PSYCHOLOGICAL ASPECTS OF DENTOFACIAL SURGERY PATIENTS.

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Psychological Aspects of The Dentofacial Surgery Patient.

Summary.

The aims of this study were

1. To determine the motivation of people to have dentofacial surgery.
2. To determine the role of psychological variables in determining the level of patient satisfaction with the dentofacial surgical procedure.
3. The development of a rapid psychological screening questionnaire.

Psychological profiles of patients undergoing dentofacial surgery were assessed and compared with age and sex matched controls. The dentofacial surgery patients were subdivided into those who proceeded with the surgery, and those who for various reasons did not proceed.

Psychological profiles of the three patient groups were assessed by a questionnaire package consisting of:

1. Illness behaviour questionnaire
2. Body image questionnaire
3. Anxiety scales
4. Depression scale
5. Life events.

The results of the pre operative testing are presented and differences are discussed.

Patients who had dentofacial surgery were given a follow up questionnaire six months later. The repeated profiles are presented, and differences highlighted. Patient satisfaction with dentofacial surgical procedures was self and operator assessed and related to psychological profiles pre and post operatively. Satisfaction was also related to residual post operative complications.

The literature was reviewed in relation to the psychological profiles of patients undergoing cosmetic surgery such as rhinoplasty and mammoplasty, other non cosmetic surgical procedures, such as coronary artery bypass grafting and reconstruction following mastectomy, and those undergoing dentofacial surgery.

The reported patient population were compared to both the cosmetic and other surgical patients for similarities. The psychological profiles of the reported patient population was also compared to the profiles reported in the literature for concordance or otherwise.

Suggestions for future direction, including modification of the questionnaire package, are made.

DECLARATION.

I declare that this thesis contains no material which has been accepted for the award of any other degree or diploma in any university, and to the best of my knowledge contains no material previously published by another person except where due reference is made in the text.

PAUL JOHN SAMBROOK.

DATE 1-11-89

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I. INTRODUCTION.

"There may be some people who prefer to be bad than good. Some might even prefer to be poor than rich. But we take it on faith that no one prefers to be ugly."

(Udry and Eckland, 1984)

Facial appearance has many ramifications on the psychological profiles and behaviour of people. Much research has been conducted looking at the effect of facial appearance on many aspects of peoples lives, Bull and Stevens (1981), Rumsey et al (1982) and Bull (1982, 1988). Bull (1988) reports aspects such as:

- the influence of facial appearance and the proxaemic behaviour of those around
- the effect of facial appearance and social interaction
- the effects on helping behaviour
- the relationship of facial appearance and the penal and justice systems
- the effect on education.

People in our society strive for beauty, "....people expect good things to come to the beautiful. Folklore tells us that beautiful girls marry handsome princes and live happily ever after. Heroes are handsome and villains are ugly."(Udry and Eckland, 1984).

Methods of assessing psychological profiles are discussed in chapter II; chapter III follows with a discussion of the psychological profiles of patients seeking cosmetic surgery.

Cosmetic surgery seeks to improve facial appearance and with this the perceived benefit of improving the quality of ones life. Psychological profiles of people seeking such surgery are complex. This perceived benefit may be the lessening of the manifestation of psychiatric disease. Edgerton et. al. (1961) said of patients undergoing cosmetic surgery "....Although the initial psychological assessment procedure diagnosed only about 30 % of the sample as normal, well adapted people, a six month follow up study revealed that 94 % reported favourable psychological changes following surgery." This seems to indicate the benefit is real as well as perceived.

Berscheid (1981) takes this further "...good long term results of alteration procedures can be obtained only despite the fact that the people seeking the operation are doing so on the basis of neurotic or unrealistic motivation."

Orthognathic or dentofacial surgery was developed to treat skeletal disharmony between the jaws in order to improve masticatory efficiency. As a result of this a person's facial appearance may be altered. The motivation that these people have towards change may be somewhat different to the cosmetic surgery patient. Dissatisfaction with this type of surgery despite a technically reasonable result may be the result of unrealistic attitudes especially in relation to the change in facial appearance and general body image.

In an attempt to relate the profiles of patients undergoing dentofacial surgery with patients undergoing other types of surgery, the psychological profiles of patients awaiting coronary artery venous bypass grafts and those awaiting breast reconstruction following mastectomy, are reviewed, and presented in chapter IV.

The literature pertaining to psychological profiles of patients undergoing dentofacial surgery is discussed in chapter V.

This study seeks to examine the psychological profiles of patients undergoing dentofacial surgery.

The aims are threefold:

1. To determine the motivation of people to have dentofacial surgery.

2. To determine the role of psychological variables in satisfaction of outcome.

3. To develop a questionnaire that may be used to screen dentofacial surgery patients, to pick those with psychological problems so that more detailed psychological assessment and counselling can be arranged.

II. ASSESSMENT OF PSYCHOLOGICAL STATE.

Psychological evaluation of patients may be performed in three general ways,

1. Interview.
2. Structured interview.
3. Questionnaire.

INTERVIEW.

This is generally performed by trained psychiatric/psychological personnel, it is a technique that is time consuming and not performed in a standardised fashion.

STRUCTURED INTERVIEW.

Patients are interviewed by psychiatric or other personnel, and a pro forma is completed by the interviewer. Again this is time consuming; however, it is more standardised than the interview.

QUESTIONNAIRE.

Every person completes the same questionnaire, it is least time consuming of provider time, and it is standardised. This method does have its problems though.

1. Questions may be open to interpretation.
2. Patients may answer how they think they should be answered rather than how they really think.

3. Patients may not read the questions, and answer in a "donkey vote" style. This is especially so when patients only have to tick a box, or when the questionnaire is too long.
4. Patients who are unable to comprehend the written language are unable to complete it.

This study relies on the use of questionnaires to assess psychological state, as does most of the reported literature on this topic.

A number of questionnaire packages are available for assessment of psychological state, questionnaires such as Minnesota Multiphasic Personality Inventory. Due to success with other packages within the Oral and Maxillofacial Surgery Unit of the University of Adelaide and difficulties in obtaining and scoring other packages it was decided to produce a custom package with material already available and supplement this with a specific body image questionnaire reported in the literature by Secord and Jourard (1953).

The questionnaire package used in this study has been termed the Sambrook-Goss package and consists of six sections:

1. Illness behaviour questionnaire
2. Body image
3. Anxiety state
4. Anxiety trait
5. Depression
6. Life events.

2.1 *ILLNESS BEHAVIOUR QUESTIONNAIRE.*

Illness behaviour was a concept initially discussed by Mechanic (1962,1970). Within this is encompassed pain recognition and expression, receptivity to physical and psychiatric treatment, and escapism from obligations and responsibilities. (Gerke 1984.)

Pilowsky (1971) and Pilowsky and Spence (1976) developed the concept of abnormal illness behaviour. Their questionnaire was developed to test aspects of abnormal illness behaviour, they being:

1. General hypochondriasis
2. Disease conviction
3. Psychological versus somatic focusing
4. Affective inhibition
5. Affective disturbance
6. Denial
7. Irritability.

This has been used extensively in assessing aspects of illness behaviour in a number of clinical settings, these include, facial pain populations, patients who have just suffered myocardial infarcts, those undergoing coronary artery bypass grafts and those presenting to a general medical practitioner.

This is a self administered questionnaire consisting of sixty two items, from these the seven factors are derived,(see appendix 1(b))

1. General hypochondriasis. This is a phobic concern about ones state of health. Persons with this problem can have some degree of insight .

