

THE PERCEPTION OF OCCLUSAL CONDITIONS AND PROFILES
IN A MITCHELLS PLAIN SCHOOL POPULATION

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DECLARATION

I, declare that "THE PERCEPTION OF OCCLUSAL CONDITIONS AND PROFILES IN A MITCHELLS PLAIN SCHOOL POPULATION" is my own work and that all the sources I have quoted have been indicated and acknowledged by means of references.

SIGNED:



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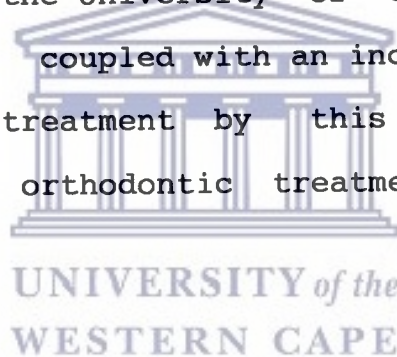
DEDICATION

This thesis is dedicated to my family, whose sacrifice made my education possible.



ABSTRACT

The prioritisation of treatment opinions by state funded orthodontic programmes has become essential in the planning of services. Numerous indices rate the severity of occlusal conditions; however, all do not adequately address the problem. It is recommended that a ranking of occlusal conditions be obtained from the community which the index is designed to serve (Shaw and Robertson, 1975). With the relocation of the Dental Faculty of the University of the Western Cape to Mitchells Plain, coupled with an increase in demand for orthodontic treatment by this community the prioritisation of orthodontic treatment needs has become essential.



Two samples, one consisting of 12 - 14 year old school children ($n = 351$) and the other of senior dental students ($n = 23$) were selected. Four schools in Mitchells Plain were randomly chosen. Occlusal conditions and profiles were selected from patient records by a panel. Slides were made utilising computer graphics. Respondents completed a questionnaire recording socio-demographic data, a rating of orthodontic self-image and a rating of a series of slides. In the latter the subjects were asked to view selected occlusal conditions and profiles.

They responded to two questions, relating to a ranking of the severity of the condition and the consideration of the necessity of treatment for the condition.

The results indicated that the majority of the school children and dental students are satisfied with their appearance. Similar ratings to those found in other studies were obtained with the "ideal" Class I occlusion receiving the best rating and the severe Class III and severe crowding receiving the worst rating. An inverse relationship of treatment recommendation and rating was found with conditions rated best receiving a low rating of treatment. A treatment priority based on the perception of occlusal conditions and profiles 12 - 14 year old school children and dental students was recommended.

OPSOMMING

Die prioriteitsbepaling van behandeling deur Staatsbefondsde ortodontiese programme het noodsaaklik geword in die beplanning van dienste. Daar is egter talle aanduidings wat die erns van okklusale toestande bevestig, maar wat egter nie altyd genoegsame aandag meebring nie. Dit word dus aanbeveel dat 'n voorkeursbepaling van die okklusale toestande van die gemeenskap vir wie so 'n indeks opgestel word, bekom word (Shaw en Robertson 1975). Met die vestiging van die Fakulteit van Tandheelkunde van die Universiteit van Wes-Kaap te Mitchellsplain tesame met 'n verhoogde aanvraag na ortodontiese behandeling deur hierdie gemeenskap, het voorkeursbepaling van ortodontiese behandeling noodsaaklik geword.

Twee voorbeelde, een bestaande uit 12-14jarige skoolkinders (n=351) en die ander van senior tandheelkundige studente (n=23) is geselekteer. Vier skole in Mitchellsplain is lukraak gekies. Okklusale toestande is deur 'n paneel van ortodontiste uit pasiënte-rekords/verslae geselekteer. Grafiese rekenaarskyfies is gemaak. Respondente het 'n vraelys ingevul wat uit drie dele bestaan het, naamlik 'n sosiaal-demografiese waardering, 'n selfwaardering en 'n skyfie-waardering. In laasgenoemde geval is die proefpersone gevra om na geselekteerde okklusale

toestande en profiele te kyk. Hulle het op twee vrae gereageer, naamlik die waardasie van 'n toestand en die wenslikheid van behandeling van die toestand.

Die resultate het getoon dat die meerderheid skoolkinders en tandheelkundige studente tevrede was met hul eie voorkoms. Soortgelyke waardasies soos die in ander studies is verkry in die "ideale" klas I voorkoms wat die beste waardasie gekry het, en die ernstige klas III en opeenhoping wat die swakste waardasie gekry het. 'n Omgekeerde verwantskap van behandelingsaanbeveling en waardasie is gevind tussen toestande wat hoog gewaardeer is en 'n lae behoeftebepaling vir behandeling ontvang het en laag-gewaardeerde toestande en 'n hoë behoeftebepaling vir behandeling.

'n Behandelingsvoorkeur gebaseer op die waarneming van okklusale toestande en profiele van 12-14 jarige skoolkinders en tandheelkundige studente word aanbeveel.

TABLE OF CONTENTS

	<u>PAGE</u>
I. TITLE	i
II. DECLARATION	ii
II. ACKNOWLEDGEMENTS	iii
IV. DEDICATION	v
V. ABSTRACT (English)	vi
VI. OPSOMMING	viii
VII. TABLE OF CONTENTS	x
VIII. LIST OF TABLES	xiii
IX. LIST OF FIGURES	xv
1. INTRODUCTION	1
2. LITERATURE REVIEW	7
2.1 Introduction	8
2.2 Occlusion and Malocclusion	9
2.3 Ethnic and racial preferences and occlusal traits	16
2.4 Facial aesthetics	18
2.5 Psycho-social behaviour and its affect on the perception of occlusal conditions	25
2.6 Indices	32



3.	AIMS AND OBJECTIVES	37
4.	MATERIALS AND METHOD	39
4.1	Population	40
4.2	Sample	41
4.3	Measurement	45
4.4	Variability	52
4.5	Pilot study	53
4.6	Data collection	54
4.7	Statistical Analysis	55
4.8	Ethical considerations	55
5.	RESULTS	57
5.1	Pilot Study	58
5.2	Sample selection	58
5.3	Socio-economic indicators	60
5.4	Satisfaction with appearance	61
5.5	Teasing	68
5.6	Ranking of occlusal conditions and profiles	69
5.7	Treatment recommendation	74
6.	DISCUSSION	77
6.1	Orthodontic treatment in Mitchells Plain	78
6.2	Satisfaction with appearance	80
6.3	Socio-economic variables	85
6.4	Ranking of dentitions	86
6.5	Ranking of profiles	87
6.6	Comparison of dental and facial appearance	88

	Page
6.7 The Mitchells Plain concept of normal occlusion	89
6.8 Recommendation of treatment	89
6.9 Prioritisation of treatment	91
7. CONCLUSION	92
8. APPENDICES	95
8.1 Appendix 1 - Psychological definitions	96
8.2 Appendix 2 - Nymegen Decision Models	100
8.3 Appendix 3 - Questionnaire	103
8.4 Appendix 4 - Consent form	112
8.5 Appendix 5 - Arrangement of slides in slide show	113
8.6 Appendix 6 - Comparison of Mitchells Plain sample with Nymegen Group	114
9. REFERENCES	115

LIST OF TABLES

	<u>Page</u>
Table 1 : Distribution of school sample by school, age and sex	58
Table 2 : School children sample after exclusion	59
Table 3 : School children excluded from sample	59
Table 4 : Satisfaction with general appearance (question 12)	62
Table 5 : Satisfaction with dental appearance (question 13)	62
Table 6 : Satisfaction with facial appearance (question 17)	63
Table 7 : Satisfaction with size of own teeth (question 14)	64
Table 8 : Satisfaction with colour of own teeth (question 15)	64
Table 9 : Rating of own appearance compared to that of peers (question 18)	65
Table 10: Factor considered the most important for appearance by School children (question 19)	66
Table 11: Factor considered the most important for appearance by Dental students (question 19)	67
Table 12: Frequency of teasing for facial appearance (question 22)	68

	<u>Page</u>
Table 13: Frequency of teasing for dental appearance (question 23)	68
Table 14: Ranking of occlusal conditions by School children	70
Table 15: Ranking of occlusal conditions by Dental students	71
Table 16: Ranking of profiles by School children	72
Table 17: Ranking of profiles by Dental students	73
Table 18: Assesment of treatment consideration of occlusal conditions; verses percentage indicating treatment	74
Table 19: Assesment of treatment priority verses percentage indicating treatment required	75
Table 20: Appendix 5 - Arrangement of slides in slide show	113

LIST OF FIGURES

	<u>Page</u>
Figure 1: Occlusal conditions as listed	47
Figure 2: Profiles as listed	49
Figure 3: Patient weighted clinical criteria for decision model in a developed country	100
Figure 4: Patient weighted clinical criteria for decision model in developing country	101



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INTRODUCTION



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"Beauty is in the eye of the beholder". This is often quoted as the yardstick by which the aesthetic values of people and objects are judged. What we consider beautiful, attractive or a pleasure to behold, is determined by our preferences. These are in turn governed by our social and cultural philosophies or norms. The attitude society has to facial and oral aesthetics is no exception. Many lives have been strongly influenced by the prevailing perception of facial attractiveness.

The dentition plays a major role in facial aesthetics. In some societies the teeth are "mutilated" (by Western standards) to enhance beauty, or show an individual's position in the social hierarchy or provide group identification (van Reenen, 1978 and 1985). The dentally attractive stereotype differs from region to region, with the culture of the people often determining its nature.

Edward Angle, the father of modern orthodontics, considered the mouth as the most important feature making or marring the character of the face. The form and beauty of the mouth is itself dependant on the occlusal relationship of the teeth (Angle, 1907). It is therefore not surprising that orthodontics has since its inception been concerned with aesthetics.

The dental fraternity has come to view as normal those faces with Class I occlusions (Tweed, 1944). The concept of normal is an indispensable tool for the orthodontist in the total treatment of the individual (Merrifield, 1966).

In Western society the media presentation of beauty has had a major influence on the judgment of the lay public. The perfect face is seen to be that of the "Hollywood standard" which has a Class I profile with well aligned dentition.

Both the description (popularly) and the definition (scientifically) of malocclusion has been subject to considerable variation. The definition ranges from the simple, "crooked teeth", found in popular publications to the more complex models proposed by present day researchers (World Health Organisation, 1962; Baume and Marèchaux, 1974; Dorland medical dictionary, 1974; Salzmann, 1966). Aesthetics pertaining to malocclusion is largely determined by cultural norms, the media, peer pressure and is also influenced by health professionals.

Health care professionals may not possess a high degree of sensitivity to the patient's perceptions (Giddion, 1974). This may be further aggravated if the professionals and patients are not from the same cultural background.

Malocclusions are often evaluated and sometimes treated on an aesthetic basis, which may only be remotely related to function (Draker, 1960; Cohen, 1970; Cohen and Horowitz, 1970; Baume and Marèchaux, 1974; Jago, 1974; Shaw et.al., 1975; Cons et.al., 1978).

There are numerous indices of malocclusion which aim to provide qualitative or numerical assessments of the occlusal state of the individual (Draker, 1960; Howitt and Shaw, 1977; Salzmänn, 1968; Summers, 1971). These have been used as administrative tools in public health and epidemiological surveys. A measure of dento-facial attractiveness is absent in most of them. Also no information regarding the psycho-social effects of the malocclusion is elicited (Katz, 1978). A failure to take into account the social and cultural background of the individual is evident.

Assessment of the aesthetic values of individual traits on a dental attractiveness scale is complicated by the prevalence of concurrent traits. It had been suggested by Helm et.al., (1986) that an overall assessment of dental attractiveness may be more valid.

Priorities for the provision of state-funded orthodontic programs need to be established. Jenny and co-workers (1980) advocated cut off points that should

be determined on a scale of social acceptability instead of along a scale of individuals' perceived needs or desire for treatment. Occlusal conditions must therefore be rated by the public at large to determine their level of social acceptability. When an individual's physical attributes deviates too far from these socially defined norms, the person may be disqualified from full social acceptability. The patient's malocclusion or facial appearance then constitutes a handicap.

State-funded orthodontic programs are faced with enormous demands for treatment that often are not related to the severity of the malocclusion. The psycho-social impact of the malocclusion on the individual may also not be related to the severity of the malocclusion. The FDI noted that there is no objective way of evaluating these factors in relation to the disharmonies of occlusal traits. A precise method to determine or predict when the malocclusion may become a social handicap for the individual also does not exist (Draker, 1960; Freer, 1968; Cons et.al., 1978).

The lack of orthodontic services at dental clinics run by the Department of Health in the Western Cape has forced the majority of the patients from this region to seek orthodontic services at the Dental Faculty of the University of the Western Cape (U.W.C.).

Furthermore, a large number of referrals are made by general dental practitioners to the orthodontic department. Most of these children do not have the financial means to afford treatment in the private sector.

A need exists to determine the perception of malocclusion in the community served by the Oral Health Centre of U.W.C., before any index for prioritisation of treatment can be established.



LITERATURE REVIEW



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2.1 INTRODUCTION

Before the perception of occlusal conditions can be quantified, the controversy surrounding the definition of occlusal conditions, the present methods of measurement of occlusal traits, and the relationship between the aesthetics and the psychical effects of malocclusion should be understood.

The demand and need for orthodontic treatment is based on the perception of the malocclusion by the individual (Proffit *et. al.*, 1992). This perception is affected by ethnicity, cultural norms and values, and the psycho-social effects of malocclusions.

Current indices rank people in order of the severity of their malocclusion. It would be useful if these indices could be used in the prioritisation of orthodontic treatment. None of the current indices are able to do this without first obtaining some idea of the ranking of occlusal traits within the community (Shaw and Robertson, 1975).

An ideal index should take into account the functional and psychological impairment, (determined by trained personnel) and the social impairment (determined by the community). Factors such as patient compliance and oral hygiene should also be considered.

2.2 OCCLUSION and MALOCCLUSION

2.2.1 OCCLUSION

The concept of occlusion is central to most disciplines in dentistry and especially to orthodontics. However, although widely written about, a precise definition is lacking. This problem was highlighted by Lombardi (1982) who described it as an "imprecise word generally used in an imprecise way".

