1	2	2	2	-1	2	2	-1	2	2	2	-1	2	58
25I	3	2	-3	2	-3	2	3	3	3	-3	3	3	-3	-3	2	-3	2	3	89
26I	-2	-1	-2	1	-2	1	2	2	2	-1	1	2	-2	-2	-1	-2	-2	2	68
27I	-3	3	-3	3	-3	3	1	3	3	-3	3	3	-3	-3	-3	-3	3	3	92
28I	-2	-3	-3	-3	-3	3	2	2	3	-2	3	3	-3	-3	-3	-3	-3	3	84
29I	-3	2	-2	1	-2	-2	2	-2	3	-2	3	3	-2	2	-1	-1	2	2	67

VIII.3.1 Parental Attitude Scale Scores, Group J to P

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
01J	3	3	-3	3	-3	1	3	-3	3	1	3	3	1	3	3	-3	3	3	68
02J	-1	2	-2	2	-2	1	2	-2	2	1	2	2	2	1	2	-2	2	2	60
03J	2	2	3	-3	-3	2	3	3	3	3	-2	2	2	2	3	3	2	-1	54
04J	-1	2	2	3	2	2	3	-2	3	2	2	2	2	-2	3	-3	1	2	53
05J	3	3	-1	3	-1	3	3	1	3	3	3	3	3	3	2	-3	-1	3	63
06J	-1	2	-2	3	-3	3	2	-2	3	-3	3	3	-3	2	3	3	3	3	69
07J	3	3	-3	3	-3	3	2	3	3	-3	3	3	-3	-3	3	3	3	3	85
08J	1	3	-1	-3	-3	1	2	2	3	-3	3	3	-3	-3	-2	-3	3	3	95
09J	1	1	1	1	-3	2	3	3	3	-3	1	3	-3	1	2	-3	3	3	78
10J	-2	2	-1	1	-1	-3	2	2	-2	-1	2	2	-1	-1	2	-1	1	2	59
11J	2	2	-2	-2	-1	2	2	2	3	-1	2	2	-1	-2	2	2	-2	2	72
12J	-3	3	-1	-1	-1	2	-2	3	2	-1	3	3	-2	3	-1	-1	2	3	79
13J	-3	3	-3	-2	-3	3	2	-1	3	-1	3	3	-1	-1	-1	-1	3	3	82
14J	3	3	-3	-3	-3	3	2	3	2	-3	3	3	-3	-3	-3	-3	3	3	102
15J	1	2	1	-1	-1	-1	2	2	3	-1	2	2	-1	-1	2	2	-1	2	64
16J	2	2	3	-3	-3	2	3	3	3	3	-2	2	2	2	3	3	2	-1	54
17J	-1	2	2	3	2	2	3	-2	3	2	2	2	2	-2	3	-3	1	2	53
18J	-1	2	-2	3	-3	3	2	-2	3	-3	3	3	-3	2	3	3	3	3	69
19J	1	1	1	1	-3	2	3	3	3	-3	1	3	-3	1	2	-3	3	3	78
20J	-2	2	-1	1	-1	-1	2	2	-2	-1	2	2	-1	-1	2	-1	1	2	61
21J	2	2	-2	-2	-1	2	2	2	3	-1	2	2	-1	-2	2	2	-2	2	72
22J	-3	3	-1	-1	-1	2	-2	3	2	-1	3	3	-2	3	-1	-1	2	3	79
23J	-3	3	-3	-2	-2	3	2	-1	3	-1	3	3	-1	-1	-1	-1	3	3	81
24J	3	3	-3	-3	-3	3	2	3	3	-3	3	3	-3	-3	-3	-3	3	3	103
25J	1	2	1	-1	-1	-1	2	2	3	-1	2	2	-1	-1	2	2	-1	2	64
26J	2	2	3	-3	-3	2	3	3	3	3	-2	2	2	2	3	3	2	-1	54
27J	-1	2	2	3	2	2	3	-2	3	2	2	2	2	-2	3	-3	1	2	53
28J	-1	2	-2	3	-3	3	2	-2	3	-3	3	3	-3	2	3	3	3	3	69
29J	1	1	1	1	-3	2	3	3	3	-3	1	3	-3	1	2	-3	3	3	78
01K	3	3	-3	-3	-3	3	2	3	2	-3	3	3	-3	-3	-3	-3	3	3	102
02K	1	2	1	-1	-1	-1	2	2	3	-1	2	2	-1	-1	2	2	-1	2	64
03K	2	2	-2	1	-2	2	2	1	2	-2	2	2	-2	-3	2	1	2	2	76
04K	3	3	-3	-2	-3	2	2	3	3	2	3	2	1	-3	3	2	-2	3	75
05K	2	2	-2	2	-2	2	2	-1	2	-2	2	2	-2	-3	2	-1	2	2	75
06K	2	2	2	1	-1	2	3	2	3	-1	2	2	1	-2	-2	2	1	2	69
07K	2	2	-2	1	-2	2	2	-2	2	-2	2	2	-1	-3	1	1	-1	2	70
08K	3	3	-3	-3	-3	-2	3	3	-1	-3	3	3	-3	-3	-3	-2	3	3	92