2. Disease conviction. This person is convinced that a physical disease exists and is preoccupied with symptoms. There is often rejection of the doctor's reassurance.

3. Psychological versus somatic focusing. A high score on this scale indicates that the person thinks they are in some way responsible for or in fact deserves the disease. They perceive the need for psychiatric rather than medical treatment.

4. Affective inhibition. This measures the difficulty the person has in expressing their feelings.

5. Affective disturbance. This state is characterised by feelings of anxiety and or sadness. This is also termed dysphoria.

6. Denial. The tendency to deny life stresses and attribute all problems to the illness.

7. Irritability. Assesses the presence of angry feelings and interpersonal friction.

Although this questionnaire is used to diagnose abnormal illness behaviour, it can be used to screen patients with other conditions. We have used this questionnaire to assess the psychological profiles and used normative data provided in the manual for grouping patients included in this study.

From the raw data a graphic profile can be obtained for each patient or group as illustrated in figure 1. This provides a graphic representation of the psychological profile of a particular patient.

Examples of the graphic profiles of patients with psychiatric disorders are presented on the following pages. All of the examples are taken from Pilowsky (1982).

The values on the x axis refer to the scales, viz

Factor 1. General hypochondriasis.

Factor 2. Disease conviction.

Factor 3. Psychological versus somatic focusing.

Factor 4. Affective inhibition.

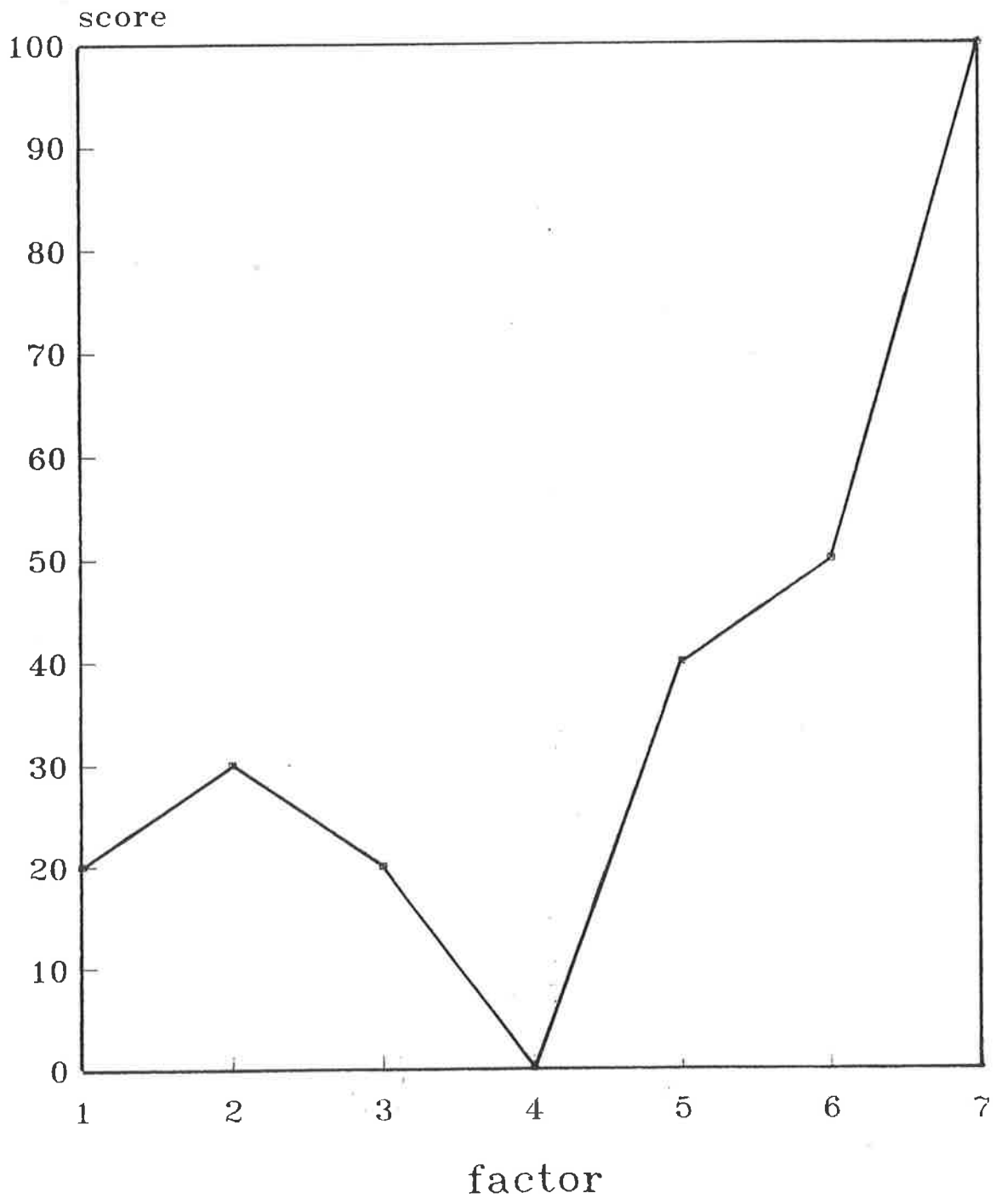
Factor 5. Affective disturbance.

Factor 6. Denial.

Factor 7. Irritability.

This questionnaire can not be used to impute formal psychiatric diagnosis alone, rather it is used to ascertain those patients who require further psychiatric assessment and or counselling prior to surgery.

Figure 1 Example of graphic representation of the illness behaviour questionnaire.



The graph, figure 2 on the following page shows the profile of someone with an affective disorder. It shows that this person has scored maximally on affective disturbance and irritability. The denial score is low and the score on somatic versus psychological focusing high, indicating a degree of somatic preoccupation. Additionally a degree of hypochondriasis is present.

Figure 2 Affective disorder.