The Shorter Oxford dictionary (1970) defines occlusion as the act of closure or being closed. In dentistry occlusion has been ascribed both a functional and a static role. The functional role involves the entire masticatory system including the teeth, muscles, and joints (Draker, 1960; Salzmann, 1968; Ramfjord and Ash, 1963). The static connotation is a morphological one and only involves the contact of the dentition (Jacobson, 1967; Lundeen and Gibbs, 1982).

Terms describing the numerous permutations of occlusal types such as ideal occlusion, normal occlusion and malocclusion may therefore have different meanings for different investigators (Summers, 1971; Cons et.al., 1978; Ramfjord and Ash, 1963).

An additional problem is that occlusal relationships range from ideal occlusion to the severest of malocclusions and constitute a continuum with no demarcations separating the varying degrees (Draker, 1960; Summers, 1971; McLain and Proffit, 1985).

No studies appear to have been done to determine the lay persons' concept of occlusion. Terms such as ideal occlusion and normal occlusion are definitions peculiar to the dental profession.

2.2.2 IDEAL OCCLUSION

Ideal occlusion presupposes that every tooth in the dentition is in exact alignment within the arch and when they interdigitate (Maxwell, 1937; Massler and Frankel, 1951; Altemus, 1959). However, due to genetic dimorphism and environmental influences, ideal occlusion cannot exist in humans (Hellman, 1921; Draker, 1960; Jacobson, 1967; Salzmann, 1974).

2.2.3 NORMAL OCCLUSION

Many investigators have attempted to define normal occlusion (Angle, 1899; Hellman, 1921; Stoller, 1954; Begg, 1954; Dempster *et.al.*, 1963; Ackerman and Proffit, 1969; Baume and Marèchaux, 1974; Andrews, 1972).

Angle proposed a classification which was readily accepted by the dental profession as it brought order to the confused state of dental relationships (Proffit et.al., 1986). A major shortcoming of this postulate is that it assumes the position of the maxillary molar to be static (Stoller, 1954; Akapata and Jackson, 1979). Stoller (1954) expanded on Angle's classification by relating the upper first molar to both the lower first and second lower molars.

Andrews (1972) contributed to this debate by defining his six keys. Although he perpetuated the static concept he challenged the manner in which orthodontists had been wont to use only the molar relationship and interincisal angle in their assessment of occlusion.

Furthermore, a major problem encountered in defining normal occlusion is the assumption that it is synonymous with ideal occlusion (Johnson, 1923; Lombardi and Bailit, 1972; Lombardi, 1982).

In the biologic sense, normal occlusion implies a range of variation in tooth alignment and jaw relationship which is compatible with normal function and the absence of disease (Hellman, 1921; Johnson, 1923; Lombardi and Bailit, 1972; Lombardi, 1982).

A more apt definition would be that normal occlusion is one within the accepted deviation from the ideal that does not constitute functional or aesthetic problems (Houston, 1975, 1976; Houston and Tulley, 1986). No clearly defined limits describe the range of normal occlusion. The profession is faced with the problem of not knowing how far from the norm the occlusion must deviate to be termed a malocclusion.

Orthodontic treatment goals however, continue to be based on the ideal static occlusion as expounded by Andrews (1972) and often any deviations from this are not regarded as excellence in orthodontic treatment.

For a particular population the definition of normal occlusion has to be a statistical one. It should include a range of acceptable variation compatible with health and normal function (Lombardi, 1982). This assertion provides an important argument in the support of research directed at establishing the range of normal occlusions in the local setting.

2.2.4 MALOCCLUSION

Deviations from the normal that may be considered aesthetically or functionally unsatisfactory are called malocclusions (Houston and Tulley, 1986). Numerous other definitions of malocclusions also exist (WHO, 1962; Salzmann, 1966; ; Baume and Marèchaux, 1974; Dorland Medical Dictionary, 1974; Baume, 1970; Houston, 1975).

The problem with most of these definitions is that they do not indicate the cut off points between normal and malocclusion. Many of the definitions are imprecise so that what is defined as a malocclusion in one population group may be normal in another. For example, bimaxillary protrusion in Negroid races and Class III in the Polynesians whom may be considered normal occlusions in these groups are malocclusions by western standards (Baume and Marèchaux, 1974; Profitt et. al., 1992).

The general public clearly does not view malocclusion in the same way as orthodontic professionals (Prah Andersen, 1975; Shaw and Robertson, 1975). Their perception of malocclusion is determined to a large extent by cultural norms, the media, peer pressure and the advice of health professionals. Malocclusions are evaluated and treated on an aesthetic basis, with

little functional consideration (Draker, 1960; Cohen, 1970; Cohen and Horowitz, 1970; Baume, 1970; Jago, 1974; Shaw and Robertson, 1975; Cons et.al., 1978).

It is suggested that a value judgement has to be made to determine the extent that a particular occlusion must deviate before it can be labelled a malocclusion. This value judgement should be based on clear criteria, which may include aesthetic values, body image, anatomical deviations from morphological norms as defined by clinicians, as well as the cultural and social norms of the community (Ferguson, 1988).

Numerous methods of assessing and classifying malocclusion have been proposed since 1889. They range from the simple designation of regular and "irregular" occlusion to the more complicated systems proposed by various researchers (Hellman, 1921; Simon, 1926; Korkhaus, 1928; McCall, 1944; Sclare, 1945; Moore, 1948; Andrews, 1972; Williams and Stephens, 1992). Most of the methods of assessment were based on Angles designation of "normal" and "abnormal". A few investigators include in their classification the relationships of the anterior segments (Hellman 1921; Korkhaus, 1928; Williams and Stephens, 1992).

Methods of defining and classifying malocclusion are essential in orthodontics. All the current classifications are based on the principle of comparing the malocclusion with some ideal.

If a scale of severity is to be established, which is to be used in treatment prioritization, then it is imperative that the perceptions of malocclusion in a community be investigated. In this way the perceived severity of the actual malocclusion in the community may be quantified (Shaw and Robertson, 1975).



2.3 ETHNIC AND RACIAL PREFERENCE OF OCCLUSAL CONDITIONS

An important consideration in the process of establishing perceptions of occlusal conditions is the influence of ethnic and racial values on aesthetics.

There exists great controversy concerning the definitions of the words "race" and "ethnicity". The more recent usage of the term ethnic group refers to a nation or population with a common bond such as a geographical boundary, a culture or language, or being racially or historically related (Richardson, 1980).

The use of racial terminology has been criticised and debated by Chikte et.al., (1990). The use of such terminology in this study will be for descriptive purposes only.

2.3.1 RACIAL PERCEPTION OF OCCLUSAL TRAITS

The occlusal traits present within populations vary greatly. There may also exist a preference for different occlusal traits by different population groups. What may be aesthetically acceptable to one may not be to another.

In a study by Kiyak (1981), the relationship between racial and individual features and their effect on dental aesthetic values of Pacific Asians and Caucasians were examined. It was noted that while individual differences emerged, aesthetic ratings were not related to racial type or to the individual's own malocclusion.

Researchers who have examined cross-cultural differences have found similar ratings between Blacks and Whites (Shaw et.al., 1979), between Britons and Americans (Tulloch and Shaw, 1984), Americans, East Germans and Australians (Cons et.al, 1983). In all these studies Caucasian facial form was the most preferred type. These studies show consistency across ethnic groups in their perceptions of facial aesthetics. However, it should be borne in mind that most of these population groups had their origins in Europe and this may account for the similar ratings.

While dental professionals prefer flat lower face profiles, both black and white lay people prefer fuller, more protrusive profiles. This was illustrated by Riedel, (1957) and by Peck and Peck,(1970). Samosodien (1986) showed similar findings in a Western Cape Coloured sample.

From a review of the literature on this subject there seems to be some consistency in the rating of aesthetic preferences by different ethnic groups. However, minor variations do exist (Shaw et.al., 1979; Kiyak, 1981; Cons et.al, 1983; Tulloch and Shaw, 1984).

Perceptions in Southern Africa may vary from that of other Western societies. An evaluation of perceptions of the people in Southern Africa would serve to clarify this debate.

2.4 FACIAL AESTHETICS



2.4.1 DEFINITION

An important determinant of how people perceive occlusion and malocclusion is intimately tied up with their understanding of aesthetics and particularly the role facial aesthetics plays in their social interactions. To understand this role, a brief review of some historical and orthodontic perspectives follows.

The term aesthetics appeared in the literature as early as 1753 in Alexander Baumgarten's "Reflections on Poetry" (Pepper, 1974). He had recognised the need to include sensory and perceptual cognition in certain

areas of appreciation and, drawing on the Greek word for perception namely *aisthetikos*, Baumgarten coined the word aesthetics for the science of perceptual cognition (Beder, 1971). It should be emphasised, however, that the development and conception of the principles underlying the appreciation, of those qualities that are pleasing to the eye dated back to the Ancient Greeks (Powell and Rayson, 1976).

Many definitions have appeared in the literature (Goldstein, 1969; Powell and Rayson, 1976). Implied in these definitions is an underlying principle whereby certain attributes are given precedence over others on the part of the perceiver.

Many workers in various fields of study including anthropology, the fine arts and the healing arts have over the years shared a common interest in facial aesthetics (Peck and Peck, 1970). However, despite this almost universal usage, Lusterman (1963) found that most orthodontists had their own ideas and ideals concerning aesthetics.

Aesthetic judgment depends upon information and/or experience, which results in wisdom, further enabling the individual to relate, compare, cross-refer, collate, and weigh the added information. Aesthetic judgment needs to be objective in its man-made

evaluative standards if it is to be shared by other people, even though they have developed these standards independently (Goldstein, 1969).

2.2.4 HISTORICAL PERSPECTIVE

Peck and Peck (1970) suggested that aesthetic awareness probably developed some 35,000 years ago in Palaeolithic man. However, the conscious consideration of facial aesthetics was probably minimal among people whose daily existence depended on obtaining the basic necessities to survive.

The Egyptians 5,000 years ago recorded their aesthetic attitudes in art. People of high social ranking were portrayed with "ideal" proportions (Peck and Peck, 1970).

Classical Greece was the first to express the qualities of facial beauty through philosophy and sculpture (Carpenter, 1959; Peck and Peck, 1970). The Greeks also introduced a mathematical assessment of beauty, based on the assumption that beautiful creations respected certain mathematical or geometrical laws such as the golden proportion (Peck and Peck, 1970; Powell and Rayson, 1976; Ricketts, 1982; Levin, 1978).

In their study on facial aesthetics, Peck and Peck (1970) observed that from the end of the fourth century A.D. harmonious proportions in art were no longer being governed by nature but by principles of moral significance. Aesthetics began to put an emphasis on spiritual beauty.

The Dark Ages followed and in this period any consideration of physical beauty and human body proportions continued to be suppressed.

It was not until the Renaissance in the fifteenth century that Western Civilization once more concerned itself with the classical traditions of Greek and Roman art. The works of Michaelangelo typified the return to the schematised nature of the art form (Peck and Peck, 1970). They also noted that art seemingly traced a recurring cyclical pattern of "classical movement" followed by an "anticlassical movement", from the Renaissance to the present.

Aesthetics is a phenomenon of the intellect and is dependent on the culture of the individual, which is sometimes tempered by ethnic recollection. For this reason certain native tribes mutilate, distort, or alter parts of their anatomy to enhance their concept of beauty. Examples include the grinding of incisor teeth (van Reenen, 1978 and 1985).

Facial aesthetics was considered early in the history of orthodontics. John Hunter in 1803 suggested that the prime objective of such treatment was to beautify the appearance of the mouth (Goldsman, 1959).

Calvin Case and Edward Angle made significant contributions during the pioneering days of orthodontics and are widely quoted for their preoccupation with aesthetics, the fine arts and its influence on orthodontic thinking (Downs, 1948; Goldsman, 1959; Neger, 1959).

In 1907, Angle wrote that "the study of orthodontia is indissolubly connected with that of art in relation to the human face. The mouth is a most potent factor in making or marring the beauty and character of the face".

Wuerpel (1937) emphasised the need for the orthodontist to appreciate the facial type being treated namely, Greek, Roman, Greco-Roman, Semitic or Mongoloid. He warned against distorting the face during orthodontic treatment.

Bishara et.al. (1985) observed that, despite the early concern for, and preoccupation with, facial aesthetics no attempts were made to quantify the static facial pattern till Simon in 1926, with his technique of

"photostatics". This was followed by Hellman (1927), who noted that faces could be categorised into specific types, based on certain recognisable parameters.

Tweed (1936 and 1954) gave special attention to facial aesthetics. He recognised the need for extraction in orthodontics to obtain an aesthetically balanced and stable dentition. It was interesting to note that Tweed (1953) placed aesthetics first in his list of treatment objectives, as he was convinced that good occlusion was possible only where there was a reasonable balance between the various components of the dento-facial complex. Though he proposed the use of his "diagnostic triangle" in treatment planning and diagnosis, Tweed (1944) felt that the "eye of the orthodontist" should become the deciding factor in determining whether the desired facial harmony had been achieved.

Downs (1948) concluded that there was a definite facial pattern for persons possessing excellent occlusions.

Although aesthetics is determined by dentists and patients alike as good proportion, facial balance and harmony, differences often emerge in definitions of "good" proportion, balance and harmony (Goldstein, 1969).

Peck and Peck (1970) in their analysis of faces previously judged by lay persons as possessing attractive features, found these to have fuller, more protrusive dento-facial patterns than the cephalometric norms in contemporary use. In a study of profiles in the Western Cape, Samsodien (1986) found that a fuller profile was preferred. This tendency toward disagreement between the ratings of dentists and the public is reflected in the opinion of Goldstein (1969), who stated that ninety percent of persons in his study judged attractive by lay persons, needed treatment to improve their dental appearance.

Discrepancies exist among professional, non professional, and patient perceptions of occlusion, even when the focus is exclusively on appearance (Shaw et.al., 1975; Albino et.al., 1978; Lewis and Albino, 1982).

Facial harmony and the interrelations of the dento-facial complex, while consistently occupying the attention of the dental profession, has always been an elusive concept. This is due to the diversity inherent in the morphogenetic pattern and also due to the indefinite nature of aesthetics (Goldsman, 1959).