09K	-2	2	2	-1	-3	2	3	-2	3	2	2	2	2	3	3	1	2	-1	50
10K	1	2	-1	-1	-2	2	1	-1	1	-3	2	2	-3	-3	-2	-2	-2	3	80
11K	3	3	-3	-1	-3	3	2	3	3	2	3	3	2	-3	-3	-3	3	3	91
12K	3	3	-3	-3	3	-2	3	3	-2	3	3	-2	-3	3	-3	3	3	3	63
13K	-3	-3	1	3	-3	2	3	-3	3	2	3	3	2	3	3	1	1	-3	39
14K	3	3	-3	-2	-3	3	-1	3	3	-1	3	3	-1	-3	3	-3	3	3	95
15K	3	3	-3	-2	-3	3	1	3	3	2	3	3	2	-3	3	-3	3	3	87
16K	3	3	-3	-3	-3	3	1	3	3	-2	3	3	-2	-3	3	-3	3	3	96
17K	3	3	-3	-2	-3	3	1	3	3	1	3	3	1	-3	3	-3	3	3	89
18K	3	3	-3	-3	-3	-2	3	3	-1	-3	3	3	-3	-3	-3	-2	3	3	92
19K	3	3	-3	-3	-3	3	2	3	3	-2	3	3	-2	-3	3	-3	3	3	95
20K	3	3	-3	-3	-3	3	-2	3	-3	3	3	3	-2	-3	3	-3	3	3	88
21K	3	3	-3	-3	-3	3	2	3	3	2	3	3	-2	-3	3	-3	3	3	91
22K	3	3	-3	-3	-3	3	3	3	3	-3	3	3	-2	-3	3	3	3	3	89
23K	3	3	-3	3	-3	1	3	-3	3	1	3	3	1	3	3	-3	3	3	68
24K	-1	2	-2	2	-2	1	2	-2	2	1	2	2	2	1	2	-2	2	2	60
25K	2	2	-2	1	-2	2	2	1	2	-2	2	2	-2	-3	2	1	2	2	76
26K	3	3	-3	-2	-3	2	2	3	3	2	3	2	1	-3	3	2	-2	3	75
27K	2	2	-2	2	-2	2	2	-1	2	-2	2	2	-2	-3	2	-1	2	2	75

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
11N	-3	3	-3	2	2	3	2	3	3	-2	2	2	-2	-3	3	-3	3	2	76
12N	3	3	2	2	-3	3	-2	-2	2	1	2	2	-2	2	2	2	2	2	67
13N	3	3	-3	-2	2	3	2	3	3	2	2	3	-2	-3	3	3	2	2	76
14N	3	-3	1	3	1	3	3	3	3	1	3	3	1	3	3	-2	3	3	61
15N	3	3	-3	2	-2	3	3	2	2	-2	2	3	-3	-2	3	-3	3	3	85
16N	-2	-2	-2	-1	-3	3	3	-2	3	-3	3	3	-3	-2	3	-2	3	3	76
17N	3	-2	-2	-2	-1	-2	3	2	3	-2	-2	-2	-2	-2	3	-1	2	3	65
18N	2	2	-3	1	-3	-2	3	1	3	-3	3	3	-3	1	2	-3	2	3	79
19N	-2	-2	-2	2	2	1	3	3	3	-2	2	2	-2	-2	2	-2	2	3	67
20N	3	1	-3	3	-3	3	3	1	3	3	3	3	3	3	3	-3	1	3	66
21N	3	3	3	3	-2	3	-3	3	3	-3	3	3	-3	-2	3	-3	3	3	88
22N	-2	2	-2	2	3	3	2	3	2	-2	3	3	-2	2	2	-2	-2	2	65
23N	2	3	-3	2	-3	3	1	-2	3	-3	3	3	-3	-3	2	-3	2	2	86
24N	3	3	-3	-3	2	3	3	3	3	-2	3	3	-3	-2	3	-3	3	3	89
25N	2	3	-3	3	-2	3	2	3	3	-3	3	3	-3	-3	2	-2	3	3	89
26N	-2	-2	-2	3	-2	3	3	-3	3	3	2	2	3	3	3	3	-2	-2	36
27N	3	1	-3	-2	-3	2	2	-2	2	-2	3	3	-2	-3	3	-3	3	2	84
28N	2	2	-3	2	-3	-2	3	-3	3	-3	3	3	-2	-3	3	-3	-2	3	72
29N	3	3	-3	1	-2	3	3	3	2	-3	2	3	-3	3	3	-2	3	2	81
30N	-3	3	-3	2	2	3	2	3	3	-2	2	2	-2	-3	3	-3	3	2	76
31N	3	3	2	2	-3	3	-2	-2	2	1	2	2	-2	2	2	2	2	2	67
32N	3	3	-3	-2	2	3	2	3	3	2	2	3	-2	-3	3	3	2	2	76
33N	3	-3	1	3	1	3	3	3	3	1	3	3	1	3	3	-2	3	3	61
34N	3	3	-3	2	-2	3	3	2	2	-2	2	3	-3	-2	2	-3	3	3	86
35N	-2	-2	-2	-1	-3	3	3	-2	3	-3	3	3	-3	-2	3	-2	3	3	76