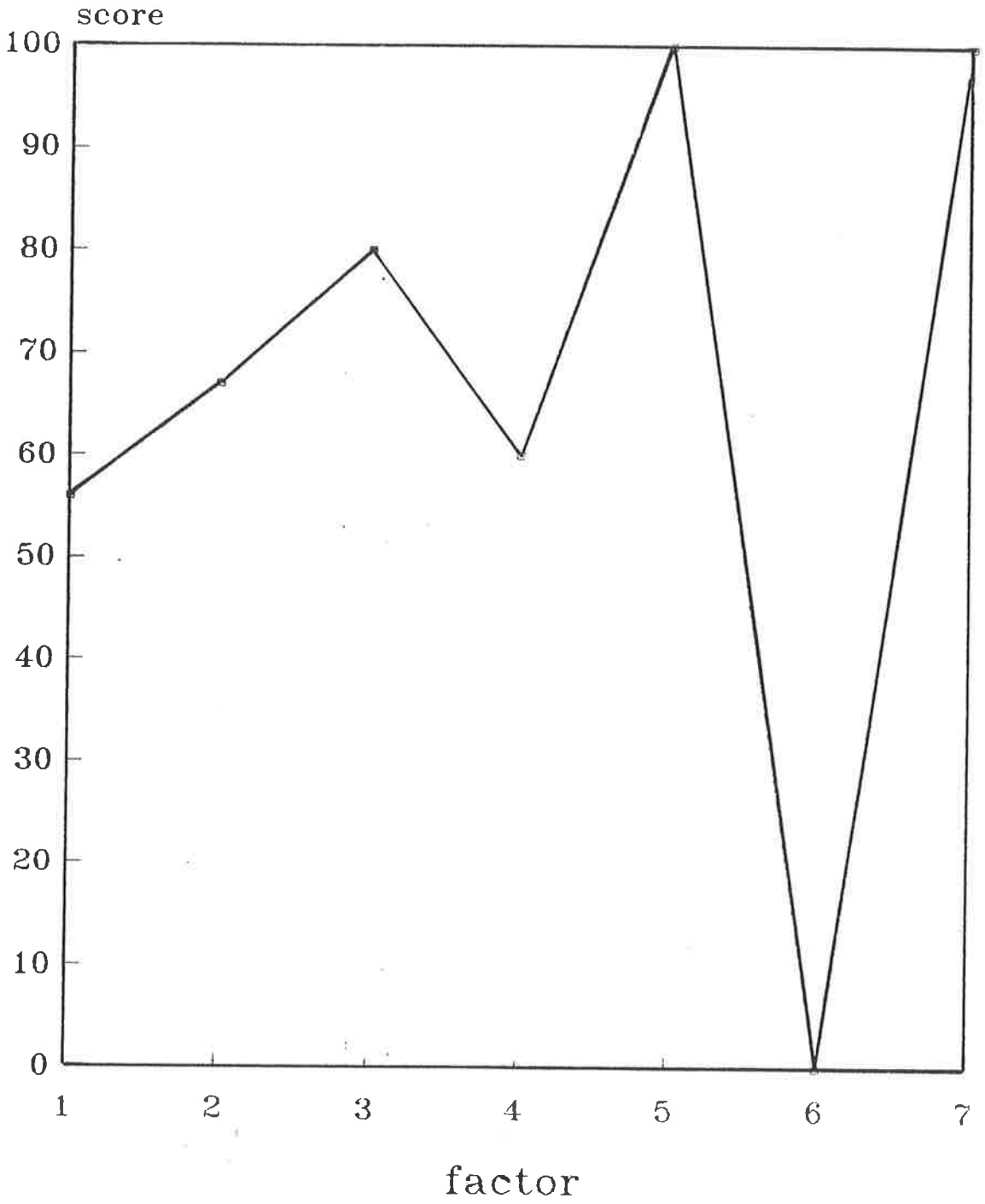
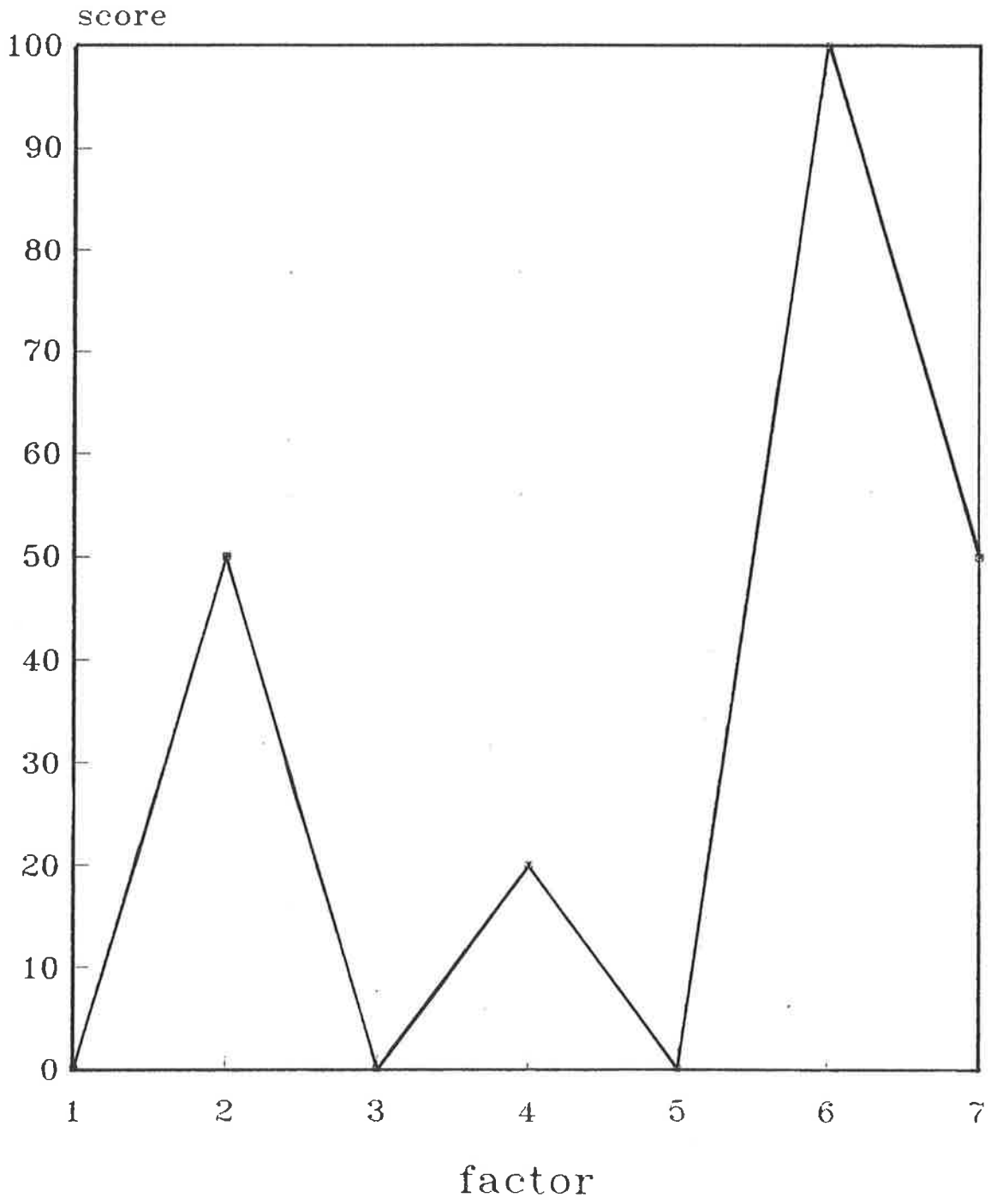