2.5 PSYCHO-SOCIAL BEHAVIOUR AND ITS EFFECT ON THE PERCEPTION OF OCCLUSAL CONDITIONS

A brief review of the psychological determinants underpinning lay perceptions of occlusion and malocclusion may be appropriate. The orthodontist measures physical characteristics with precision in terms of millimetres and degrees. The psychologist measures it in less specific entities, such as verbal and social actions and attitudes.

A number of important psychological concepts are useful in helping to articulate and understand the development of the understanding of facial aesthetics. These include the idea of self concept or self image, the role of stereotypes, social identity and body image. As numerous definitions of these psychological concepts exist, an outline of these terms as they are applied in this study is given in Appendix 1 (Papali and Olds , 1992).

Perceptions of malocclusion are directly related to the psycho-social and cultural values of the community. These in turn should become an integral part of the health care system (Jenny et.al., 1980).

Psychologists have shifted their attention toward the study of morphological influences. This field of study has been referred to as the developmental social psychology of physical appearance (Adams, 1977). Positive subjective evaluations of body morphology,

commonly referred to as physical attractiveness, can influence an individual's social experience and have definite channelling effects on social and personality development. This in turn has a strong and important influence on social attributes, interactions, personality development and social behaviour.

People tend to ascribe positive personality characteristics to those who are good looking, seeing them as being more sensitive, kind, sociable, pleasant, likeable and more interesting than those who are considered unattractive (Dion, 1978).

Facial characteristics often provide false clues to personality traits. Attractive children are perceived as brighter, as having more positive social behavioural patterns and receiving more attention than their less attractive counterparts (Adams and Le Voie, 1974; Tobiasen, 1984). Physical attributes of people tend to stimulate stereotypic expectations in others of specific behavioural attributes that may not exist. Individuals with low intelligence are often depicted as having Class II division I malocclusions with severe overjets. In contradiction to this individuals with studious attributes are also similarly shown except a pair of thick lensed spectacles are added to show intelligence. This trend tends to persist throughout

the life of the individual with the physically more attractive having an advantage over the rest of the population.

Society thus appears to harbour prejudice towards persons whose physical characteristics deviate from those of the majority, or the "normal" (Stricker, et.al., 1979).

The face can be described as the show window of the mind and body. Deformities of the facial region are very difficult to conceal or disguise as opposed to other parts of the body which can be covered.

The facial region is important in communication and emotional display. The oral area is one with which verbal and some nonverbal communication occurs and represents the primary focal point during all communication. Therefore a slight facial disfigurement such as a malocclusion can frequently produce psychological effects which may be out of proportion to the extent or appearance of the disfigurement (Epstein, 1958). Up to eighty percent of children are victims of occlusal defects (Root, 1949).

Stricker et.al., (1979), stated that the psychological problems of the deformed patient stem from two separate but interrelated processes. The first being society's response to the defect. In the case of malocclusion

people may respond to the defect with lack of acceptance, ranging from mild amusement to utter dismay. The second is the individuals response to the deformity, which is partially related to the actual impairment introduced by the malocclusion.

Secord and Backman (1959) felt that the most important effect the dento-facial defect has on the life of the individual may be the adjustment in behavioural patterns that the individual has to make to accommodate to the defect. This hinges on the importance that the individual places on the teeth and oral region as clues to personality impressions compared with other somatic clues.

Pitt and Korabik (1977) showed that people's perception of their facial profiles are determined by their overall perceptions of themselves. This refers to their psychological self-satisfaction with their appearance, rather than with their actual physical appearance. People who are badly adjusted to their disfigurement are constantly concerned that others are focussing on their disability.

Considering the prejudice that people may harbour to physical, especially facial abnormalities, these anomalies may be considered to be a social handicap. The popularity, personality and general appearance of

the individual has considerable bearing on how much of a handicap the malocclusion is considered to be by that particular individual (Shaw and Robinson, 1975).

The question raised is, whether the image projected by the facially disfigured is "stereotypic" in the eyes of society and whether this effects the individual's self image. Stricker et.al., (1979) postulated that a poor or lowered self image is not due to the facial defect or the malocclusion alone but may also be a function of our society which attaches a stigma to those that are different.

Dennington and Korabik (1977) felt that a person with a malformation may receive a negative social message and the result may be self-devaluation. The lowered self-concept appeared to be due to factors other than dissatisfaction with their own appearance. What was even more surprising in their study was that the patient's self-concept level rose with the initiation of orthodontic treatment. This response occurred even though the dental appearance of a large percentage of patients was worsened during the initial phase of treatment. It was concluded that an individual's self concept is subjective and improves when their facial defect is being attended to.

While self-satisfaction with teeth and objective evaluations of dento-facial form show a degree of correlation, other factors, such as psycho-social factors may be superimposed on the satisfaction decision (Stricker, 1970; Weiss and Eiser, 1977).

Horowitz and colleagues (1971) compared children's preferences for various occlusal conditions with their self-perceived occlusion. Ideal occlusion was ranked highest by the majority of children, regardless of sex or race. There was some correlation between self-perceived occlusion and preference in others, but those with the poorest clinical occlusion were more likely to prefer good occlusion.

Studies that have evaluated the self-perception of dental characteristics indicate that people are generally aware of dento-facial abnormalities, particularly excessive overjet. With increased severity of the problem, there is an increasing level of self-recognition (Howitt et.al., 1967). Those that are less facially attractive were more likely to be mistaken in their self-evaluations (Cohen and Horowitz, 1970; Horowitz et.al., 1971; Pitt and Korabik, 1977).


Although the body image concept may not develop in children until the ages of four or five, the influence of its evaluation by the child or especially by his/her peers is extremely important (Adams and Levoie, 1974).

Adolescence is recognised as a period of biologic growth that involves dramatic physical, sexual, emotional, and cognitive changes, sometimes resulting in negative responses to physical appearance. Concern that adolescents have about their dento-facial appearance may be more intense than those of adults. Awareness of any negative aspects may even be exaggerated due to adolescent peer pressure to be attractive (Albino et.al., 1984)

It can be seen that psycho-social variables can have both a direct and an indirect effect on the perception of malocclusion, which is therefore of considerable importance with regard to treatment demand.

2.6 INDICES

Foster and Menezes (1967) state that "The assessment of occlusion for public health purposes has two main objectives. The first is to screen the population for individual treatment need and priority. The second is to obtain information for the planning of resources and facilities for orthodontic treatment at a community level."



A problem affecting the implementation of indices is that occlusal disorders do not constitute a discrete entity or variable that is present or absent, but can range from a mild form such as a single tooth being misplaced to complex malocclusions as seen in cleft palate patients. Theoretically the higher the index, the more severe the malocclusion. However, when indices are applied to the same malocclusion at different times, it has been demonstrated that they yield conflicting results (Albino et.al., 1978).

There is a wide range of reported prevalence of malocclusion which may be due to the different criteria used and not necessarily related to differences among the populations themselves.

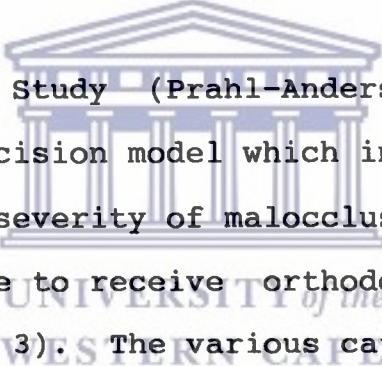
Angle's classification has been the most popular and is still being used universally despite its shortcomings. Numerous indices were proposed and tested (Massler and Frankel, 1951; Van Kirk and Pennell, 1959; Draker, 1960). None of these earlier indices measured the aesthetic factor objectively. Later indices such as the Eastman Esthetic Index (Howitt et.al., 1967), the Treatment Priority Index, (Grainger, 1967), the Handicapping Malocclusion Assessment Record (HMAR), (Salzmann, 1968) and the Occlusal index (Summers, 1971) have attempted to address this problem.

To circumvent subjectivity, the Federation Dentaire Internationale (FDI) introduced their method of measuring occlusal traits (MOT) (Baume, 1970). This MOT was recommended by the FDI Commission on Classification and Statistics for Oral Conditions (COCSTOC) and became known as the COCSTOC-MOT index. This index allows for comparison to be made of individual traits both within and between populations. It could be regarded as the most suitable for assessing malocclusion within populations (Ferguson, 1988).

Comparisons of indices clearly demonstrated that some indices perform better than others (Grewe and Hagan, 1972; Katz, 1978). This simply highlights the fact that none of the indices are ideal.

Up to the 1980'S both simple and elaborate classification systems of malocclusions failed to define the problem from a public health point of view.

An index of malocclusion to determine treatment priority must therefore take aesthetics into consideration as this is of great importance in the initiation of, and compliance with, orthodontic treatment (Tulloch and Shaw, 1984). However, the cosmetic impairment of any particular malocclusion is not readily measured.



The Nymegen Growth Study (Prahl-Andersen and Moore, 1980) developed a decision model which included factors in addition to the severity of malocclusion to decide whether patients are to receive orthodontic treatment (Appendix 2, Figure 3). The various categories of the model can be weighted differently depending on the available resources (Appendix 2, Figure 4).

The late eighties saw a trend in the development of indices emphasising the incorporation of both dental health and aesthetic components. The major problem with the aesthetic component is that it may be specific to a particular region or cultural group. These indices have to be "calibrated" for different population groups as perceptions differ, from region to region. This may seem to be contradictory to the results of the study done by Kiyak in 1981, however, it should be noted that

his study was done on Americans of different descents and thus did not represent different regions.

The first breakthrough came with the development of a standardised scale of dental attractiveness consisting of a ten point rating scale referred to as the SCAN Index (Standardised Continuum of Aesthetic Needs). It could be used to assist in the determination of treatment priority. High inter-examiner correlations were found for orthodontists, parents and children using the scale (Evans and Shaw, 1987).

Brook and Shaw, (1989) developed and tested an index consisting of two components, a dental health and function indicator based on the index used by the Swedish Dental Health Board, and an aesthetic impairment index based on the SCAN index (Evans and Shaw, 1987). The former was modified by defining five grades, with precise dividing lines between each grade. However, no attempt has been made to combine the two into an overall assessment of treatment need, or to define the scores at which treatment should be instituted.

Shaw et.al., (1991) developed a new orthodontic index with aesthetic and dental health components, the Index of Orthodontic Treatment Need (IOTN). This index is a refinement of the index of Brook and Shaw (1989).

Heikenheimo et.al., (1992) developed and tested a grading method for the evaluation of the need and priority for orthodontic treatment in public health services. This 10 grade-scale was developed from the treatment priority index (Grainger, 1967).

2.6.1 CONCLUSION

In tracing the evolution of orthodontic indices it becomes apparent that recently indices have begun to reflect the importance of determining orthodontic need and the prioritisation of treatment. This, however, requires that every dental professional recommending orthodontic treatment for patients should view the problem holistically. They, therefore, should do so with an appreciation of the aesthetic, psychical, social, functional and health benefits.

AIMS AND OBJECTIVES



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The aim of this study is:

To determine the perceptions of occlusal conditions and facial profiles of young adolescents (school children) residing in Mitchells Plain to facilitate the planning of a district orthodontic service.

The objectives of the study are:

- 1) To establish a ranking of occlusal conditions based on the perceptions of twelve to fourteen (12-14) year old school children residing in Mitchells Plain.
- 2) To determine the level of self satisfaction of oral and facial appearance in this group.
- 3) To determine the impact of selected indicators of social class upon these variables, (housing, availability of water, electricity and telephone services and level of education).
- 4) To determine whether the ranking of occlusal traits by dental students differs from that by the schoolchildren.

It is expected that the results of this study will also contribute towards the development of an index based on the acceptability of occlusal conditions. This index could be used to prioritise treatment in state-funded orthodontic treatment facilities such as the Oral Health Centre in Mitchells Plain.

MATERIALS AND METHOD



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4.1 POPULATION

4.1.1 DEFINITION OF THE POPULATION OF MITCHELLS PLAIN

The population of Mitchells Plain is viewed as a specific ethnic group in the South African context. However, in this study the population is viewed as an ethnic group only because they live in the same geographic location (Richardson, 1980). Historically the inhabitants share the same background in that they were relocated to this area from the broader Western Cape region in accordance with the Group Areas Act of 1950.

The population belongs to the lower middle class, low socio-economic group living in self-owned or rented brick houses provided largely by the Cape Town City Council.

4.1.2 GEOGRAPHIC LOCATION OF MITCHELLS PLAIN.

Mitchells Plain is situated on the False Bay coast, midway between the Strand and Muizenberg. The area is about 2400 ha and has a population in excess of 450 000 living in approximately 50 thousand housing units (Cape City Council, 1992).

Mitchells Plain came into existence as part of the "grand apartheid plan" of the Nationalist Party in South Africa. The corner stone of its policy was the relocation of "racial groups" into their "own areas". This was promulgated by the Group Areas Act of 1950. The area is divided into 9 suburbs namely: Beacon Valley, East Ridge, Lentegour, Portlands, Rocklands, Strandfontein, Tafelsig, Westridge and Woodlands.

4.2 SAMPLE

Two samples were selected, one consisting of school children and the other of dental students.



4.2.1 Adolescent school children

The sample was drawn from the 12-14 year age group. The age range of the sample was chosen because:

- 1) It corresponds with the age range of the samples their studies of perception of occlusal conditions.
- 2) The permanent dentition is usually present and most malocclusions are established by this age.
- 3) It also corresponds with the time that orthodontic treatment is commonly commenced.

- 4) This period is very dramatic for the young adolescent and concern about dento facial appearance is usually intense (Albino et. al., 1984)

A telephonic survey of schools showed that the standard 5 and 6 classes contained the majority of school children in the specified age range of 12-14 years.

4.2.1.1 Sample size

From the 1985 census the number of adolescents in this age group in the Mitchells Plain is estimated at 30,000 individuals (the 1990 census results were not available at the time of writing). One of the parameters (satisfaction with appearance) in the questionnaire was chosen to determine the sample size. If one considers a satisfaction with own appearance by adolescents to be similar to that found in other studies, i.e. 85 percent (Prah1-Anderson and Moore, 1980) then a sample size of 304 was indicated (99 percent confidence level). This was obtained by using the sample size calculation of the Epi-info statistical package. It was subsequently decided to use a sample size of 350.