36N	3	-2	-2	-2	-1	-2	3	2	3	-2	-2	-2	-2	-2	3	-1	2	3	65
37N	2	2	-3	1	-3	-2	3	1	3	-3	3	3	-3	1	2	-3	2	3	79
38N	-2	-2	-2	2	2	1	3	3	3	-2	2	2	-2	-2	2	-2	2	3	67
01P	2	1	-2	3	-3	1	3	-2	2	2	2	2	-2	-2	2	-3	2	-2	60
02P	3	3	2	-2	-3	-1	2	3	3	-3	3	3	-3	-3	-3	3	3	3	87
03P	-2	2	-2	1	-2	2	2	1	2	-2	2	2	-2	-3	2	1	2	2	72
04P	3	3	-3	-2	-3	2	2	3	3	2	3	2	1	-3	3	2	-2	3	75
05P	2	2	-2	2	-2	2	2	-1	2	-2	2	2	-2	-3	2	-1	2	2	75
06P	2	2	2	1	-1	2	3	2	3	-1	2	2	1	-2	-2	2	1	2	69
07P	2	2	-2	1	-2	2	2	-2	2	-2	2	2	-1	-3	1	1	-1	2	70
08P	-2	2	2	-1	-3	2	3	-2	3	2	2	2	2	3	3	1	2	-1	50
09P	1	2	-1	-1	-2	2	1	-1	1	-3	2	2	-3	-3	-2	-2	-2	3	80
10P	3	3	-3	-3	-3	3	-2	3	3	-2	3	3	-2	-3	3	-3	3	3	99
11P	-3	-3	1	3	-3	2	3	-3	3	2	3	2	3	3	1	1	1	-3	39
12P	3	3	-3	-2	-3	3	-1	3	3	-1	3	3	-1	-3	3	-3	3	3	95
13P	3	3	-3	-2	-3	3	1	3	3	2	3	3	2	-3	3	-3	3	3	87
14P	3	3	-3	-3	-3	3	1	3	3	-2	3	3	-2	-3	3	-3	3	3	96
15P	3	3	-3	-2	-3	3	1	3	3	1	3	3	1	-3	3	-3	3	3	89
16P	3	3	-3	-3	-3	-2	3	3	-1	-3	3	3	-3	-3	-3	-2	3	3	92
17P	3	3	-3	-3	-3	3	2	3	3	-2	3	3	-2	-3	3	-3	3	3	95
18P	3	3	-3	-3	-3	3	-2	3	3	3	3	3	-2	-3	3	-3	3	3	94
19P	3	3	-3	-3	-3	3	2	3	3	2	3	3	-2	-3	3	-3	3	3	91
20P	3	3	-3	-1	-3	3	2	3	3	2	3	3	2	-3	-3	-3	3	3	91
21P	3	3	-3	-3	-3	3	3	3	3	-3	3	3	-2	-2	3	3	3	3	88
22P	3	3	-3	3	-3	1	3	-3	3	1	3	3	1	3	3	-3	3	3	68
23P	-1	2	-2	2	-2	1	2	-2	2	1	2	2	2	1	2	-2	2	2	60
24P	-3	-3	1	3	-3	2	3	-3	3	2	3	3	2	3	3	1	1	-3	39
25P	3	3	-3	-2	-3	3	-1	3	3	-1	3	3	-1	-3	3	-3	3	3	95
26P	3	3	-3	-2	-3	3	1	3	3	2	3	3	2	-3	3	-3	3	3	87
27P	3	3	-3	-3	-3	3	1	3	3	-2	3	3	-2	-3	3	-3	3	3	96
28P	3	3	-3	-2	-3	3	1	3	3	1	3	3	1	-3	3	-3	3	3	89
29P	3	3	-3	-3	-3	-2	3	3	-1	-3	3	3	-3	-3	-3	-2	3	3	92

VIII.3.2 Parental Attitude Scale Scores, Group S to Z

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
01S	-2	2	-2	2	-3	2	2	3	-1	1	2	2	-2	-3	2	2	1	2	66
02S	1	1	-1	-2	1	3	2	-1	2	-1	2	2	-1	-3	1	1	2	2	71
03S	1	1	-2	2	1	3	1	2	3	2	2	3	1	-1	1	3	3	2	66
04S	3	3	-3	-3	-3	3	3	3	3	-3	3	3	-3	-3	-3	3	3	3	96
05S	1	2	-1	-1	2	3	2	3	3	3	2	2	3	3	-2	3	2	2	62
06S	3	3	-3	-2	-3	3	-2	3	2	-2	3	3	-2	-3	-3	3	3	3	97
07S	3	-1	-3	-2	3	3	-2	3	3	1	3	3	1	-3	-2	3	3	3	81
08S	3	2	-1	3	3	3	1	-1	3	3	3	3	2	2	2	1	3	2	59
09S	-1	-2	-1	1	3	3	2	-1	2	2	3	2	3	3	2	3	3	2	47
10S	3	3	-3	-3	-3	3	-3	3	3	-3	3	3	-3	-3	-3	-3	3	3	108
11S	-1	3	-1	2	1	2	-1	1	3	2	2	2	3	1	1	3	3	3	61