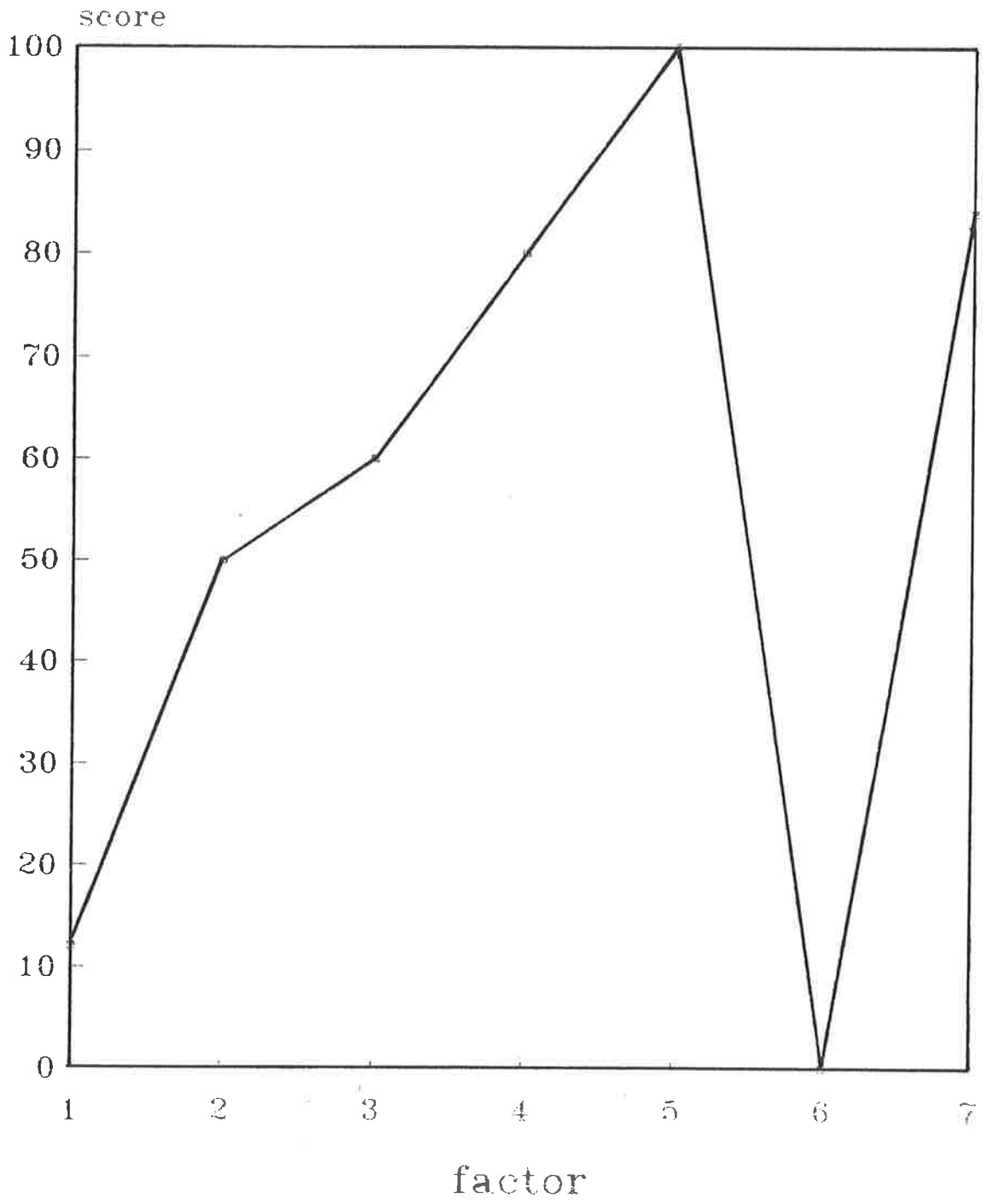
Figure 3 is the representation of a conversion disorder. It shows that there is a complete lack of hypochondriasis, and complete denial. The low scores on psychological versus somatic focusing and affective disturbance, together with the complete denial indicates that a conversion disorder is probable.

Figure 3 Conversion disorder.



This last example is that of a reactive depressive illness, figure 4 this is shown by the maximal scores on affective disturbance and irritability. This patient recognises the psychological and social components indicated by the high score on Factor 3 and the low denial score.

Figure 4 Reactive depressive illness.



2.2 *BODY IMAGE.*

The body image questionnaire used within the Sambrook-Goss package was described by Secord and Jourard in 1953. The purpose of their paper entitled " The appraisal of body cathexis: Body cathexis and the self." was to test three specific hypotheses,

"1. Feelings about the body are commensurate with feelings about the self when both are appraised by similar scales.

2. Negative feelings about the body are associated with anxiety in the form of undue autistic concern with pain, disease or bodily function.

3. Negative feelings about the body are associated with feelings of insecurity involving the self."

They also set out to develop a method for appraising the feelings of individuals towards their bodies, that is assessment of body image.

Body cathexis is defined as the degree of satisfaction or dissatisfaction with the various parts or processes of the body.

Self concept is the concept the person has of themselves.

The subjects of this study were asked to consider forty six body parts and functions and rate them on a scale of one to five, the scale headings being,

1. have strong feelings and wish change could be made somehow.
2. don't like but can put up with.
3. have no particular feelings one way or the other.

4. am satisfied.

5. consider myself fortunate.

This study did show that self valuation of the body and the self were commensurate, they also found that negative feelings about the body are associated with anxiety, and finally hypothesis three was also confirmed, that is, that negative feelings about the body are associated with feelings of insecurity involving the self.

This group was successful in developing a method of appraising body cathexis. The general format used in this paper has been used for the assessment of body image in the Adelaide population. (see appendix 4.)

The changes that were made to make it applicable for this study were,

1. Items elimination, digestion, sleep, voice and posture were excluded from the questionnaire. From the pilot study it was evident that these items were poorly understood by this patient population.

2. Items lips and teeth were split into upper and lower lips and teeth to gain a more specific dentofacial body image.

3. Wording of the group headings became,

i not happy, want changed.

ii not happy - tolerate.

iii no particular feelings.

iv satisfied.

v consider fortunate.

These changes were made to make them more easily understood by this patient population.

2.3 *ANXIETY STATE.*

A series of twenty questions used to assess the anxiety a person is experiencing at the time of completing the questionnaire. This scale was described by Spielberger (1975). The questions are ordered in a particular order and worded such that the person is unable to answer by rote.

An example of this test along with the scores for the questions can be found in appendix 3(a).

2.4 *ANXIETY TRAIT.*

This is a second series of twenty questions used to assess the possibility of the candidate having an anxiety disorder, or the predisposition for counterproductive feelings of anxiety. This questionnaire was also described by Spielberger (1975). The format is similar to the anxiety state scale and is scored by a similar method.

This questionnaire is remarkably consistent for an individual and so may be used as a lie score when retesting patients.

An example of the test can be found, along with the scoring sheet in appendix 3(b).

2.5 *DEPRESSION.*

Depression may be a symptom or disorder. (Zung, 1965.) A clear differentiation must be made between these two in the surgical setting.

People with certain depressive disorders do not make good surgical candidates. These are the obsessive or paranoid patients that request surgery, often for minor complaints, in order to change aspects of their life, an example of this is a man who experiences interpersonal relationship problems and feels that facial surgery will help him achieve success. These patients require much pre operative counselling and realistic goal setting. They must be made aware that changes in dentofacial image may not correct their perceived general problems.

People with exogenous depression, with correction of the cause, may be reasonable candidates for surgery. Depression is precipitated by particular events in these people and is not part of their general personality.

The self rating depression scale is one that accurately demarcates those with depressive disorders. It consists of twenty questions, each answer is given a numeric score of one to four, and an index is derived by adding all of the scores together and dividing by the maximum score of eighty.

Zung reports the results of a number of surveys as follows,

1. patients admitted to hospital and have a confirmed diagnosis of depressive disorder have an average index of .75 prior to treatment and an index of .39

after treatment.

2. The average index for a control group is 0.33.

3. A group admitted to hospital with an admission diagnosis of depressive disorder but subsequently discharged with another diagnosis had an average index of 0.53.

Thus this is a sensitive assessment of depressive state, people with this disorder scoring extremely highly. These results show also that the lower scores are non specific, the group of patients admitted with a diagnosis of depressive disorder, subsequently discharged with another diagnosis scored significantly higher than controls and significantly less than the depressed patients.

2.6 *LIFE EVENTS.*

The final part of the Sambrook-Goss package is life events. Research in this area have linked depression, depressive relapse and the onset of certain psychiatric illnesses and the occurrence of certain life events. (Holmes and Rahe, 1967; Paykel et al, 1969; Paykel and Tanner, 1976; Rabkin and Struening, 1976.)