4.2.1.2 Selection:

The sampling was a combination of random, stratified and cluster methods. There are 62 schools in Mitchells Plain. Four (4) schools were randomly selected with

one school per suburb as there was more than one school in most suburbs. All the standard five and six classes were selected. For convenience, classes were individually surveyed with all children completing the questionnaire. Classes were surveyed until the desired number of questionnaires were completed by school children meeting the selection criteria. Questionnaires completed by individuals who did not meet the selection criteria were not included in the final sample.

4.2.1.3 Inclusion Criteria

All participants had to meet the following criteria

- 1) Be schoolgoing
- 2) Be in standard five or six
- 3) Be at school on the day the survey was conducted

4.2.1.4 Exclusion criteria

- 1) All schoolchildren who were not within the age range 12-14 years (as at the last birthday).
- 2) All those who were not residents of Mitchells Plain.
- 3) All those who had received or who were currently receiving orthodontic treatment.

4.2.3. Dental Students

All Senior Dental students in the final year of study (B.Ch.D. V 1992) at the U.W.C. Oral Health Centre were selected. No exclusion criteria were applied to the dental students. The number of subjects in this sample was limited by the number of students in the senior class. The only inclusion criterion was that they had to be present on the day the study was conducted.

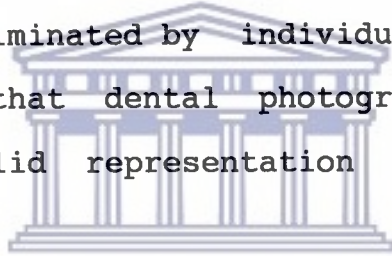


4.3 MEASUREMENT

The collection of the data relied upon the completion of a questionnaire after subjects had viewed a slide show together with the self assessment of the individual (Appendix 3).

4.3.1 SLIDE SHOW

The validity of the slide show method was shown by Howells and Shaw (1985) who indicated that different measures of dento-facial attractiveness can be consistently discriminated by individuals and panels. They also showed that dental photographs/slides can be used as a valid representation of dento-facial attractiveness.



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The slides portrayed consisted of various occlusal conditions and facial profiles. When viewed from a frontal perspective the depth of field of antero-posterior discrepancies cannot be appreciated thus different perspectives were shown to illustrate the occlusal conditions.

The following occlusal conditions were shown by slides
(Figure 1):

- 1) "Orthodontic ideal" occlusion
- 2) Class I with mild crowding (two teeth malpositioned)
- 3) Class I with moderate crowding
- 4) Class I crowding with buccally placed canines
- 5) Class I with severe crowding
- 6) Class I with a central diastema
- 7) Class I spaced dentition
- 8) Class I with open bite
- 9) Class I with missing maxillary incisors
- 10) Class II Division 1 with moderate overjet and well aligned teeth
- 11) Class II Division 1 with severe overjet and well aligned teeth
- 12) Class II Division 2
- 13) Class III moderate
- 14) Class III severe

FIGURE 1. OCCLUSAL CONDITIONS



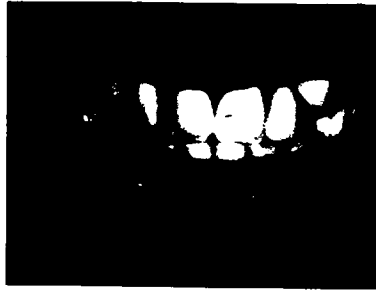
1. "Orthodontic ideal" occlusion



2. Class I with mild crowding (two teeth malpositioned)



3. Class I with moderate crowding



4. Class I crowding with buccally placed canines



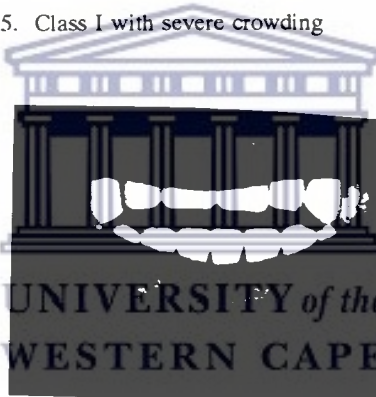
5. Class I with severe crowding



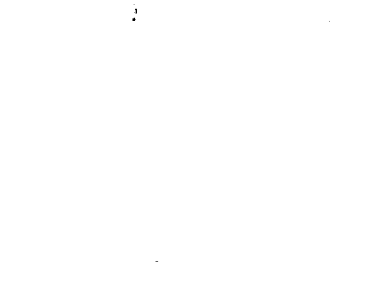
6. Class I with a central diastema



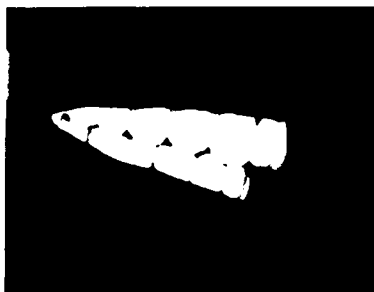
7. Class I spaced dentition



8. Class I with open bite



9. Class I with missing maxillary incisors



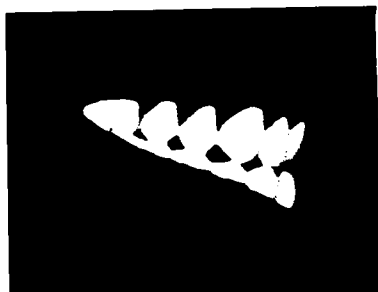
10. Class II Division 1 with moderate overjet and well aligned teeth



11. Class II Division 1 with severe overjet and well aligned teeth



12. Class II Division 2



13. Class III moderate



14. Class III severe

Slides were also shown of the lateral facial view depicting the heads of children of about the same age as the school children interviewed.

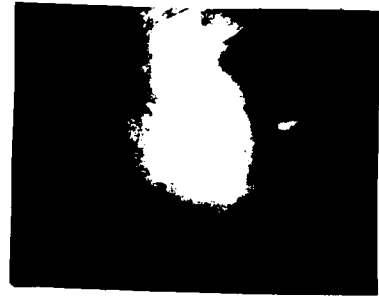
The following facial profile types were portrayed by slides (Figure 2).

- 1) Class I
- 2) Mild bimaxillary prognathism
- 3) Class I with short face (decreased lower facial height)
- 4) Class I with a long face (increased lower facial height)
- 5) Moderate bimaxillary prognathism
- 6) Severe bimaxillary prognathism
- 7) Class II with maxillary protrusion
- 8) Class II with mandibular retrusion
- 9) Severe mandibular prognathism (Class III)
- 10) Repaired cleft lip

FIGURE 2. PROFILES



1. Class I



2. Mild bimaxillary prognathism



3. Class I with short face (decreased lower facial height)



4. Class I with a long face (increased lower facial height)



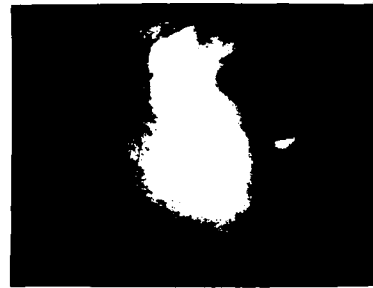
5. Moderate bimaxillary prognathism



6. Severe bimaxillary prognathism



7. Class II with maxillary protrusion



8. Class II with mandibular retrusion



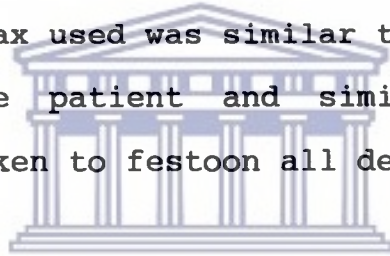
9. Severe mandibular prognathism (Class III)



10. Repaired cleft lip

4.3.2 PRODUCTION OF SLIDES

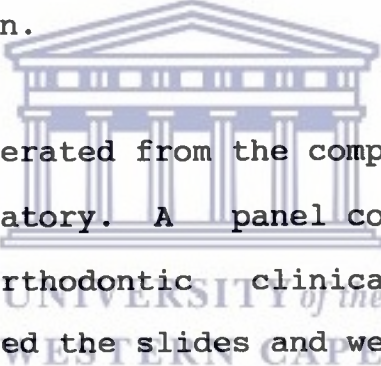
A panel consisting of two orthodontists and two clinical assistants selected a 13 year old patient from photographs of children who had good facial proportions. Fourteen sets of denture teeth with the same size and shape as that of the patient were selected. Occlusal conditions were rated by the panel from photographs of patient records. The models of these patients were obtained and the technician set up the teeth as close as possible to that of the model. The colour of the wax used was similar to that of the pigmentation of the patient and similar in all 14 setups. Care was taken to festoon all denture setups in a similar way.



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A video image from a frontal, lateral and three quarter view of the face of the 13 year old child chosen above was obtained using a video camera linked to a computer. Similarly a video image of all the denture setups was obtained. Utilising the "Utopian images" software package a computer graphic art technician subsequently superimposed each denture setup in the image of the mouth of the child to create the view of the malocclusion as had it originally appeared in the mouth of the patient.

The profile computer video image of the lateral/profile of the subject was manipulated by the computer graphic art technician. The final product conformed to photographs of people having profile characteristics of the various facial types selected for inclusion in the study. Care was taken only to change the oral region except in the cleft patient where the nose is also affected. All background detail was standardised including the lips, gingiva, the size, shape and colour of the teeth. The responses obtained would therefore only be in relation to the orthodontic condition.



Slides were then generated from the computer images by a commercial laboratory. A panel consisting of two orthodontists, an orthodontic clinical assistant and four dentists examined the slides and were able without difficulty to identify the occlusal conditions and profiles illustrated in the list provided.

4.3.3 QUESTIONNAIRE

The questionnaire (Appendix 3) was prepared in two sections. Section one consisted of two parts, one dealing with socio-economic and demographic data and the second dealing with self perception. In the former only selected questions to establish socio-economic rating of the school children could be used. Questions

pertaining to occupation and financial status of parents were considered an invasion of privacy, and were excluded.

Section two dealt with the slide show. The subjects were requested to rate conditions portrayed for appearance and treatment need.

The dental students were required to complete only the questions relating to their self-appraisals and their reactions to the slides were recorded. With regard to the treatment option students consider the person in the slide as their patient and were instructed to decide whether or not they would advise treatment.

4.4 VARIABILITY

4.4.1 RESPONDENTS

As a confirmation of the exclusion criterion cross-linked questions were used and correlated. Age and domicile of the respondent was correlated with date of birth and suburb in which they resided respectively.

Duplicates of three randomly selected slides, two of occlusion and one of a profile, representing 10% of the total number, were screened at random intervals in the slide show. Respondents were not informed of this

duplication. It was not possible to have respondents repeat the questionnaire to monitor internal variability because:

- 1) The responses were anonymous,
- 2) A second screening of the entire slide show may have created bias, in that school children and students may recognise and recall their response;
- 3) The first slide presentation may have sensitised the respondents to facial and dental aesthetics.

4.4.2 INTERVIEWER

The Interviewer and Research Assistant were the same throughout the study. Consensus was reached on answers to queries concerning questions.

4.5 PILOT STUDY

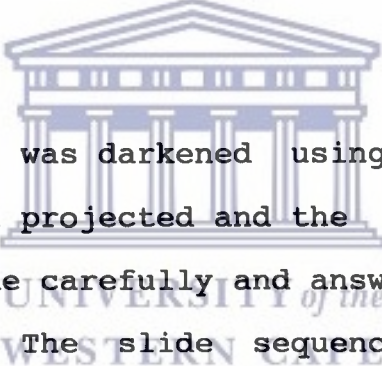
The first school served as the pilot for this study. Should any problems have been encountered or any changes to the method required the data of these questionnaires would then have been excluded.

Analysis of the method and data showed that no problems were encountered and thus no changes to the method were required. The attrition rate (school children not meeting the criteria) of the pilot sample indicated that the sample size would have to be approximately 390 to meet the sample size of 350.

4.6 DATA COLLECTION

Before the slide show was commenced the children were informed that the U.W.C. Oral Health Centre was collecting data to enable future planning of dental treatment at the Oral Health Centre in Mitchells Plain. They were advised that all information supplied was anonymous and confidential.

All school children were instructed to complete the questionnaire. The questions were explained in sequence for the entire questionnaire to eliminate any ambiguity.



Thereafter the room was darkened using roller blinds. The slides were then projected and the respondents had to examine each slide carefully and answer part two of the questionnaire. The slide sequence was randomized (appendix 5). Each slide was viewed for 30 seconds with a 15 second pause between slides to allow subjects to complete the questionnaire.

The school children and the students responded to the question of how the dentition or person in the slide portrayed looked. The answers "Very good" and "Good" were taken to represent a positive or acceptable response. "Ugly" and "Very ugly" were regarded as two grades of negative responses, indicating the

unacceptability of the condition. "Very good", "Good", "Ugly" and "Very ugly" was allocated scores of 1 to 4 respectively.

Researchers gave assistance when required.

4.7 STATISTICAL ANALYSIS

All data was analysed using the Epi-info program. Frequencies and ratings were analysed using the student t-test to show significance at the 95% level ($p < 0,05$). The Spearman rank correlation and Wilcoxon rank test were used to calculate the occurrence of any statistical significance in the ranking of the slides, using the sum of frequencies method and the sum of positive ratings.

To rank the slides, the sum of the frequencies which is the sum of the product of the score allocated and frequency of the score (sum of frequencies = sum of (score x frequency of score)). The sum of the positive rating was also used.

4.8 ETHICAL CONSIDERATIONS

Permission was obtained from:

- 1) The Education and Health Departments of the House of Representatives.

- 2) the Principals of the schools where the study was to be conducted.
- 3) Parents or guardians of all participants.
(appendix 4).

Participants and their parents were informed about the nature of the study but not the precise objectives. All requests for treatment were referred to the Oral Health Centre. The respondents were assured about the confidentiality and anonymity of the responses.

All consent forms and questionnaires were available in English and Afrikaans.