12S	-2	1	-3	3	3	3	3	-2	2	2	3	3	-3	3	-3	-2	3	3	65
13S	3	3	-3	-3	-3	3	3	3	3	-3	3	3	-3	-3	-3	3	3	3	96
14S	1	3	-1	3	-1	3	-1	-1	3	2	1	3	2	3	1	3	3	-3	56
15S	-3	3	-3	-3	-3	3	-2	3	3	-2	3	3	-2	-3	3	3	3	3	87
16S	-1	2	-1	3	-1	3	-1	3	3	2	3	3	2	-1	-2	3	3	3	72
17S	-2	-2	2	2	-3	2	2	1	2	-2	2	2	1	3	-2	-3	2	3	64
18S	1	-1	-1	2	1	3	-1	3	3	2	2	2	2	1	-1	3	3	1	63
19S	3	2	-3	-2	2	3	-2	3	3	-2	3	3	-2	-3	-3	3	3	3	92
20S	2	1	-2	3	-2	-2	1	1	-2	-1	-3	-2	2	2	-2	2	2	-3	45
21S	3	2	-3	-2	2	3	-2	3	3	-3	3	3	-3	-3	-3	3	3	3	94
22S	2	1	-2	1	3	2	3	1	3	1	3	2	2	-3	-3	3	3	2	68
23S	1	3	-2	1	-2	3	2	-1	3	1	2	2	1	-3	-1	3	3	3	73
24S	3	3	-3	-3	2	3	2	3	3	-2	3	3	-2	-3	-3	3	3	3	90
25S	2	2	-2	2	-3	2	3	-3	2	2	2	2	3	-2	-3	3	2	2	66
26S	2	2	-1	-1	2	3	2	1	3	3	1	3	2	2	2	2	3	-1	58
27S	3	3	-3	-2	-3	3	-3	3	3	-3	3	3	-3	-3	-3	3	3	3	101
28S	3	2	-3	3	-3	1	3	2	3	3	2	2	-2	-2	2	-3	2	2	75
29S	2	3	-2	1	2	3	1	1	3	2	3	3	2	-1	-1	3	3	2	70
30S	3	3	-3	-3	-3	3	-3	3	3	-2	3	2	-2	-1	-2	3	3	3	96
31S	3	3	-3	-3	2	3	3	3	3	-3	3	3	-3	3	-2	3	3	3	84
32S	-2	3	1	-1	1	3	1	1	3	3	1	2	2	-1	1	3	3	1	59
33S	2	-2	-1	3	-2	-1	2	-1	2	1	1	1	1	2	1	-2	1	3	55
34S	2	-2	-1	3	-2	-1	3	-1	3	1	1	1	1	2	1	-2	1	3	55
35S	3	-2	-3	-2	-2	3	2	3	3	-2	3	3	-2	-3	-3	3	3	3	88
36S	3	1	-1	-1	1	3	1	2	3	2	2	1	2	-2	2	3	3	1	66
37S	3	1	-3	-1	2	3	1	-3	3	3	1	2	2	3	1	3	3	2	58
38S	2	2	-2	1	-2	2	2	1	2	-2	2	2	-2	-3	2	1	2	2	76
39S	3	3	-3	-2	-3	2	2	3	3	2	3	2	1	-3	3	2	-2	3	75
40S	2	2	-2	2	-2	2	2	-1	2	-2	2	2	-2	-3	2	-1	2	2	75
41S	2	2	-2	1	-2	2	2	-2	2	-2	2	2	-1	-3	1	1	-1	2	70
42S	-2	2	2	-1	-3	2	3	-2	3	2	2	2	2	3	3	1	2	-1	50
43S	1	2	-1	-1	-2	2	1	-1	1	-3	2	2	-3	-3	-2	-2	-2	3	80
44S	3	3	-3	-3	-3	3	-2	3	3	-2	3	3	-2	-3	3	-3	3	3	99
01U	2	-2	2	1	-3	3	2	3	2	-3	3	-2	1	3	2	-3	3	1	65
02U	2	-2	-1	1	1	2	2	-1	1	3	3	2	2	2	2	1	3	2	53
03U	-2	3	-3	3	-3	3	3	-3	3	-3	3	3	-1	3	3	-3	3	3	71
04U	-1	3	-3	3	-3	3	-1	-2	2	-2	2	3	-3	-2	-3	-3	-3	3	81
05U	0	-1	3	-1	-3	3	3	-3	3	3	3	1	-2	3	3	3	3	3	54
06U	2	-2	1	2	-2	1	2	2	2	2	2	-2	1	-3	2	2	1	3	56
07U	-1	-2	-2	3	-2	2	3	2	2	2	1	-1	2	-2	3	3	-2	2	47
08U	1	-2	1	-1	1	2	2	-1	1	1	1	-2	1	1	1	1	1	2	49
09U	1	2	1	2	-3	3	3	-3	3	-3	3	3	-3	1	2	2	3	3	70
10U	-2	-3	-2	2	-2	2	3	-3	2	2	2	-2	2	-3	-2	1	2	2	53
11U	-2	2	2	3	-2	3	3	-3	2	3	2	-2	3	3	3	3	2	3	40
12U	2	2	1	1	2	-1	2	2	2	2	2	2	2	1	2	2	2	2	54