The last study cited (Rabkin and Struening, 1976) found a significant relationship between life events and cardiac death, myocardial infarct, accidents, injuries, tuberculosis, multiple sclerosis, diabetes and psychiatric illness. These studies indicate that life events or stress contribute to certain types of psychiatric illness, and people cope with stress in different ways.

How a person copes with stress is dependent on many factors, Rabkin and Struening (1976) cites,

Mediating factors.

1. characteristics of the stressful situation,
2. individual biology and psychological attributes and
3. social supports.

Social support systems seem to be as important as social stressors. Social stressors in the presence of strong social support systems have minor effects on health, the converse also being true.

Stressor characteristics.

1. Magnitude,
2. Intensity,
3. Duration,
4. Unpredictability and novelty and
5. Preparedness and prior experience.

Surgery, including cosmetic and dentofacial surgery, is stressful for patients. In addition to screening for depressive illness one has to be aware of the effects of stress. Factors influencing satisfaction and recovery may include the presence or absence of social support.

Social isolation, patients presenting for surgery to gain acceptance, social marginality and status inconsistency are aspects of social history of paramount importance to elucidate fully prior to any elective surgical procedure.

III. COSMETIC SURGERY PATIENTS.

A great deal of work has been published in the plastic surgery, general surgery and psychological literature on the psychological status of patients seeking cosmetic surgery, Hill and Silver (1950); Belfer (1982); Berscheid and Gangestad (1982); Edgerton et al (1982); and McGregor (1982).

The types of procedures that have been discussed include rhinoplasty, face lift including blepheroplasty, otoplasty and mammoplasty for cosmetic reasons. The surgery involved in these procedures is described in reference works in aesthetic surgery, Converse (1977) and Rees (1980).

One of the first large studies was that of Edgerton (1961), in which ninety eight consecutive patients who presented for cosmetic surgery with minimal deformity, were referred to a psychiatrist for psychological evaluation. These patients had presented for face lifts, rhinoplasty, mammoplasty or other procedures such as otoplasty. It was found that a high proportion of these patients had identifiable psychiatric disease, seventy per cent of this group could be assigned a psychiatric diagnosis, sixteen percent were diagnosed psychotic, twenty per cent neurotic, and thirty five per cent were diagnosed as having a personality disorder.

The purpose of determining the psychological status of a patient, is to gain an impression of whether the patient is able to benefit both physically and psychologically with the type of surgery that can be offered. Psychological

status can also be important in determining whether a patient will be satisfied with the result of surgery. Edgerton (1961) went further and reviewed these patients six months post operatively to determine their satisfaction with the procedure He found that overall forty five of forty six operated patients were pleased enough with the results to state that they would repeat the operation if necessary. Edgertons' conclusions went on to report that assignment of a formal psychiatric diagnosis could not be used as an indication or contra-indication to surgery.

Edgerton (1961) highlighted sex differences in psychological profiles, males tended to have the more serious psychiatric disorders, and patients presenting for correction of minor skin blemishes showed a higher incidence of serious depressive reactions.

Other studies in this area have taken this theme further trying to elucidate factors that would be predictive of satisfaction of outcome.

Reich (1982) in his survey of over three thousand patients found that about eighty per cent had social problems, sixty per cent had self consciousness about interpersonal relationships and an additional twenty five per cent suffered social isolation.

Reich divided his population group into a number of personality types.

The obsessive person. This person is well organised, orderly rigid and ritualistic, are very demanding of surgery, and often demands guarantees. Reich went on to comment that the chance of such a person being satisfied with the results of

the surgery was remote.

The dependent person. This person constantly needs the support of others. If handled correctly such a patient tends to be satisfied with the results.

The hysterical person. Such people are warm and friendly, able to express their feelings easily. Having undergone surgery they become easily apprehensive about minute details of follow up, i.e. dressing changes. On the whole these patients tend to be pleasant to deal with and on the whole satisfied with the results.

The paranoid personality. Reich calls these sensitive individuals who display delusional thinking in relation to actual or imagined deformity. Suspicion, restlessness and hostility can be other symptoms. This is the type of person that poses a potential threat to the aesthetic surgeon. Surgeons have been killed by this type of person.

The schizoid personality. These were described as shy individuals, displaying a passive attitude, often not consistent in describing what they would like to have done. These people will be found to be unappreciative no matter what has been done.

As it can be seen in this paper Reich attempts to categorise his patients in a non psychiatric setting and assign a personality type. It has been his experience in treating this large number of people that psychiatric diagnosis can be used as a basis for estimating satisfaction of outcome, and an indication

where further pre operative counselling is required.

There are many other reports in the literature, many of them coming to similar conclusions. They are:

1. That patients request cosmetic surgery for a variety of reasons.
2. There is a large group within this population with significant psychiatric disease.
3. The response of certain patients to the surgical experience can be traced to the type of psychiatric disorder.
4. Patients with psychiatric disease do not necessarily make bad surgical candidates, in fact many patients with a diagnosed disorder can benefit from surgery.
5. Psychiatric assessment is required to determine those patients who may require further evaluation and psychiatric treatment prior to surgery.
6. Psychiatric diagnosis can not be used as reliable method to screen patients on which to operate.

Psychiatric assessment must be used in conjunction with all other clinical examinations and special investigations to decide whether a patient is a suitable candidate for surgery.

IV. NON ELECTIVE SURGICAL PATIENTS.

In this section the psychological profiles of patients undergoing non elective procedures, such as reconstruction following mastectomy and patients awaiting coronary artery venous bypass grafting will be reviewed. These profiles will be compared to the psychological profiles of patients undergoing cosmetic surgery and dentofacial surgery. This has been done to try to categorise where the dentofacial surgical patient population belongs.

With cosmetic surgery the patients have time to be psychologically prepared for the surgery, they have the option of not proceeding with the knowledge that they have not turned down life saving surgery.

Two patient populations will be discussed, those undergoing breast reconstruction following mastectomy for breast carcinoma, and those about to undergo coronary artery venous bypass grafting, for coronary artery insufficiency. Patients who are to have breast reconstruction or coronary artery venous bypass grafting often present acutely, events occur rapidly and the alternative to not proceeding with the operation may be death. The onslaught of many events associated with the diagnosis makes these groups of patients less psychologically prepared for the surgery.

4.1 *RECONSTRUCTION FOLLOWING MASTECTOMY.*

The obvious group of patients to compare seems to be those undergoing breast reconstruction following mastectomy as there is a direct patient group to compare: those undergoing mammoplasty for cosmetic reasons.

Mastectomy patients did not prove to be a fruitful comparative group, the psychological profiles were overshadowed by other psychological issues. These issues included coping with the diagnosis of malignancy and the risk of recurrence. Goin (1982) reports the breast to be a symbol of femininity, womanliness, nurturing and being nurtured. The patient has to overcome the loss of all that the breast represents.

Following the diagnosis of malignancy these patients undergo a grieving process of denial, rage and depression followed by acceptance.

Goin (1982) reports that patients for breast reconstruction following mastectomy provide some of the most psychologically challenging surgical patients.

The anxieties of patients who have had mastectomy are said to be two fold,

1. The life threatening fears evoked by the diagnosis of cancer and
2. The mastectomy itself.

Reconstruction of the breast may alleviate the anxiety associated with the breast loss; however, it may concentrate the anxiety on aspects of the diagnosis and the patient may concentrate on fears of recurrence.