The results are to be made available to the Department of Health.





RESULTS
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5.1 PILOT STUDY

No problems were encountered with the materials or method and the data from the pilot study was therefore included in the final sample.

5.2 SAMPLE SELECTION

5.2.1 SCHOOL CHILDREN

Four schools were visited to obtain the required number of subjects (Table 1).


	AGE 12		AGE 13		AGE 14		
	SEX M	SEX F	SEX M	SEX F	SEX M	SEX F	
Merrydale Primary	9	8	15	17	11	20	75 (18.5%)
Hillside Primary	9	11	21	25	33	31	130 (32.5%)
Ridgeville Primary	10	12	18	20	20	10	90 (24%)
Strandfontein S.S.S.	10	11	20	24	16	19	100 (25%)
Total by sex	38	42	74	86	80	80	
Total	80		160		160		400 (100%)

Table 1: Distribution of school sample by school, age and sex

	12 years	13 years	14 years	
Male	31 (8.8%)	65 (18.7%)	70 (19.9%)	166 (47.4%)
Female	31 (8.8%)	84 (23.9%)	70 (19.9%)	185 (52.6%)
Total	62 (16.6%)	149 (42.6%)	140 (39.8%)	351 (100%)

Table 2: School children sample after exclusion

Four hundred school children completed the questionnaire before the required number was obtained. Of the four hundred subjects the final sample (Table 2) constituted three hundred and fifty one. The male/female ratio for the 12 , 13 and 14 year olds were 1:1, 1:1.29 and 1:1 respectively.



	Male	Female	Total	percent
Age	14	13	27	6.8
Domicile	11	7	18	4.5
Treatment	1	3	4	1.0
Total	26	23	49	12.3

Table 3 : School children excluded from sample

A total of 49 school children were excluded from the sample (Table 3). Only four subjects were excluded on the basis that they had in the past received or were currently undergoing orthodontic treatment. The balance were excluded as they did not meet the other selection criteria.

The sample was stratified by age and sex so that all variables could be tested for any differences. Where no significant differences occurred, data was pooled. Where differences were found, the results were separated.

5.2.2 DENTAL STUDENTS

The student sample consisted of ten females and thirteen males from the B.Ch.D. V class of 1992.

5.3 SOCIO-ECONOMIC INDICATORS

The questions used to ascertain the socio-economic status of the subjects revealed that most of the school children came from households where piped water, electricity and telephones are installed. Of the sample, eighty-eight (25 percent) indicated that a member of their household had attended or is currently attending a tertiary education facility.

5.4 SATISFACTION WITH APPEARANCE

A) SCHOOL CHILDREN

The number of children satisfied with their appearance ranged in the various age groups from 84 to 99 percent in males and 86 to 95 percent in females.

No statistically significant differences were found between the overall rating of males and females. However when specific categories were focused on, such as the "Unhappy" category in Table 4, differences appeared to exist. It was not possible to do a statistical analysis of this as the numbers were small and the results meaningless. The actual number of persons in these categories, in relation to the total sample, is not significant.

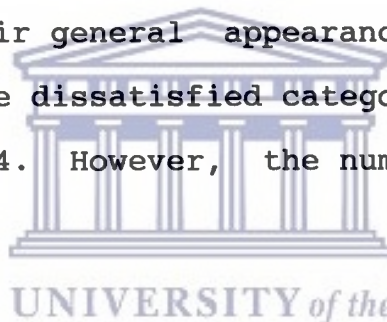
This was true for all data relating to the self rating of general, facial and dental appearance.

5.4.1 SATISFACTION WITH GENERAL APPEARANCE (question 12)

		Male (n=166)		Female (n=185)	
R E S P O N S E	Very satisfied	98.8%	37.4%	44.3%	95.1%
	Satisfied		61.4%	50.8%	
	Unhappy	1.2%	0.6%	4.9%	4.9%
	Very unhappy		0.6%	0%	

Table 4

A slightly larger percentage of males (98.8 %) are satisfied with their general appearance than females (95.1 %). In the dissatisfied category the male to female ratio is 1:4. However, the numbers were very small.



5.4.2 SATISFACTION WITH DENTAL APPEARANCE (question 13)

		Male (n=166)		Female (n=185)	
R E S P O N S E	Very satisfied	84.3%	25.9%	33.0%	89.2%
	Satisfied		58.4%	56.2%	
	Unhappy	15.7%	15.1%	8.6%	10.8%
	Very unhappy		0.6%	2.2%	

Table 5

Very little differences were observed in the extent to which males and females are satisfied with their appearance. Slightly more females (89.2%) are satisfied with their dental appearance than males (84.3%). In the "unhappy" category however nearly twice as many males were unhappy with their dental appearance.

5.4.3 SATISFACTION WITH FACIAL APPEARANCE (question 17)

		Male (n=166)		Female (n=185)	
R E S P O N S E	Very satisfied	89.1%	37.3%	31.9%	86.5%
	Satisfied		51.8%	54.6%	
	Unhappy	10.9%	9.7%	13.0%	13.5%
	Very unhappy		1.2%	0.5%	

Table 6

Similar percentages of males (89.1%) and females (86.5%) were satisfied with their facial appearance.

Very small differences were found between the two categories of satisfaction.

5.4.4 SATISFACTION WITH SIZE OF OWN TEETH (question 14)

		Male (n=166)		Female (n=185)	
R E S P O N S E	Very satisfied	91.6%	33.8%	31.4%	88.7%
	Satisfied		57.8%	57.3%	
	Unhappy	8.4%	8.4%	8.1%	11.3%
	Very unhappy		0.0%	3.2%	

Table 7

Almost the same percentage of males (91.6%) and females (88.7%) were satisfied with the size of their teeth. Minor differences were found within the different categories of satisfaction.

5.4.5 SATISFACTION WITH COLOUR OF OWN TEETH (question 15)

		Male (n=166)		Female (n=185)	
R E S P O N S E	Very satisfied	94.0%	29.5%	33.0%	90.8%
	Satisfied		64.5%	57.8%	
	Unhappy	6.0%	5.4%	9.2%	9.2%
	Very unhappy		0.6%	0.0%	

Table 8

Almost equal percentages of satisfaction were found between the sexes, slightly more males (94%) being satisfied with the colour of the dentition than females (90.8%). No females and only one male (0.6 percent) was very unhappy about the colour of their dentition.

5.4.6 RATING OF OWN APPEARANCE COMPARED WITH THAT OF PEERS (question 18)

	Male n=166	Female n=185	Sample n=351
Better looking	16%	15%	15.5%
Same as	73%	77%	75%
Worse looking	11%	8%	9.5%

Table 9

When asked how they rate their dental appearance compared with that of their peers, seventy three percent of males and seventy five percent of females considered it to be similar. No statistically significant difference between male and female ratings was found ($p > 0.05$).

5.4.7 FACTOR CONSIDERED MOST IMPORTANT FOR APPEARANCE

(question 19)

5.4.7.1 School Children

	Males n=166		Females n=185	
	percent	Rank	Percent	Rank
Face	44.0%	1	39.9%	2
Figure	28.0%	2	40.0%	1
Teeth	16.0%	3	8.6%	3
Hair	8.0%	4	8.6%	3
Clothes	4.0%	5	3.2%	5

Table 10

The ranking of the factor considered most important for appearance differs between male and female respondents. Female respondents rated Face and Figure as almost equally important, followed by Teeth and Hair with a low but equal response (8.6 percent).

Male respondents also ranked Face as the most important factor. Figure was second being rated by 28 percent, Teeth, third with 16 percent and Hair fourth with approximately 8 percent.

Clothes were rated important by a very small percentage of male (4.4 percent) and female (3.2 percent) school children.

5.4.7.2 Dental Students

	Males n= 13		females n= 10	
	percent	Rank	Percent	Rank
Face	85.0%	1	40.0%	1
Figure	7.5%	2	30.0%	2
Teeth	7.5%	2	20.0%	3
Hair	0%	4	10.0%	4
Clothes	0%	4	0%	5

Table 11

A significant difference in what was considered to be the most important aspect of appearance was also found between male and female dental students ($p < 0.05$).

Eighty five percent of male students regarded facial appearance as the most important feature for appearance, with Figure and Teeth considered relevant by only 7.5 percent each.

Forty percent of female students regarded Face as the most important aspect for appearance. Figure (30 percent), Teeth (20 percent) and Hair (10 percent) were considered in descending order of importance.

5.5 FREQUENCY OF TEASING FOR FACIAL AND DENTAL APPEARANCE (question 22 and 23).

5.5.1 FACIAL

R E S P O N S E		Percent	
	Never	37.0%	63.0%
	Sometimes	7.4%	
	Always	55.6%	
n = 351			

Table 12

5.5.2 DENTAL

R E S P O N S E		Percent	
	Never	63.5%	36.5%
	Sometimes	32.7%	
	Always	3.8%	
n = 351			

Table 13

No statistically significant difference in the percentage of males and females being teased for their dental or facial appearance was found. Sixty three percent (63%) of school children were teased because of facial appearance, with fifty five percent (55%) indicating that they were teased all the time (Table 12).

Approximately thirty six (36.5%) percent of the sample indicated that they were teased for their dental appearance of whom only approximately four percent (3.8%) were teased all the time (Table 13).

5.6 RANKING OF OCCLUSAL CONDITIONS AND PROFILES

Dentitions and profiles were ranked using the sum of frequencies and the sum of the positive ratings. A comparison using the Spearman rank coefficient and the Wilcoxon Rank sum test showed that both provided a correlation with no significant difference between these methods (correlation coefficient $(r) = 0.99$ and $p < 0.05$).

Statistically significant differences between the rating of males and females were present for one occlusal condition: central diastema, and three profile conditions namely, Class II maxillary prognathism, increased lower facial height and mild bimaxillary prognathism. This however did not affect the ranking of the slides and was not considered to be clinically meaningful. For this reason the data was pooled.

Slides numbers 2, 14 and 22 were duplicates of slides 3, 9 and 12 respectively (Appendix 5). No statistically significant differences between their first and second rating were noted. The second rating of the slide was therefore discarded.

All data presented in this section is rounded off to the nearest whole number.

5.6.1 RANKING OF OCCLUSAL CONDITIONS

5.6.1.1 School Children

Rank	Description of condition	Sum of frequency	Percent Rating			
			Very good	Good	Ugly	Very ugly
1	Mild class III	511	63	30	5	1
2	Ideal occlusion	540	52	43	5	0
3	Mild crowding	877	5	46	45	4
4	Central diast.	943	3	29	64	3
5	Mild Class II	946	4	33	51	11
6	Class II div II	1024	1	19	67	13
7	Mod.Crowding	1179	1	6	48	46
8	Ant. open bite	1187	2	7	45	46
9	Buccal canines	1190	0	4	52	44
10	Severe Cl. III	1210	1	4	46	49
11	Severe Class II	1232	1	4	39	56
12	Missing Max inc	1276	1	4	26	69
13	General.Spacing	1279	0	3	30	67
14	Severe crowding	1336	1	2	12	85

Cl.= Class, Diast.= diastema, Mod.= moderate, ant=anterior

Table 14

The "Ideal occlusion" and mild Class III occlusion are highly acceptable (with acceptability of over 90 percent). Class I with a central diastema and a mild Class II are considered almost equally when one looks at the sum of their frequencies. Conditions ranked 6-14 have a very low level of acceptability.

5.6.1.2 Dental Students

Rank	Description of condition	Sum of frequency	Percent Rating			
			Very Good	Good	Ugly	Very ugly
1	"Ideal occlusion"	32	61	39	0	0
2	Mild crowding	49	5	78	17	0
3	Mild Class III	52	5	65	30	0
4	Central diastema	53	0	74	26	0
5	Mild Class II	54	13	48	35	4
6	Class II div II	56	0	57	43	0
7	Anterior open bite	67	0	22	65	13
7	Buccal canines	67	0	22	65	13
9	Moderate crowding	71	0	4	78	18
10	General Spacing	72	0	8	64	28
11	Severe class III	74	0	9	61	30
12	Severe class II	75	0	9	56	35
13	Severe crowding	80	0	4	44	52
14	Missing max inc.	82	0	4	43	53

Table 15

Ideal occlusion is rated 100 percent and ranked first by dental students. Moderate crowding and buccally placed canines share the same ranking of seven. Conditions ranked 7-14 all have very low acceptability ratings of less than 20 percent.

5.6.2 RANKING OF PROFILES

5.6.2.1 School Children

Rank	Condition	Sum of frequency	Percent Rating			
			Very good	Good	Ugly	Very ugly
1	Mild Bimax. progn	649	29	59	10	2
2	"Ideal profile"	658	26	62	13	5
3	Cl.I increased LFH	706	21	61	13	5
4	Mod. Bimax. progn.	768	8	68	20	4
5	Cl.II Max. progn	822	4	62	29	5
6	Severe Bimax progn	869	3	50	43	4
7	Cl.I decreased LFH	875	7	44	40	8
8	Cl.II mand retrogn	895	5	45	42	8
9	Severe Class III	1065	0	16	64	20
10	Cl.III-cleft lip	1168	0	7	52	42

Cl.= Class, max = maxillary, mand = mandibular, LFH = lower facial height, bimax = bimaxillary, progn. = prognathism retrogn = retrognathism

Table 16

Ideal profile, mild bimaxillary prognathism, Class I with increased lower facial height and moderate bimaxillary prognathism were rated highly acceptable (more than 80 percent). Only the Class III (mandibular prognathism) profile was considered unacceptable.

5.6.2.2 Dental Students (Profiles)

Rank	Condition	Sum of frequency	Percent Rating			
			Very good	Good	Ugly	Very ugly
1	Cl.I incr. LFH	34	52	48	0	0
2	Mild Bimax Progn	43	13	87	0	0
2	"Ideal profile"	43	13	87	0	0
4	Mod. Bimax progn	48	7	86	6	1
5	Cl.I decreased LFH	51	0	83	13	4
6	Severe Bimax progn	52	4	55	30	0
7	Cl.II max progn	57	0	52	48	0
8	Cl.II max retrogn	60	0	44	52	4
9	Severe Cl. III	70	0	13	70	17
10	Cl.III-cleft lip	77	0	0	65	35

Cl. = Class, max = maxillary, mand = mandibular, LFH = lower facial height, bimax = bimaxillary, progn. = prognathism retrogn = retrognathism

Table 17

Mild bimaxillary prognathism and "ideal profile" were equally ranked. Profiles ranked first and second have an acceptability rating of 100 percent. Only the Class III profile has a very low level of acceptability with Class III associated with the cleft lip having a zero rating of acceptability.