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Total
26Z	-3	-1	3	3	-2	3	3	3	3	-3	3	3	-3	-3	3	-2	1	-1	66
27Z	2	1	-3	2	-3	2	3	2	-1	-1	1	2	-1	1	-1	-2	3	3	74
28Z	1	-1	-2	1	-2	2	2	1	2	-2	2	2	-2	-2	1	-2	2	2	75
29Z	3	3	-3	-3	-3	3	-3	3	3	-3	3	3	-3	-3	3	-3	3	3	102
30Z	-3	3	-3	3	-3	3	3	-3	3	-3	3	3	-3	-3	3	-1	3	1	74
31Z	0	1	1	1	-3	1	3	-1	2	1	1	2	-1	1	2	-3	3	3	64
32Z	-3	3	-3	1	-3	3	1	3	3	-3	3	3	-3	-3	3	-3	3	3	88
33Z	2	-1	-2	2	-2	2	2	-1	2	-2	1	1	-2	-2	2	-2	2	-1	67
34Z	0	1	1	2	-1	1	2	2	2	-1	1	2	-1	-1	-1	-1	1	2	67
35Z	3	3	-3	-2	-3	3	-2	3	3	-3	3	3	-3	3	3	3	3	3	88
36Z	-1	1	-2	1	-1	2	2	1	2	-1	2	2	-1	-2	2	-1	2	2	70
37Z	3	3	-3	-2	-3	3	3	3	3	-3	3	3	-3	-3	3	-3	3	3	95
38Z	2	2	-2	1	-2	2	-1	2	2	-2	2	2	-2	-2	1	-2	2	2	83
39Z	-1	1	2	2	-2	2	2	1	2	-2	2	2	-2	-2	2	-2	2	2	69
40Z	3	3	-3	-2	-2	3	3	3	3	-3	3	3	-3	-3	-3	-3	3	3	100

VIII.4 Dental Practitioner Attitude Scale Scores

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	Total
001	2	1	-3	3	3	3	-3	3	3	-3	45
002	2	2	-2	-2	1	2	1	1	2	2	39
003	1	1	2	3	3	1	1	2	1	1	26
004	-1	1	-2	1	-2	1	-3	-1	2	-2	40
005	-3	3	2	3	3	-2	3	-3	-3	3	8
006	2	2	1	3	1	3	-2	1	1	-2	38
007	-1	3	-2	-1	-2	2	-2	-3	-2	1	35
008	-2	1	-1	1	2	-1	2	-2	3	2	23
009	-2	2	-1	-1	2	2	-2	1	1	-2	38
010	3	2	-2	1	1	-1	1	1	1	1	34
011	1	-2	1	3	2	1	2	2	1	1	24
012	1	2	2	3	2	-3	3	-2	3	2	19
013	1	2	2	3	1	3	-3	-2	2	-2	35
014	1	-2	2	3	2	2	-1	-1	-1	1	22
015	2	2	1	-1	-2	3	-3	1	2	-3	48
016	1	-2	3	3	2	2	-3	-2	-2	-2	24
017	1	2	1	1	2	2	-1	1	1	-3	37
018	-1	-2	-3	-3	-2	2	1	-1	2	-3	40
019	2	-2	2	3	2	3	-2	2	3	-1	34
020	2	2	1	2	-1	2	-2	1	2	-1	40
021	-1	1	1	3	2	2	1	1	-2	-1	25
022	2	2	-2	3	2	3	-2	2	2	-3	43
023	3	3	3	-1	-1	2	2	1	1	2	35
024	2	-3	1	1	2	3	-3	-1	-2	-2	30
025	2	2	1	3	3	3	-2	1	2	2	33
026	1	1	-1	-1	-2	2	-1	-1	1	-3	42
027	2	1	2	3	2	-1	2	2	2	-1	28
028	1	2	1	-1	-2	2	-3	-2	1	-2	41
029	-1	2	1	-2	-2	2	-2	-2	1	-2	39
030	-1	1	2	-1	-1	1	-2	-1	-2	-2	32
031	1	3	-2	1	-2	2	-3	-2	1	1	40
032	-1	1	-1	1	-1	-2	-2	-1	1	-1	32
033	-2	1	1	1	2	-2	3	-1	2	2	19
034	2	3	-2	-2	-1	2	1	1	2	-1	45
035	1	2	-3	-2	-2	2	-2	-2	-2	-2	42
036	2	2	-2	2	1	2	-2	1	2	-2	42
037	3	-2	-1	-1	-2	-2	-1	-2	2	-1	35
038	2	2	-2	2	2	2	1	2	3	1	37
039	2	-2	-2	-2	-2	3	2	1	2	-3	43
040	1	2	1	1	-2	3	1	1	1	-1	38
041	-3	2	3	3	1	2	-3	-3	1	-1	26
042	3	3	2	2	1	2	-2	2	3	-3	43