Following reconstruction women have reported pleasure, the sense of feeling whole again and the loss of the feelings of mutilation.

The female who seeks cosmetic mammoplasty presents with a similar psychological profile to the patients as previosly discussed in the cosmetic surgery chapter.

The dentofacial surgery patient does not have to cope with a loss, nor a life threatening diagnosis, thus their psychological profiles are not directly comparable to this group of patients.

4.2 *PATIENTS AWAITING CORONARY ARTERY BYPASS GRAFTING.*

The other group of patients that has been researched is those about to undergo coronary artery bypass grafting.

Pilowsky et al (1979) used the illness behaviour questionnaire to assess patients about to undergo coronary artery bypass grafting. The purpose of the study was to determine the role of pre operative psychosocial variables in success or failure of this procedure. Pilowsky et al(1979) were looking for psychological variables that would be associated with a satisfactory outcome. This study therefore, has similar aims to the present study.

Pilowsky et al (1979) discovered eleven factors present within this population. They divided these factors into two major groups,

1. Psychosocial factors,
2. Illness related factors.

The four psychosocial factors were found to be stable over at least two different clinical settings. These four factors being,

1. Denial,
2. Affective inhibition,
3. Irritability,
4. Affective disturbance.

Pilowsky found that apart from irritability these factors did not have a role in predicting outcome.

A factor labelled responsiveness to reassurance, together with irritability was related to outcome.

The patients discussed in this paper were awaiting coronary artery bypass grafts and as such also had to cope with the diagnosis of heart disease. Again these patients would have to proceed through the stages of coping with the diagnosis of heart disease, denial initially being prevalent.

The closing statement of this paper is relevant to this ongoing study, "These results perhaps imply that those dimensions unique to a clinical population may be as useful as established factors in relating illness behaviour to treatment outcome."

Although the above two patient populations are not directly comparable to the dentofacial surgery population, they do make the point that perhaps we should be looking at population specific characteristics if attempting to predict satisfaction and success with surgical procedures.

V. DENTOFACIAL SURGERY PATIENTS.

In contrast to the literature on the psychological profiles of patients undergoing cosmetic surgery, there has been a relative paucity of literature on the psychological profiles of people undergoing dentofacial surgery.

The types of procedures that fall into this category are the subcranial osteotomies of the maxilla and or mandible .
As this was not a study of operative procedures, the following description is therefore brief. Further details of these procedures may be obtained from the department of Oral and Maxillofacial Surgery, University of Adelaide, in the form of detailed operative protocols, Goss et al (1989), or in the reference texts, Hinds and Kent (1972), or Epker and Fish (1976)

MAXILLARY PROCEDURES.

1. **Lefort 1.**

This is a maxillary osteotomy at the level just above the nasal floor. All of the maxillary teeth and the palate are included in the osteotomised segment.
All soft tissue incisions are made intra orally. See figure 5.
There are a number of modifications,
I. The maxilla may be segmentalised into a number of dento-alveolar segments to gain better occlusal relationships.

II. The osteotomy cuts can be taken higher to include the infra orbital rims, the nasal portion remaining intact. If the orbital rims were to be moved a lower eyelid or infra orbital incision was required.

All of these osteotomies are generally stabilised with mini plates and screws and intermaxillary fixation is not required.

2. **Wunderer and Schuchardt.**

These are dento alveolar osteotomies, and have a similar effect to the Lefort 1; however the nasal floor is not disturbed. Again all of the incisions are intra oral.

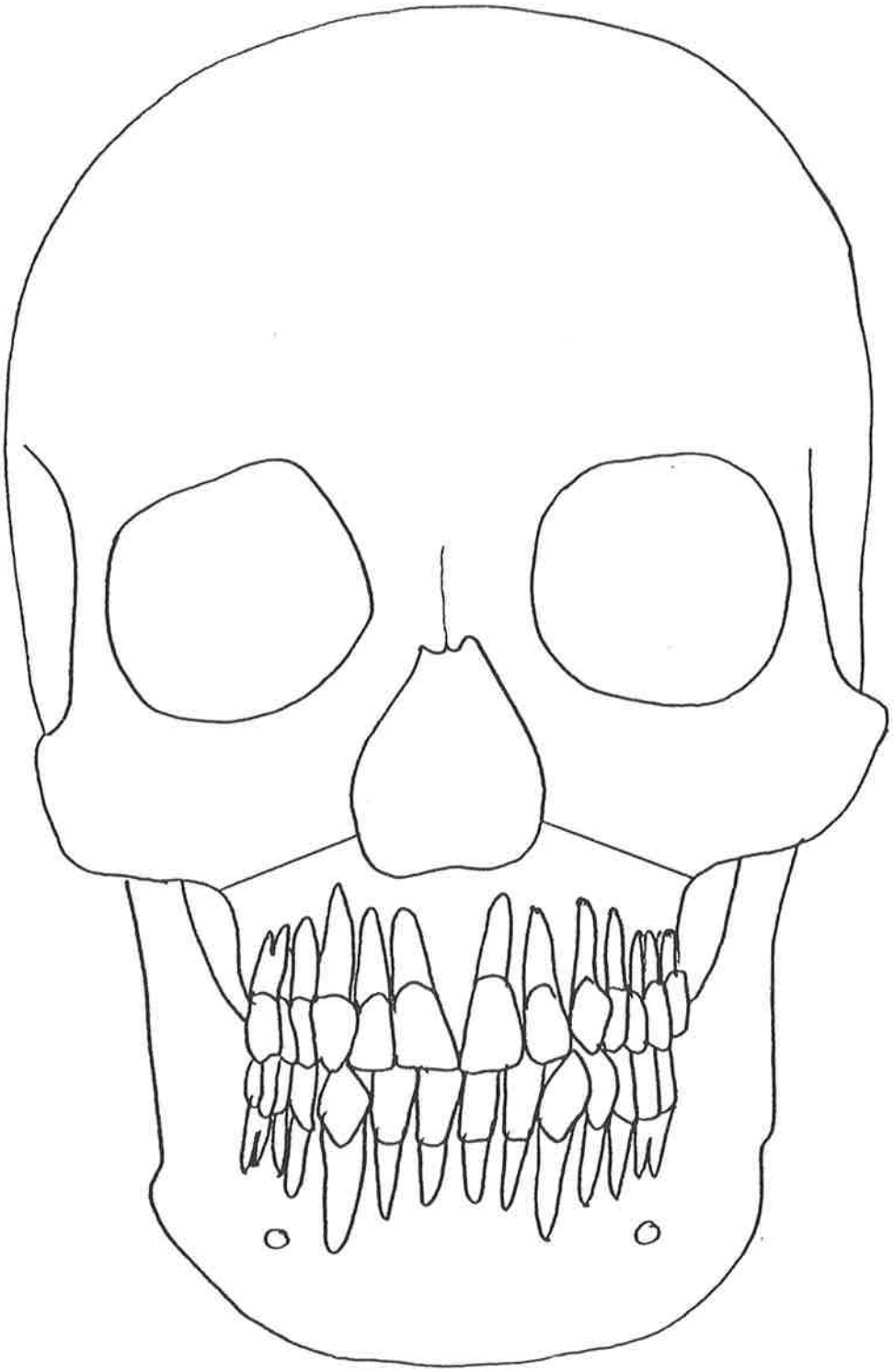


Figure 5. Diagram showing the position of the bony cut in the Lefort 1 maxillary osteotomy.

MANDIBULAR PROCEDURES.

One or a combination of the following was performed.