5.7 TREATMENT RECOMMENDATIONS

5.7.1 ASSESMENT OF TREATMENT CONSIDERATION OF OCCLUSAL

CONDITIONS: PERCENTAGE INDICATING TREATMENT

Slide	Description	School children		Dental students	
		Rank	% Treatment	Rank	% Treatment
6	"Ideal occlusion"	2	8	1	0
4	Mild crowding	3	64	2	79
5 *	Mild Class III	1	11	3	61
1 *	Central diastema	4	71	4	44
9/14*	Mild Class II	5	72	5	50
21 *	Class II div 2	6	83	6	52
8	Anterior open bite	8	88	7	87
13	Buccal canines	9	88	8	82
3/27	Moderate crowding	7	87	9	100
18	Generalised spacing	13	90	10	95
19	Severe Class III	10	89	11	100
10	Severe Class II	11	93	12	100
23	Severe crowding	14	91	13	100
16	Missing max.incis.	12	85	14	96

* = Significant difference ($p < 0.05$)

Table 18

The treatment recommendations by students and school children are shown in Table 18. Significant differences ($p < 0.05$) exist in the percentage of

school children and students recommending treatment for conditions ranking 3, 4, 5 and 6. Although differences exist for all the other conditions they are not statistically significant ($p > 0.05$).

5.7.2 ASSESSMENT OF TREATMENT PRIORITIES VERSES PERCENTAGE INDICATING TREATMENT WAS REQUIRED:

Slide	Description	School children		Dental students	
		Rank	% Treatment	Rank	% Treatment
7	Cl. I increased LFH	3	18	1	0
22	Mild bimax prognathism	1	14	2	9
26	"Ideal profile"	2	14	3	0
12/25	Moderate bimax.progn.	4	32	4	21
17 *	Cl. I decreased LFH.	7	51	5	21
20	Severe bimax progn.	6	51	6	47
2 *	Cl. II max. progn.	5	34	7	83
24 *	Cl. II mand. retrogn.	8	51	8	70
15	Severe Cl. III	9	79	9	91
11 *	Cl. III-cleft lip	10	81	10	100
* = significant differences ($p < 0.05$)					

Cl. = Class, max = maxillary, mand = mandibular, LFH = lower facial height, bimax = bimaxillary, progn. = prognathism
retrogn = retrognathism

Table 19

Differences exist between the treatment recommendation for all profile types but are only statistically significant for profiles ranked 1, 5, 7, 8, and 10 ($p > 0.05$) This represents the occurrence of significant difference in fifty percent of the treatment considerations for profiles.



DISCUSSION



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6.1 ORTHODONTIC TREATMENT IN MITCHELLS PLAIN

From the number of school children excluded on the basis of having received or who are currently receiving orthodontic treatment it may be extrapolated that one percent of Mitchells Plain school children in the 12-14 age range receive orthodontic treatment. This differs substantially from the treatment levels of 26 percent found in the United Kingdom (Tulloch and Shaw, 1984; Gravely, 1990) and 47 percent in Lexington in the United States of America (Tulloch and Shaw, 1984). It would be incorrect to assume that the social and economic conditions prevailing for each of these studies was similar. These conditions must include the class status of the subjects, the availability of an orthodontic service, the level of awareness, need or demand for orthodontic treatment, and the social acceptability of occlusal and facial disharmony in these communities. All these variables have been shown to affect the demand for orthodontic treatment (Shaw, 1981).

The reasons for such a small percentage of the population receiving orthodontic therapy were not investigated, as it was beyond the scope of the study. However, to surmise, possible reasons may include the low socio-economic status of the community and the minimal availability of orthodontic services.

While the proportions of subjects receiving orthodontic treatment may be low, the demand in the community for orthodontic services appears to be substantial, if the lengthy waiting list at the Oral Health Center is any indication (U.W.C. Department of Orthodontics, 1992).

The socio-economic status of Mitchells Plain is low according to the Cape Town City Council (1992). Private orthodontic treatment therefore may not be an option to this community. This was not established by the questionnaire. If a substantial number of children of Mitchells Plain are indeed receiving orthodontic treatment then it can only be assumed that they do not attend the schools surveyed.

A very limited public orthodontic service may now be available to the Mitchells Plain community. Prior to June 1992 there was no specialist orthodontist service available in this community. The Department of Health has established in 1993 a limited orthodontic service at clinics in Mitchells Plain.

The National Oral Health Survey (NOHS) of 1989/90 (Barry et.al. 1993), showed the national level of Orthodontic Treatment Need to be approximately 32 percent of which 14 percent required treatment urgently. The results of the NOHS were based on a very limited number of children from Mitchells Plain

(n = 75) and seems unlikely to reflect the true occlusal status and orthodontic treatment needs of the entire community.

6.2 SATISFACTION WITH APPEARANCE

School children in the 12 to 14 year age range in Mitchells Plain express a high degree of satisfaction (84-99%) with their general, facial and dental appearance (Tables 4-8). Of those that were dissatisfied the number that were very unhappy was small (0 - 1.2 % males and 0-2.2% females).

6.2.1 GENERAL APPEARANCE

The number of school children dissatisfied with their general appearance was very small and they were almost exclusively female. This was in agreement with Shaw (1981).

6.2.2 DENTAL APPEARANCE

Most subjects indicated that they were satisfied with their overall dental appearance as well as with the size and colour of their teeth (Tables 5,7 and 8). One third again as many males, however, were dissatisfied with the appearance of their teeth than females (Table 5).

When satisfaction with the colour (table 8) and size (table 7) of their teeth was considered, slightly more boys were satisfied with the size (92%) and colour (94%) of their teeth than with their general dental appearance (84.3%) (table 5). This suggests that only a small percentage of any dissatisfaction was related to the size and colour of the teeth. An almost equal proportion of girls indicated that they were unhappy with the size, colour and overall appearance of their teeth.

6.2.3 FACIAL APPEARANCE

The small difference in satisfaction with facial appearance does not warrant any comment except that more girls (13.5%) than boys (10.9%) were dissatisfied with the appearance of their face.

6.2.4 GENERAL APPEARANCE VERSUS FACIAL AND DENTAL APPEARANCE

A slightly higher proportion of children indicated satisfaction with their general appearance (95-99%) than for both dental (84-89%) and facial appearance (86-88%). It could be that the appearance of their teeth and face was not specifically reflected on when their general self evaluation was conducted.

The results of this study compare well with those of the Nymegen growth study group (Prahl Anderson and Moore, 1980) where the level of satisfaction with both facial and dental appearance showed very little difference (Appendix 6).

The level of satisfaction with dental appearance was slightly higher than that reported by Graber and Lucker (1980) and Holmes (1992) where levels of 80 and 73.2 percent, respectively, were recorded.



6.2.5 SELF RATING COMPARED WITH APPEARANCE TO PEER IN RELATION TO PERSONAL SATISFACTION

9.5 percent of school children felt that their dentition was worse looking than that of their peers (Table 9). This was of similar magnitude to the proportion of subjects dissatisfied with their dental appearance (Table 5) and vice versa. Correlation coefficients (r) for these comparisons were 0.83 (dissatisfaction and worse) and 0.86 (satisfied, same, or better). This indicates that self satisfaction seems to be related to how the school children rated their appearance with that of their peers.

The effect of the dento-facial defect hinges on the fundamental importance that the individual places on their teeth and the oral region (Secord and Backman,

1959). If this is true then the results tend to indicate that dental appearance affects facial appearance but not general appearance in this community. This is illustrated by the similarity in the proportion of individuals who are satisfied with their facial and dental appearances. Although a most tenuous tendency may be present, it can not be regarded as a significant finding.

6.2.6 TEASING AND APPEARANCE

The percentage of school children that are highly satisfied (very happy) with their facial appearance has a good correlation with the proportion of school children who indicated that they were never teased on account of facial aesthetics ($r = 0.87$).

The percentage of school children who were teased for their facial appearance is almost twice the percentage teased for dental appearance. The satisfaction levels for facial and dental appearances did not follow a similar pattern. It is still unclear whether teasing and satisfaction with appearance are directly related.

6.2.7 MOST IMPORTANT FACTOR FOR APPEARANCE

In considering what was reported to be most important for appearance it should be remembered that people considered to be attractive have an advantage over those not considered to be so, in all aspects of life (Graber and Lucker, 1980).

A large proportion of both males and females regard their face as the most important characteristic of their appearance. As the face is the focal point of all communication this finding is not surprising. It is known that malformation or abnormality of the oral region can have devastating effects on facial appearance. The effect of severe occlusal disharmonies, severe crowding and facial malformation such as cleft lip would result in a negative social image and these conditions will have a low rating. Treatment of these conditions is therefore expected to have dramatic effects on facial appearance and self esteem (Dennington and Korabic, 1977).

The face is therefore of great importance to the orthodontist. The dentition is but one part of the face. Angle stated that the mouth has the potential to "make or mar the face". It is therefore not surprising that the orthodontist focuses treatment around facial aesthetics.

Teeth were regarded by a small proportion of subjects as the most important factor for appearance. This may be related to the way in which the media portrays the perfect face and figure as being important for appearance. In the light of this assumption the low

ranking of hair was unexpected, especially if one considers the anecdotal concept of the amount of time and financial resources spent on hair care.

A result that stands out is the very high proportion of male dental students (85%) who consider the face as the most important factor for appearance, although the small student sample limits the significance of this observation. It could be suggested that there is greater emphasis on the face as the factor most important for appearance in males than females. The slight difference between the female adolescent and adult group suggest greater consistency in the perceptions of females.



6.3 SOCIO-ECONOMIC VARIABLES

Socio-economic variations in the backgrounds of the school children may have affected the ranking of the occlusal conditions and profiles. Socio-economic differences in the area may exist but the questionnaire did not elicit that information.

Twenty five percent of the sample indicated that a member of their household attended or were currently attending a tertiary education facility. The qualification achieved was not ascertained. This was the only variable which differed and could perhaps

have provided a basis for some form of socio-economic stratification. It was considered to be inadequate on its own however.

6.4 RANKING OF DENTITIONS

The rankings of occlusal conditions obtained from school children and dental students groups were found not to differ significantly ($p > 0.05$ and $r = 0.87$). It seems that very similar perceptions of occlusal conditions were held by both the school children and the dental students.

The difference in academic qualification or exposure to these conditions by the dental students does not appear to affect the rating. However, this finding needs to be understood in the context of the small student sample. It could be expected that this argument would be strengthened if a larger dental student sample was available.

The ranking obtained in this study showed some similarities in rank with that found by Cohen and Horowitz (1970) and Tedesco and Albino (1983). The method used in their studies differed from this one, and a direct comparison of the reported ranked conditions is unlikely to be valid.

6.5 RANKING OF PROFILES

A profile with a mild bimaxillary protrusion received a slightly higher acceptability rating than the "ideal profile". This is supported by the results of Samsodien (1986) where a fuller profile was preferred by his Western Cape sample.

The Class I profile received a better ranking than the Class II or Class III profiles. This may indicate that the Class I profile is regarded as the cultural norm of the samples especially if one considers that Samsodien (1986) illustrated that the Class I profile was also preferred in his Western Cape sample. Also the Class I profile is portrayed more often as part of the perfect facial image in the media. Dental students since the time of Angle have been taught the orthodontic normal corresponds to the Class I occlusion and profile.

The Class III profile received a very low acceptability rating. This may be due to the low prevalence of this type of profile in this community. It is also a severe deviation from the preferred Class I.

6.6 COMPARISON OF DENTAL AND FACIAL APPEARANCE

The comparison of the dental and the facial appearance in relation to the acceptability rating shows significant differences (tables 14 and 16). This difference in rating may be because different aspects of the face were portrayed. In the former only a small part of the dentition is displayed in the slides. The school child may not find it easy to relate this to complete facial appearance. It could be postulated that dental students would associate the dentition with the face and this would explain the difference in rating of the dental students. It is also possible that dental students do not actually view the patient as a whole but tend to focus on the dentition.

The higher rating of certain profiles in the Class II and Class III may indicate that the rating of the dental conditions would have been different had they been shown with a full face. This highlights one of the problems in making comparisons of studies of this nature, when methods have not been standardised.

6.7 THE MITCHELLS PLAIN CONCEPT OF NORMAL OCCLUSION

If "normal occlusion" can be defined as that which is considered most acceptable by a community, then one ranging from a well aligned mild Class III to the "orthodontic ideal" would be the occlusion considered to be normal by the adolescents of Mitchells Plain.

6.8 RECOMMENDATION FOR TREATMENT

The differences in desirability of treatment as assessed by school children and dental students was statistically significant in only four of the fourteen occlusal types, namely, the mild Class III, central diastema, mild Class II, and Class II division 2.

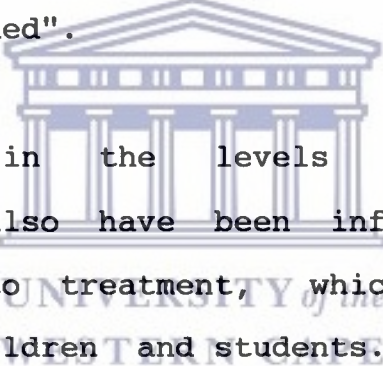
The frequency with which treatment was recommended was inversely related to the acceptability ranking of the condition.

The mild Class III received the highest rating and, perceived as normal by the school children. A low percentage of the school sample recommended treatment for this condition, and similarly for the "ideal" occlusion. The students, with their orthodontic training, recognised the mild Class III and indicated treatment for it as may have been expected. For the other conditions, school children rated them as less acceptable and more frequently indicated treatment as being desirable for these conditions.