043	-1	-2	2	3	3	2	1	-1	3	-2	24
044	-2	3	2	3	3	3	-3	3	2	-1	35
045	2	-1	-1	-1	-1	3	-3	1	2	-1	44
046	1	2	-1	1	2	1	-1	1	1	-1	36
047	1	1	3	2	2	1	-1	-2	2	-1	28
048	1	-1	1	2	-3	-3	-3	1	1	-1	33
049	2	2	-2	-3	-3	3	-3	2	-3	-3	50
050	1	-2	3	3	3	2	1	-3	-2	3	13
051	-2	2	3	-2	2	3	-3	2	2	-2	39
052	1	-2	-3	-2	2	-1	-3	1	3	-2	40
053	2	2	1	-2	1	2	1	-1	2	1	35
054	2	2	1	1	-1	2	-1	1	-1	-2	38
055	1	1	2	2	2	-2	1	-2	-2	-2	21
056	-2	2	2	2	2	-2	-2	-1	1	-1	25

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	Total
057	1	-2	-2	-1	-2	2	1	-1	1	-2	37
058	1	1	2	-2	-2	2	-2	-2	1	-2	39
059	3	1	-2	-2	-1	2	-2	1	2	1	45
060	1	2	2	2	-3	-2	-2	-1	-1	-1	31
061	2	3	1	-2	-2	3	-2	-1	2	-3	47
062	1	2	2	2	2	2	-2	-2	-1	1	27
063	1	1	2	1	1	-3	2	-2	2	3	20
064	1	2	2	3	2	2	-2	1	2	-2	35
065	2	-3	-2	-2	-2	2	-3	1	1	-1	43
066	2	2	-3	1	-2	2	-2	-1	2	-3	46
067	3	1	1	3	-1	2	-1	2	3	1	38
068	-2	2	3	3	2	2	-2	-3	3	1	25
069	2	3	-3	-3	-2	3	-2	2	2	-2	54
070	3	2	1	-3	-2	2	-2	-1	3	1	44
071	2	2	-1	1	2	-2	-3	2	3	0	38
072	3	-3	2	1	2	-2	3	3	3	2	24
073	1	3	-3	2	-3	3	-3	-1	-1	-3	45
074	3	3	3	3	3	1	2	3	1	3	27
075	-1	-2	1	1	2	1	-3	-1	1	-1	28
076	1	2	-2	-2	-1	2	-1	-2	3	-3	45
077	-1	1	-2	2	1	1	-2	2	3	-3	40
078	2	2	1	1	-3	3	-3	-1	2	-2	44
079	3	2	-2	1	-1	2	-2	3	2	-2	48
080	2	1	3	3	3	2	-3	1	2	-3	35
081	1	1	2	2	1	-1	1	2	2	2	27
082	1	1	-1	-1	1	1	-1	1	2	-2	40
083	3	3	2	-2	-2	-1	-2	-1	2	-2	42
084	1	2	-1	-1	-1	2	-2	-1	1	-1	41
085	-1	-2	2	3	3	1	3	-1	1	1	16
086	2	2	-2	-2	-2	2	-2	2	2	-2	50
087	1	-1	1	-2	-2	2	-2	-1	1	-2	39
088	1	2	-3	-3	2	2	1	1	3	-2	44
089	1	1	-2	1	1	1	-3	2	2	-1	41
090	3	2	-2	-2	-2	3	2	3	2	-3	50
091	-1	2	1	-2	-3	2	-2	-2	2	-2	41
092	2	3	2	3	1	2	1	3	1	1	33
093	1	-2	-2	-2	3	3	1	-3	1	-2	32
094	1	2	-1	1	-1	1	-2	1	-1	-1	38
095	1	2	2	-2	2	2	-3	-1	-2	-3	36
096	1	-3	2	2	2	2	-1	-2	-2	-2	23
097	1	2	2	-2	-3	3	1	-1	1	-2	40
098	-3	-3	3	3	3	1	-1	-3	-3	1	10
099	1	3	2	-3	-3	3	-3	1	1	-1	47
100	1	1	-1	-1	-1	2	-2	1	3	2	41
101	-1	2	-3	-2	-2	3	1	-3	-1	-1	37
102	-1	1	1	3	1	2	-2	-1	-3	-3	28
103	2	2	-2	-2	-2	2	-2	2	1	-2	49
104	1	-2	2	2	2	2	-2	-2	-2	1	22
105	2	1	-2	-2	-3	2	-1	-2	1	-1	43
106	2	2	2	-2	-2	2	-2	2	2	1	43
107	1	-2	-3	3	2	3	-3	1	2	-3	39
108	1	-2	2	-1	-3	-1	1	-3	2	-1	29
109	1	2	2	2	2	2	-2	-2	2	-2	33
110	2	2	-2	2	1	2	1	1	1	1	35
111	-1	1	-2	-2	-2	3	-3	1	2	-3	48
112	1	1	2	2	2	2	1	1	1	-1	30