I. Sagittal Split.

This is generally used for advancing the mandible. Again all incisions are inside the mouth, the mandible is split sagitally in the third molar region and repositioned. See figure 6. This osteotomy is generally stabilised with screws or plates and intermaxillary fixation is not required.

2. Vertical Subsigmoid.

This type of osteotomy is used to retrude the mandible in prognathic patients. The posterior aspect of the ramus of the mandible, with the condyle, is cut from the rest of the mandible. Screw fixation is not effective for this osteotomy and thus intermaxillary fixation is required. See figure 7.
All incisions are made within the oral cavity.

3. Step.

Movements are possible in three directions. As the name implies a stepped cut is made in the body of the mandible and a piece removed for retrusion or a graft placed for advancement. See figure 8.

All incisions are intra oral, internal fixation is possible and so intermaxillary fixation is not required.

4. Hofer/Kole.

These are anterior dento alveolar osteotomies. Usually the lower six anterior teeth are involved; they can be superiorly, inferiorly, posteriorly or anteriorly repositioned. See figure 9.

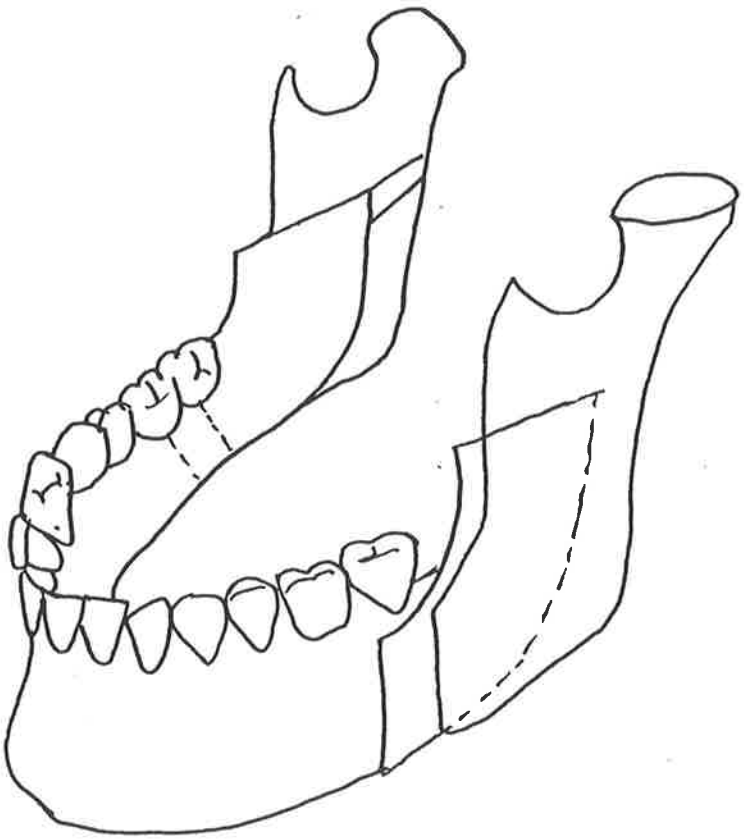


Figure 6 i. Diagram illustrating the sagittal split mandibular osteotomy.

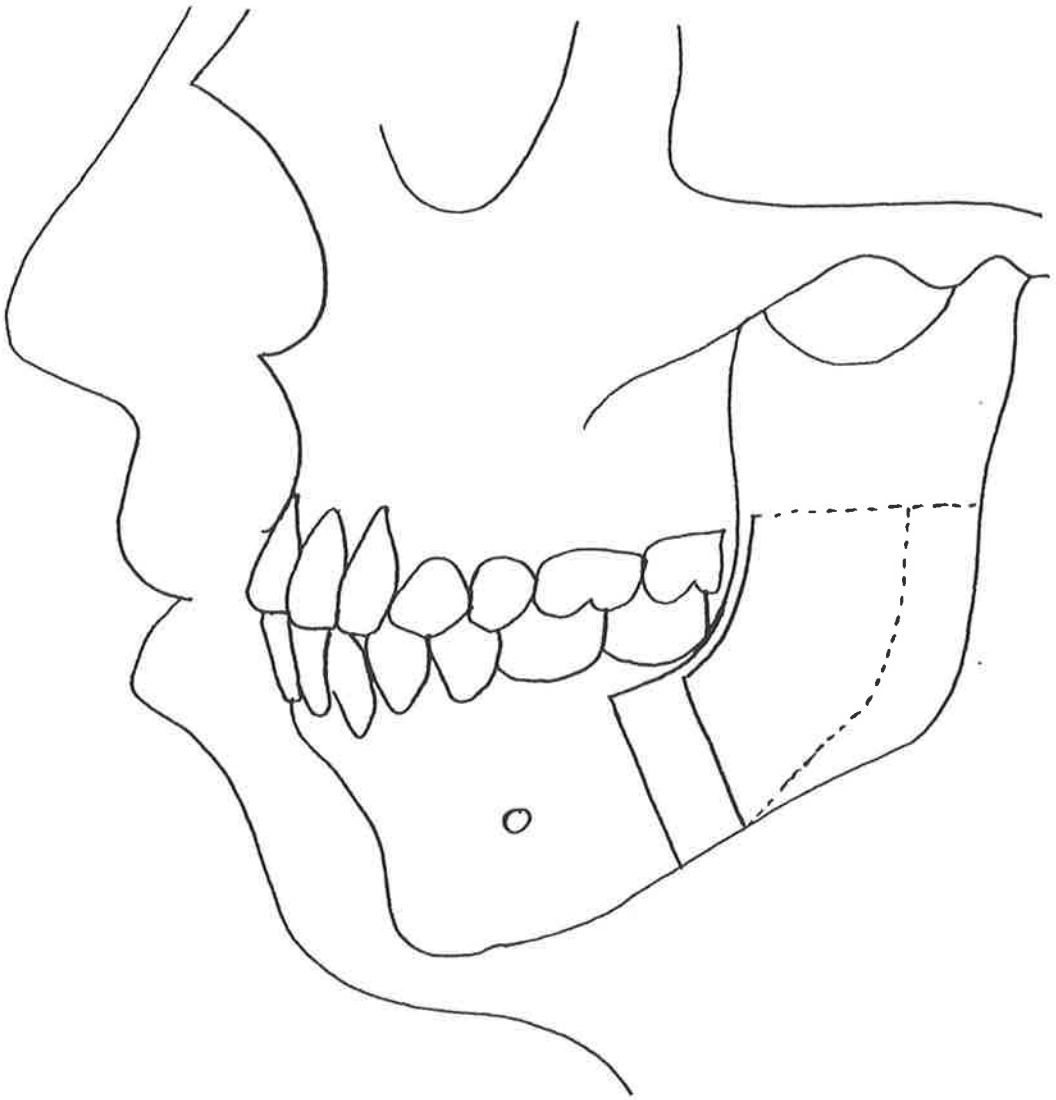


Figure 6 ii. Diagram illustrating the sagittal split mandibular osteotomy.