The low frequency of recommendation for treatment of the Class II division 2 by dental students was surprising. However, dental students are taught to see the occlusal condition in relation to the facial form that accompanies it. The dental student group was comprised of adults who have inevitably been exposed

to the media for a longer period than the school children. They are also familiar with the somewhat anecdotal observation that most finalists in beauty competitions have Class II Division 2 occlusal relationships and therefore may not see the merits in treating this condition.

School children recommended treatment more frequently for mild occlusal conditions than did dental students. Occlusal conditions rated very poor aesthetically by all subjects, also recorded very high frequencies of "treatment recommended".



The difference in the levels of treatment recommendation may also have been influenced by the question relating to treatment, which was different for the school children and students. The children were instructed to view the occlusal condition as if it were their own, whilst the students considered the occlusions to be those of their patients. It is recognised that not all school children, irrespective of their dental or facial appearance, would seek treatment. Dentally trained personnel (dental students) however, are expected to inform patients if they think a condition warrants treatment.

The recommendation for treatment of the conditions shown in profile, had a similar pattern to that of the occlusal conditions. A significant difference was found in the frequency of treatment recommended for five of the ten profiles presented.

Students have been exposed to the rating of profiles and probably responded with the knowledge of the underlying occlusal relationships and treatment modalities available. The interpretation of the question relating to treatment was probably different for students and school children.

6.9 PRIORITISATION OF TREATMENT

The rating of occlusal conditions and treatment recommendation can be used to prioritise treatment in Mitchells Plain. Occlusal conditions ranked 6 to 14 (Table 14) all have a very low level of acceptability (below 20 percent) and a very high frequency of treatment recommended (above 80 percent, except Class II Division 2). It is strongly suggested that these conditions should be given priority in the allocation of treatment resources.



1. The perceptions of Mitchells Plain adolescent school children does not differ from that of adolescents in the United Kingdom and the United States of America. The orthodontic normal occlusion was considered to be most acceptable and a severely crowded malocclusion the condition least acceptable to this group.

2. A mild bimaxillary protrusive profile received the highest rating of acceptability by school children, followed by a Class I with ideal orthodontic proportions indicating a preference for a fuller profile.

3. The ranking of occlusal conditions and profiles by students at the U.W.C. Oral Health Centre does not differ significantly from that of the twelve to fourteen year old school children resident in Mitchells Plain.

4. The School children and students strongly agreed that treatment should be instituted for eight of the occlusal conditions reviewed. These conditions include the anterior open bite, maxillary crowding with buccally positioned canines, generalised spacing, moderate and severe crowding, severe Class II and Class III and missing maxillary incisors.

5. For cases of mild malocclusion a significantly higher proportion of the school children suggested treatment was needed in sharp contrast to the responses of the dental students.

6. No substantial agreement on Treatment Recommendation occurred for severe deviating profiles with the exception of the Class III.

7. Class II and Class III profiles received better ratings than did Class II and Class III malocclusions, by both school children and students.

8. It is recommended that an index for the prioritisation of orthodontic treatment be established for the Mitchells Plain community. Ideally this index should have an aesthetic component, a dental health component and a psychological assessment component.

9. This study has shown that the aesthetic perceptions of school children and dental students have identified as deserving of priority in orthodontic treatment amongst the 12-14 year old group in Mitchells Plain the following malocclusions: severe cleft lip and palate, moderate and severe Class II and Class III, moderate and severe crowding and patients with outlocked canines.



APPENDIX I
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8.1 PSYCHOLOGICAL DEFINITIONS (PAPALI and OLDS, 1992)

Self concept/self image is a collection of beliefs about one's own nature, unique qualities and social behaviour. Your self concept is thus your own mental picture of yourself. Individuals are aware of their self concept. It is not buried in their subconscious.

Stereotypes are widely held beliefs that people have certain characteristics because of their membership of a particular groups. The most common types of stereotypes in society are based on gender or membership to particular ethnic or occupational groups. Stereotypes are broad over-generalizations that ignore the diversity within social groups and foster inaccurate perceptions of people.

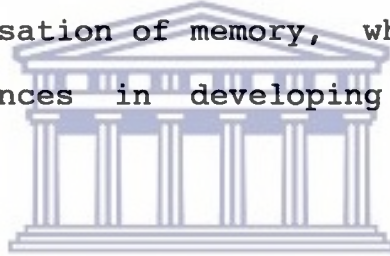
Prejudice is a negative attitude held towards a member/or members of a group. Like other attitudes prejudice includes three components of belief, namely ideas (cognitive component), emotional feelings (affective component) and predisposition (behavioural component).

Prejudice may lead to discrimination which involves behaving differently, usually unfairly towards members of a group. Perhaps no factor plays a larger role in prejudice than stereotype.

Social identity: This refers to the social categories that a person is recognised as belonging to. Some of these categories are assigned at birth, such as gender, age, nationality, race and religion. Others are added later in life. Some of these categories are subject to change during life. Numerous pigeon-holes exist into which societies places members, and these elements of social identity constitute ways in which the individual is seen and sees himself. The psychical problems of the deformed are social in nature in that the deformity becomes part of the patients social identity. (Stricker et.al., 1979)

Body Image may be defined as the mental picture that each individual has of his/her own appearance in space. This term is synonymous with self image and is often interchanged in texts. Protection and enhancement of the self are prime human motives, self-love being a fundamental trait of mankind (Stricker et.al., 1979). In a perceived negative change of aesthetics, there may be associated a traumatic emotional impression initiated by an awareness of physical discontinuity. Though the mental image of one's physical attributes may rarely be considered consciously under normal circumstances, it may be evident if the variance in the physical morphology is focused on by other individuals.

Perception is an organizing of sensory data (sight, touch, hearing, taste, and smell stimuli) by combining them with the results of previous experience or beliefs. Part of perception consists of labelling the relationships between objects by various perceptual strategies, but this is done ultimately in reference to oneself. In interpreting a certain stimulus a person constructs a "percept". This percept represents some of his/her conclusions (in general, unconscious) about the stimulus - in this context, the aesthetic factors. There is an organisation of memory, whereby the brain uses past experiences in developing the perceptual strategies.



Perception includes a process of filling in. A picture or a person may have part of the object under consideration missing, but the whole object is perceived from such parts as are present and the value of the missing part is assessed. The ability of the individual to perceive a series of separate entities as the whole object, and thus evaluate aesthetics, depends upon such factors as: (1) intelligence - having the faculty to understand; (2) interest - we see what we wish to see; (3) familiarity - when elements are thrown together in chance or interrupted order, we tend to see familiar objects in the over-all pattern; (4) likeness - elements which are alike tend to be perceived as belonging together; (5) inclusiveness - the pattern

that embraces all the elements is the one that has the advantage in perception; (6) part-whole relationship - the manner in which the whole is perceived will influence the meaning of the part. This is another way of saying that what we see depends upon surrounding conditions, or how the part under consideration relates to the whole. The application of aesthetic principles are all based on perception.



8.2 APPENDIX 2 - NYMEGEN DECISION MODELS MODELS

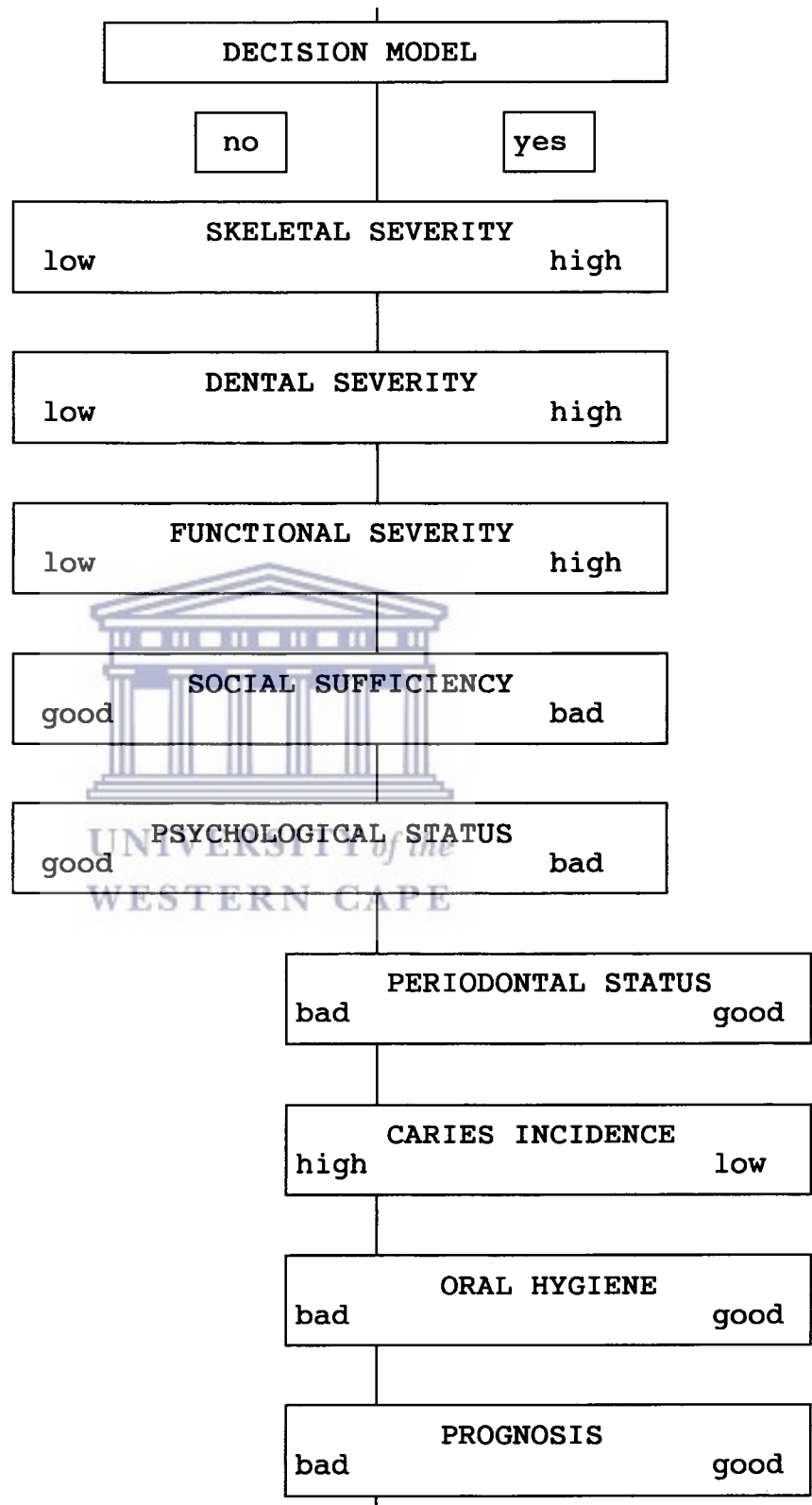


Figure 3. Patient weighted clinical criteria for a decision model for a developed country.

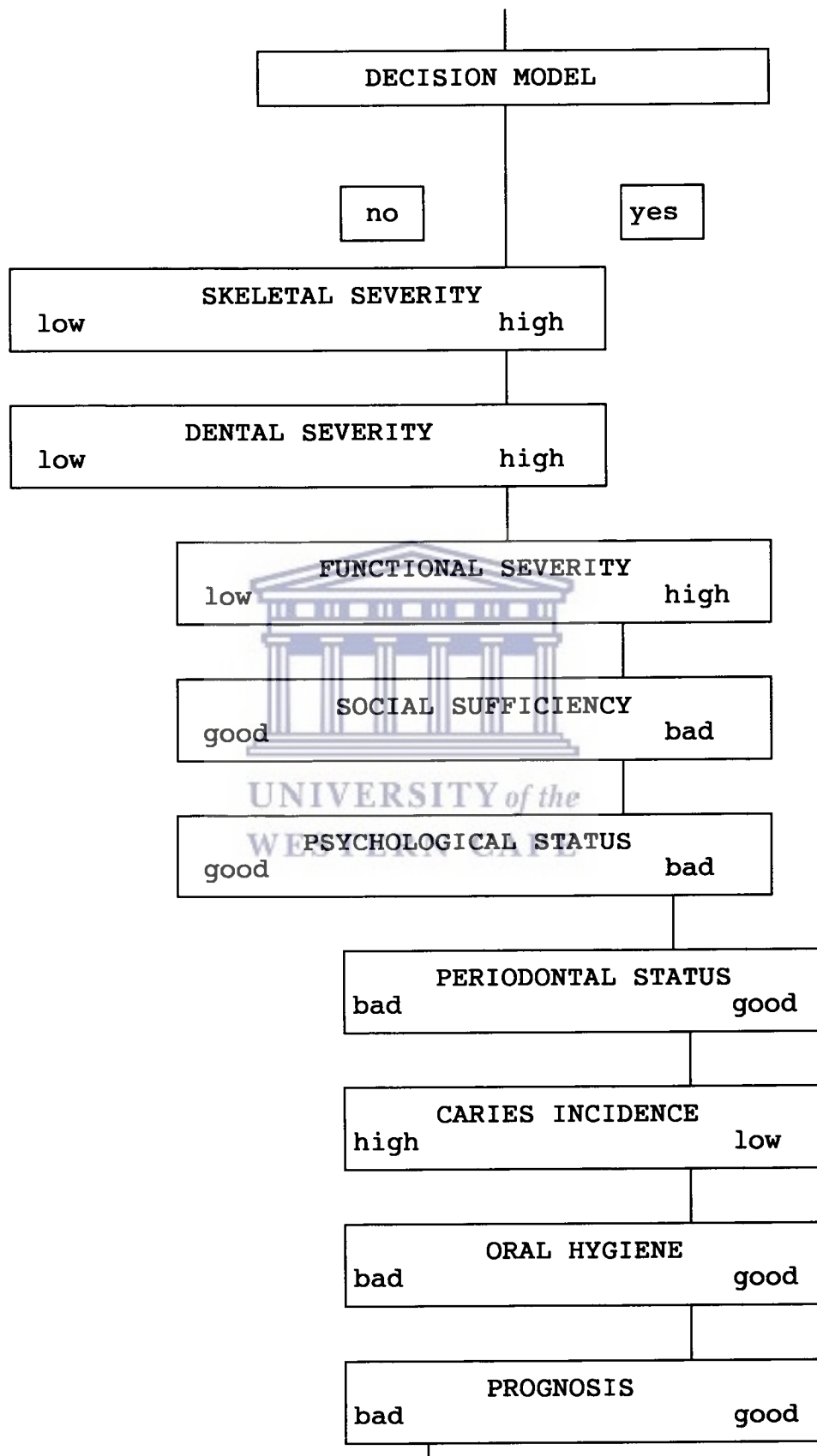


Figure 4. Patient weighted clinical criteria for a decision model for a developing country.