113	1	2	3	3	2	2	-2	1	2	-3	35
114	2	-2	3	3	-1	3	1	1	-1	-2	29
115	1	2	2	3	-1	3	2	1	2	-2	35
116	3	2	1	-2	-2	-2	3	1	-2	-2	44
117	1	2	1	1	-3	2	-2	-1	2	-2	41

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	Total
118	2	2	-3	-1	-3	3	-3	-3	2	-3	49
119	3	2	1	3	3	1	1	1	2	-2	33
120	2	-3	2	3	3	3	-2	2	2	2	28
121	2	2	1	3	-2	2	-3	-2	-2	-2	35
122	3	2	-2	-2	-1	-3	-2	1	2	-1	43
123	-3	2	3	2	2	-2	2	2	-3	-3	20
124	1	-1	-1	2	2	2	-1	-1	1	1	29
125	-1	3	-3	1	-1	3	-3	-1	1	-3	44
126	3	2	-3	-3	-3	3	2	2	3	-3	53
127	1	3	1	-1	-1	1	-1	-1	-1	-1	36
128	1	2	-3	2	-2	2	1	-1	-1	-2	37
129	1	1	-1	2	2	2	-2	-1	2	-2	36
130	1	2	2	-2	-2	3	-3	-2	2	-3	44
131	2	2	-2	-2	-2	2	1	-2	-2	-2	39
132	-1	3	-2	-2	-3	3	1	1	1	-1	44
133	1	3	1	3	3	3	3	3	2	1	31
134	2	2	2	-2	-2	-1	-1	-1	2	1	36
135	2	3	-2	3	1	2	1	1	1	1	35
136	1	1	2	-2	1	2	-3	-3	1	-3	37
137	1	2	1	-2	-3	-1	-1	1	1	-1	40
138	-2	1	-1	2	2	2	-2	1	-1	-1	31
139	3	3	2	2	2	2	2	1	1	1	31
140	-2	2	-2	-1	-3	-1	-2	-3	1	-1	36
141	1	-2	-2	2	-2	1	-2	1	2	1	36
142	1	-1	1	2	-1	2	-1	-1	1	1	28
143	1	3	1	1	3	-1	-1	-3	-1	-1	26
144	1	2	-2	2	1	2	1	-2	1	-1	33
145	-2	2	3	1	1	-2	-2	1	-1	1	24
146	1	2	-1	2	-1	2	2	-2	3	-2	36
147	-3	3	-2	-2	-1	-3	-2	-1	-1	1	31
148	-1	2	1	-1	2	2	-1	-2	-1	-1	30
149	2	3	-2	-2	-2	2	-2	2	2	-2	51
150	-1	2	2	1	2	1	1	-1	-1	-2	26
151	-3	1	1	2	2	-2	2	-2	1	-1	19
152	-2	2	2	2	3	1	-1	-1	1	-1	26
153	2	1	3	2	2	-1	2	-1	2	-3	27
154	2	2	-2	-2	-3	1	-3	-1	1	-2	47
155	2	-2	1	2	2	2	1	1	2	1	29
156	1	1	-1	-2	-2	1	-2	-1	1	-1	41
157	-1	3	2	3	2	-1	-3	1	1	-1	30
158	1	-2	1	2	3	2	-3	2	2	-2	34
159	2	2	2	-2	-2	2	-2	1	1	-2	44
160	1	2	-2	2	-2	2	-2	-2	3	-2	42
161	-1	2	1	-1	-1	1	1	-2	-1	-1	30
162	-1	3	-1	-1	-2	1	2	-2	1	-1	35
163	-2	1	2	3	3	2	1	3	3	3	25
164	3	2	3	3	2	2	-3	-3	3	-2	34
165	2	2	1	2	2	1	3	2	3	2	30
166	2	2	-2	-1	-2	3	-2	-3	-2	-1	40
167	1	-2	-3	-3	3	3	-3	1	3	-3	45
168	2	2	1	2	1	2	-2	3	2	-1	40
169	1	-2	-1	2	3	3	3	1	2	3	25
170	1	1	-1	-2	-2	2	-3	2	2	1	45
171	1	2	3	-2	-2	2	-1	-2	2	-2	39
172	1	-2	2	2	2	-2	2	2	1	2	20
173	1	-2	2	2	2	-2	2	2	1	2	20
174	-2	3	-3	-3	-3	3	-3	-3	-3	-3	43
175	3	3	-3	-1	-1	-3	-1	2	3	-2	46
176	-3	2	1	2	3	1	-1	-1	-2	-2	24
177	2	2	-1	2	-2	2	-2	1	2	-2	44
178	-1	-2	1	2	-1	1	-2	1	-1	1	27

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	Total
179	-2	1	1	1	2	2	1	-1	-2	2	21