APPENDIX 3 - QUESTIONNAIRE
8.3.1 ENGLISH

--	--	--

(AFRIKAANS OP KEERSY)

WE WOULD LIKE TO PLAN A BETTER ORTHODONTIC SERVICE FOR MITCHELLS PLAIN AND TO DO THIS WE NEED YOUR HELP. PLEASE ANSWER THE FOLLOWING QUESTIONNAIRE AND WRITE DOWN WHAT YOU THINK OF THE SLIDES YOU WILL BE SHOWN LATER. THIS QUESTIONNAIRE IS ANONYMOUS. ALL YOU NEED TO DO IS TO TICK OR FILL IN THE BLOCK PROVIDED WHICH YOU THINK GIVES THE BEST ANSWER TO EACH QUESTION. THANK YOU

PERSONAL DETAILS

1) AGE

--	--

 YEARS 2) SEX

MALE	FEMALE
------	--------

Y Y M M D D

3) DATE OF BIRTH

--	--	--	--	--	--

4) WERE YOU EVER TREATED WITH BRACES FOR CROOKED TEETH?

YES	NO
-----	----

5) DO YOU LIVE IN MITCHELLS PLAIN ?

YES	NO
-----	----

WHERE DO YOU LIVE. (Suburb)

--

6) HOW MANY PEOPLE LIVE IN THE HOUSE WITH YOU

--	--

7) HOW MANY PEOPLE LIVING WITH YOU WORK

--	--

8) IS THERE TAP WATER IN YOUR HOME

--	--

9) IS THERE ELECTRICITY IN YOUR HOME

--	--

10) IS THERE A TELEPHONE IN YOUR HOME

--	--

11) HAS ANYBODY IN YOUR HOME ATTENDED UNIVERSITY OR COLLEGE ?

YES	NO
-----	----

12) HOW SATISFIED ARE YOU WITH YOUR GENERAL APPEARANCE?

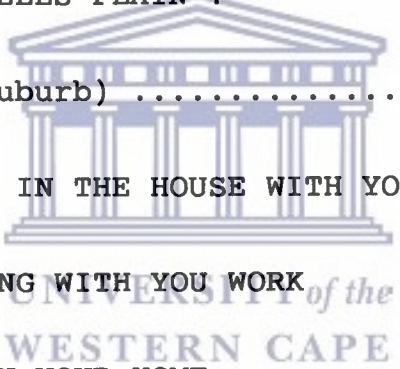
VERY HAPPY	SATISFIED	UNHAPPY	VERY UNHAPPY
------------	-----------	---------	--------------

13) HOW SATISFIED ARE YOU WITH THE GENERAL APPEARANCE OF YOUR TEETH?

VERY HAPPY	SATISFIED	UNHAPPY	VERY UNHAPPY
------------	-----------	---------	--------------

14) HOW SATISFIED ARE YOU WITH THE SIZE OF YOUR TEETH?

VERY HAPPY	SATISFIED	UNHAPPY	VERY UNHAPPY
------------	-----------	---------	--------------



15) HOW SATISFIED ARE YOU WITH COLOUR OF YOUR TEETH?

VERY HAPPY	SATISFIED	UNHAPPY	VERY UNHAPPY
------------	-----------	---------	--------------

16) HOW SATISFIED ARE YOU WITH THE APPEARANCE OF YOUR HAIR?

VERY HAPPY	SATISFIED	UNHAPPY	VERY UNHAPPY
------------	-----------	---------	--------------

17) HOW SATISFIED ARE YOU WITH THE APPEARANCE OF YOUR FACE?

VERY HAPPY	SATISFIED	UNHAPPY	VERY UNHAPPY
------------	-----------	---------	--------------

18) COMPARED TO OTHER FRIENDS OF YOUR AGE, HOW DO YOU THINK YOUR TEETH LOOK?

BETTER	THE SAME	WORSE
--------	----------	-------

19) WHAT PART DO YOU FEEL TO BE THE MOST IMPORTANT?

FACE	HAIR	FIGURE	TEETH	CLOTHES
------	------	--------	-------	---------

20) ARE YOU EVER TEASED BECAUSE OF YOUR FACIAL APPEARANCE?

ALWAYS	SOMETIMES	NEVER
--------	-----------	-------

21) ARE YOU EVER TEASED BECAUSE OF THE WAY YOUR TEETH LOOK?

ALWAYS	SOMETIMES	NEVER
--------	-----------	-------

PLEASE LOOK AT THE SLIDES AND ANSWER BOTH THE QUESTIONS TICK ONLY ONE CHOICE FOR EACH QUESTION.

1	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

2	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

3	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

4	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

5	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

6	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

7	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

8	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

9	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

10	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
11	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
12	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
13	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
14	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
15	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
16	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
17	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
18	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

19	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
20	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
21	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
22	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
23	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
24	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
25	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
26	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	
27	I think this person looks	VERY GOOD	GOOD	UGLY	VERY UGLY
	If this was me, I would	BE HAPPY	WANT TREATMENT	DON'T KNOW	

8.3.2 AFRIKAANS
 (TURN OVER FOR ENGLISH)

--	--	--

OM 'N BETER ORTODONTIESE DIENS TE VERRYK HET ONS U HULP NODIG. SAL U ASSEBLIEF DIE VOLGENDE VRAE BEANTWOORD DEUR DIE BLOKKE TE MERK OF IN TE VUL, OM U KEUSE TE MAAK. 'N REEKS SKYFIES SAL LATER VERTOON WORD. U MOET AANDUI WAT U VAN DIE VOORKOMS VAN DIE PERSOON OF TANDE DINK. MERK NET EEN ANTWOORD VIR ELKE VRAAG.

PERSOONLIKE INLIGTING

1 OUDERDOM

--	--

 JARE 2) GESLAG

MANLIK	VROULIK
--------	---------

Y Y M M D D

3) GEBOORTE DATUM

--	--	--	--	--	--

4) HET JY AL " BRACES" GEDRA OMDAT JOU TANDE SKEEF WAS?

JA	NEE
----	-----

5) WOON JY IN MITCHELLS PLAIN?

JA	NEE
----	-----

WAAR WOON JY (woongebied).....

--

6) HOEVEEL MENSE WOON SAAM IN JULLE HUIS?

--	--

7) HOEVEEL MENSE IN JULLE HUIS WERK?

--	--

8) HET JULLE HUIS ELEKTRISITEIT?

JA	NEE
----	-----

9) HET JULLE KRAAN WATER IN JULLE HUIS?

JA	NEE
----	-----

10) IS DAAR N' TELEFOON IN JULLE HUIS?

JA	NEE
----	-----

11) HET ENIGE PERSOON IN JULLE HUIS NA UNIVERSEIT OF KOLLEGE GEGAAN?

JA	NEE
----	-----

12) HOE TEVREDE IS JY MET JOU ALGEMENE VOORKOMS?

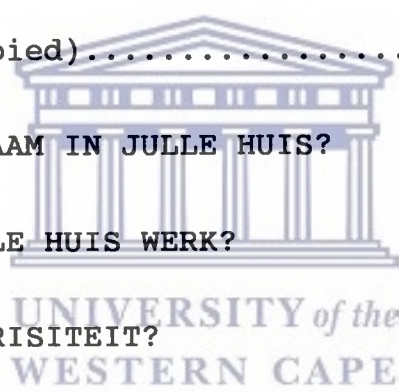
BAIE TEVREDE	TEVREDE	ONGELUKKIG	BAIE ONGELUKKIG
--------------	---------	------------	-----------------

13) HOE TEVREDE IS JY MET DIE ALGEMENE VOORKOMS VAN JOU TANDE?

BAIE TEVREDE	TEVREDE	ONGELUKKIG	BAIE ONGELUKKIG
--------------	---------	------------	-----------------

14) HOE TEVREDE IS JY MET DIE GROOTE VAN JOU TANDE?

BAIE TEVREDE	TEVREDE	ONGELUKKIG	BAIE ONGELUKKIG
--------------	---------	------------	-----------------



15) HOE TEVREDE IS JY MET DIE KLEUR VAN JOU TANDE?

BAIE TEVREDE	TEVREDE	ONGELUKKIG	BAIE ONGELUKKIG
--------------	---------	------------	-----------------

16) HOE TEVREDE IS JY MET DIE VOORKOMS VAN JOU HARE?

BAIE TEVREDE	TEVREDE	ONGELUKKIG	BAIE ONGELUKKIG
--------------	---------	------------	-----------------

17) HOE TEVREDE IS JY MET DIE VOORKOMS VAN JOU GESIG?

BAIE TEVREDE	TEVREDE	ONGELUKKIG	BAIE ONGELUKKIG
--------------	---------	------------	-----------------

18) HOE VERGELYK DIE VOORKOMS VAN JOU TANDE MET DIE VAN JOU VRIENDE EN ANDER KINDERS VAN JOU OUDERDOM?

MOOIER	DIESELFDE	LELIKER
--------	-----------	---------

19) WATTER GEDEELTE VAN JOU VOORKOMS DINK JY IS DIE MEES BELANGRIKSTE?

JOU

GESIG	HARE	FIGUUR	TANDE	KLERE
-------	------	--------	-------	-------

20) IS JY OOIET GETERG OOR DIE VOORKOMS VAN JOU GESIG ?

ALTYD	SOMS	NOOIET NIE
-------	------	------------

21) IS JY OOIET GETERG OOR DIE VOORKOMS VAN JOU TANDE ?

ALTYD	SOMS	NOOIET NIE
-------	------	------------

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KYK NA DIE VOLGENDE SKYFIES EN BEANDWOORD DIE TWEE VRAE VIR ELKE SKYFIE. MERK SLEGS EEN ANDWOORD VIR ELK VRAAG.

1	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
2	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
3	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
4	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
5	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
6	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
7	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
8	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
9	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	

10	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
11	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
12	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
13	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
14	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
15	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
16	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
17	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
18	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	

19	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
20	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
21	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
22	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
23	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
24	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
25	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
26	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	
27	Ek dink die persoon se voorkoms is	BAIE GOED	GOED	LELIK	BAIE LELIK
	As dit ek was, sal ek	GELUKKIG WEES	BEHANDELING WIL HE	WEET NIE	

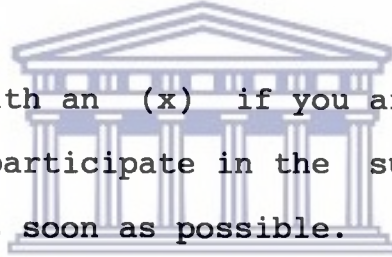
8.4 APPENDIX 4 - CONSENT FORM

Dear Parent

The University of the Western Cape Dental Faculty is busy collecting information on the orthodontic treatment needs of the Mitchells Plain community so that a better orthodontic service could be established.

To do this, we need your child to complete a questionnaire about facial and dental appearances and to comment on a series of slides showing various combinations of straight and crooked teeth.

Kindly indicate with an (x) if you are happy/unhappy for your child to participate in the survey and return it to the school as soon as possible.



UNIVERSITY of the

MY CHILD CAN / CAN NOT PARTICIPATE IN THE STUDY.

Thank you

Dr E. Theunissen

8.5 APPENDIX 5 - ARRANGMENT OF SLIDES IN SLIDE SHOW

Number	Description of slide	Veiw	Cond
1	Central diastema	F	D6
2	Class II - maxillary protrusion	-	P7
3 *	Moderate Crowding	F	D3
4	Mild crowding	F	D2
5	Class III mild	L	D13
6	"Ideal occlusion"	F	D1
7	Class I-increased lower face height	-	P3
8	Anterior open bite	F	D8
9 **	Class II mild	L	D10
10	Class II severe	L	D11
11	Class 111 severe/cleft lip repair scar	-	P10
12***	Class I moderate bimaxillary prognathism	-	P5
13	Buccal positioned canines buccally	F	D4
14**	Class II mild	L	D10
15	Class III severe	-	P9
16	Missing maxillary incisors	F	D9
17	Class I decreased lower facial height	-	P4
18	Generalized spacing	F	D7
19	Class III severe	L	D14
20	Class I severe bimaxillary prognathism	-	P6
21	Class II division 2	3/4	D12
22	Class I mild bimaxillary prognathism	-	P2
23	Severe crowding	F	D5
24	Class II retrusive mandible	-	P8
25***	Class I moderate bimaxillary prognathism	-	P5
26	"Ideal profile"	-	P1
27*	Moderate crowding	F	D3

F = frontal, L = lateral, D = dentition, P = profile,
Cond = condition (figure 1 and figure 2)

8.6 APPENDIX 6 - COMPARISON OF SATISFACTION OF APPEARANCE OF SCHOOL CHILDREN IN MITCHELLS PLAIN WITH DUTCH CHILDREN (NYMEGEN GROUP)

8.6.1 FACIAL

	Mitchells Plain		Nymegen Group	
Very satisfied	88.8	34.5	13.2	84.5
Satisfied		53.3	71.3	
Unhappy	12.3	11.4	12.3	15.5
Very unhappy		0.9	3.2	

8.6.2 DENTAL

	Mitchells Plain		Nymegen Group	
Very satisfied	86.9	29.6	19.4	79.2
Satisfied		57.3	59.8	
Unhappy	13.1	11.7	17.0	19.8
Very unhappy		1.4	2.8	

Table 21



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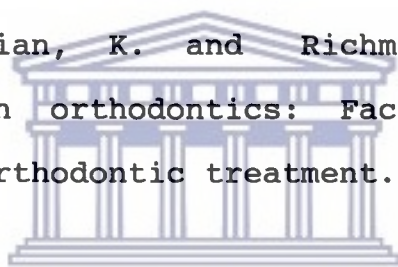
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