180	2	-2	-1	2	2	-1	1	-3	1	2	21
181	-2	2	3	-2	-1	2	-1	-1	3	-3	38
182	2	2	-2	-1	-2	3	-2	3	3	2	48
183	-1	-2	2	3	-1	2	-1	1	1	-2	30
184	1	3	1	3	3	1	1	-3	-3	-3	24
185	2	2	-2	1	-2	1	-3	2	2	-2	47
186	1	3	1	3	-2	-1	1	-1	2	-2	33
187	-3	-3	3	3	3	-1	3	-1	1	1	10
188	-2	-2	1	1	-1	1	-2	1	1	-2	32
189	2	-2	2	1	-2	2	-3	2	2	2	36
190	2	2	-2	-1	1	-2	-2	-2	-2	2	30
191	2	2	-1	-1	1	-2	2	-2	-1	2	26
192	3	3	-1	-2	-3	2	-2	3	2	-2	53
193	2	-2	-2	2	3	1	-1	2	2	-2	35
194	-1	1	-1	1	2	1	1	-1	1	-1	29
195	-2	-2	2	2	3	1	-1	2	2	2	23
196	2	-2	-1	2	-1	3	-3	-2	3	2	35
197	2	2	2	3	2	3	2	2	2	-2	34
198	1	3	3	3	3	-3	1	-2	-2	3	14
199	-1	-2	1	3	2	1	-2	2	2	1	27
200	2	2	2	-2	-2	2	2	-2	1	1	34
201	-1	2	2	1	-1	-1	-2	-1	1	2	28
202	2	2	3	1	-2	1	1	-2	1	1	30
203	1	1	2	3	1	1	1	-3	3	1	25
204	-1	1	-1	-1	-2	2	1	-1	1	2	33
205	1	3	-3	-2	-2	2	-1	1	-2	2	41
206	-2	-2	2	3	3	2	2	-2	-2	-2	16
207	1	1	2	3	1	1	-2	1	2	-1	33
208	-1	1	2	2	2	2	1	1	2	2	26
209	1	2	1	3	3	3	-3	2	2	-1	37
210	-2	2	3	2	1	-1	-2	-2	2	2	23
211	2	1	-2	2	2	2	1	1	2	2	33
212	1	3	-2	-3	-3	3	-3	-2	3	-2	51
213	1	2	1	3	2	3	-2	-1	1	2	30
214	2	-2	1	1	1	2	1	2	2	1	31
215	2	1	1	1	-1	1	-1	-1	1	-1	35
216	1	2	2	3	3	-1	-1	1	3	2	27
217	2	1	1	3	2	2	1	2	2	1	31
218	-1	-1	1	2	-1	2	-2	-1	2	-2	33
219	-2	-1	3	3	3	2	3	-1	1	-3	20
220	1	2	1	2	3	2	-2	1	1	1	32
221	-1	1	1	2	1	1	-1	1	1	1	29
222	2	-1	3	2	2	2	2	2	1	2	25
223	-3	-2	2	2	2	1	-2	-2	-2	1	17
224	-2	2	1	-2	-2	1	1	-3	1	-3	34
225	1	2	1	-2	-1	-1	3	-3	-2	-3	29
226	-1	-1	-1	-2	-2	-1	-1	-1	2	-1	35
227	-2	2	3	3	3	-2	2	-2	2	2	15
228	1	2	-1	2	2	2	-2	-1	1	-1	35
229	1	1	1	1	2	-1	1	-1	1	-1	27
230	2	-1	-2	1	1	-1	2	1	2	1	29
231	-2	-3	3	3	3	3	3	1	2	-1	20
232	-2	-2	1	1	3	-2	-1	1	-1	2	18
233	2	1	-3	3	3	3	-3	3	3	-3	45
234	1	2	-1	-2	1	2	1	1	2	2	37
235	1	1	2	3	3	1	1	2	1	1	26
236	-1	1	-2	1	-2	1	-3	-1	2	-2	40
237	-3	3	2	3	3	-2	3	-3	-3	3	08
238	1	2	1	3	1	2	-2	1	1	-1	35
239	-2	3	-1	-1	-2	1	-1	-3	-2	2	30

Scale Item Number

	1	2	3	4	5	6	7	8	9	10	Total
240	-2	1-1	2	2-2	2-2	3	2				15
241	-2	2-1	-1	2	1-1	1	1	-2			36
242	3	2-2	1	1-2	2	1	1	1			32
243	1-2	2	3	2	1	2	2	1	2		22
244	1	2	2	3	2-3	3-2	3	2			19
245	1	2	2	3	1	2-2	2	2	-2		33
246	1-2	2	3	2	1-1	1-2	2				19
247	2	1	1-1	-2	2-3	1	2	-2			45
248	1-2	3	3	2	1-3	2-2	-1				22
249	1	1	2	2	2	1-1	1	1	-3		33
250	-1	-2	-3	-3	-2	2-1	-1	2	-2		39