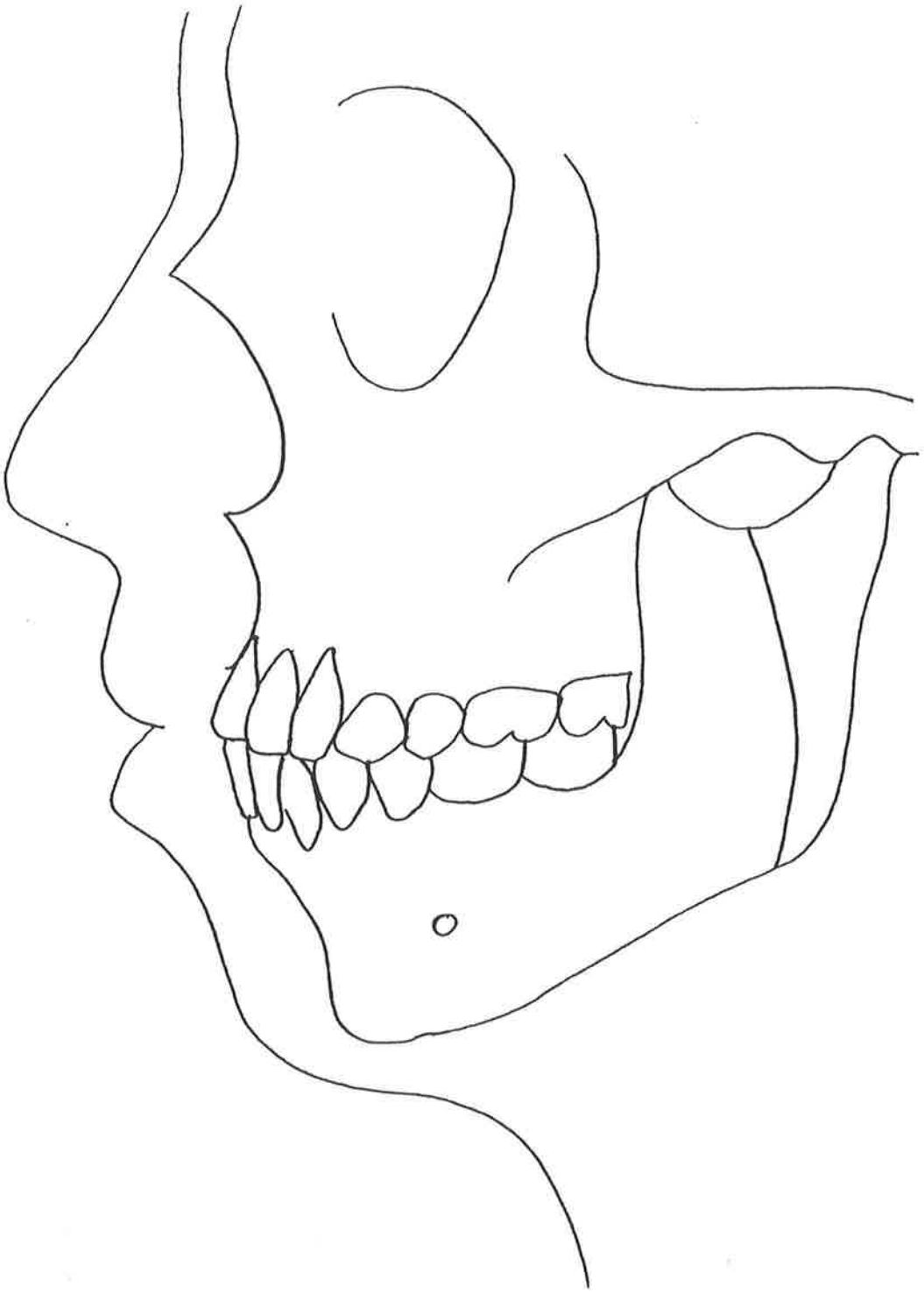


Figure 7. Position of the bony cut in the vertical subsigmoid mandibular osteotomy.

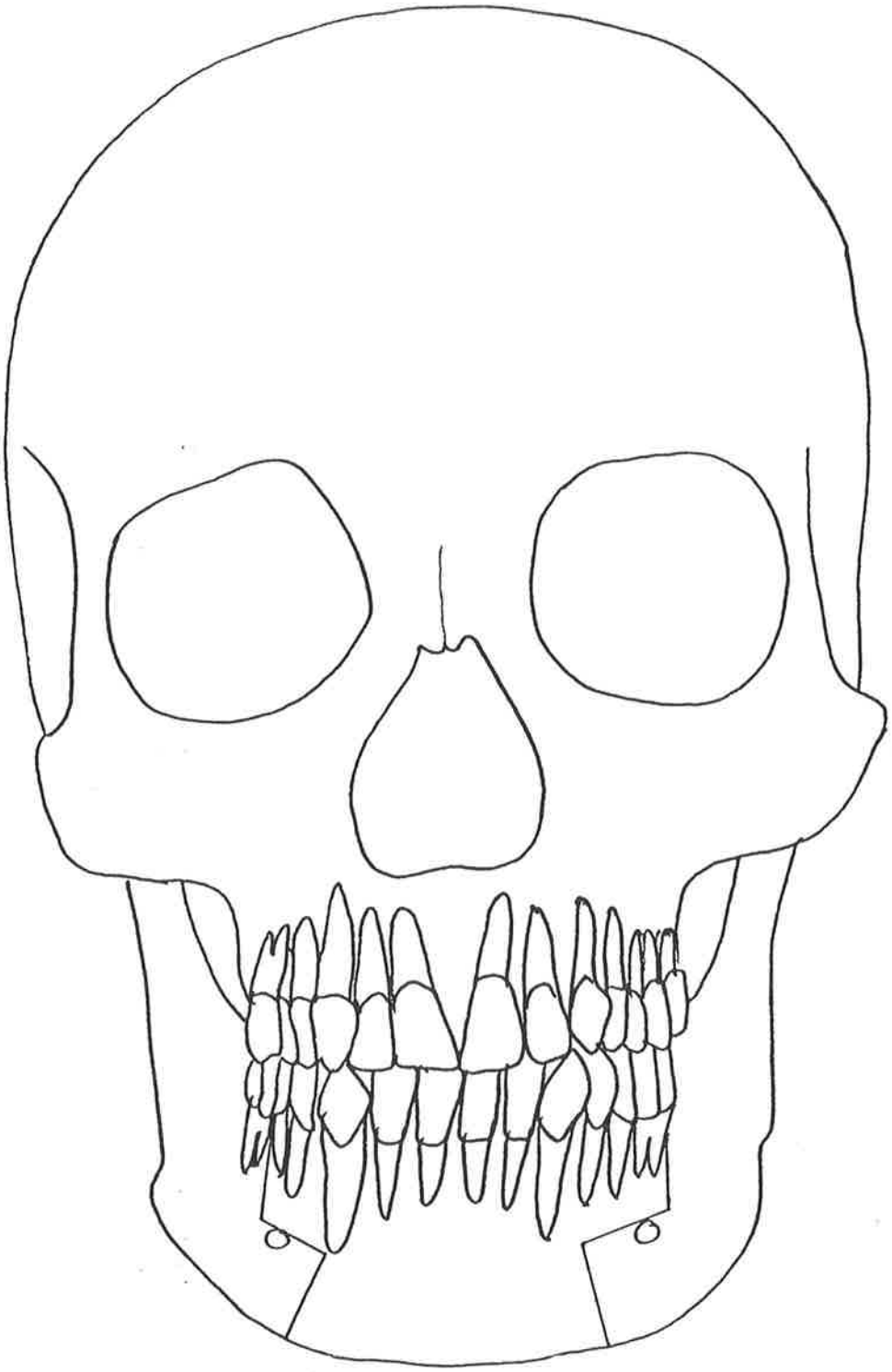


Figure 8. Diagram illustrating the step mandibular osteotomy.

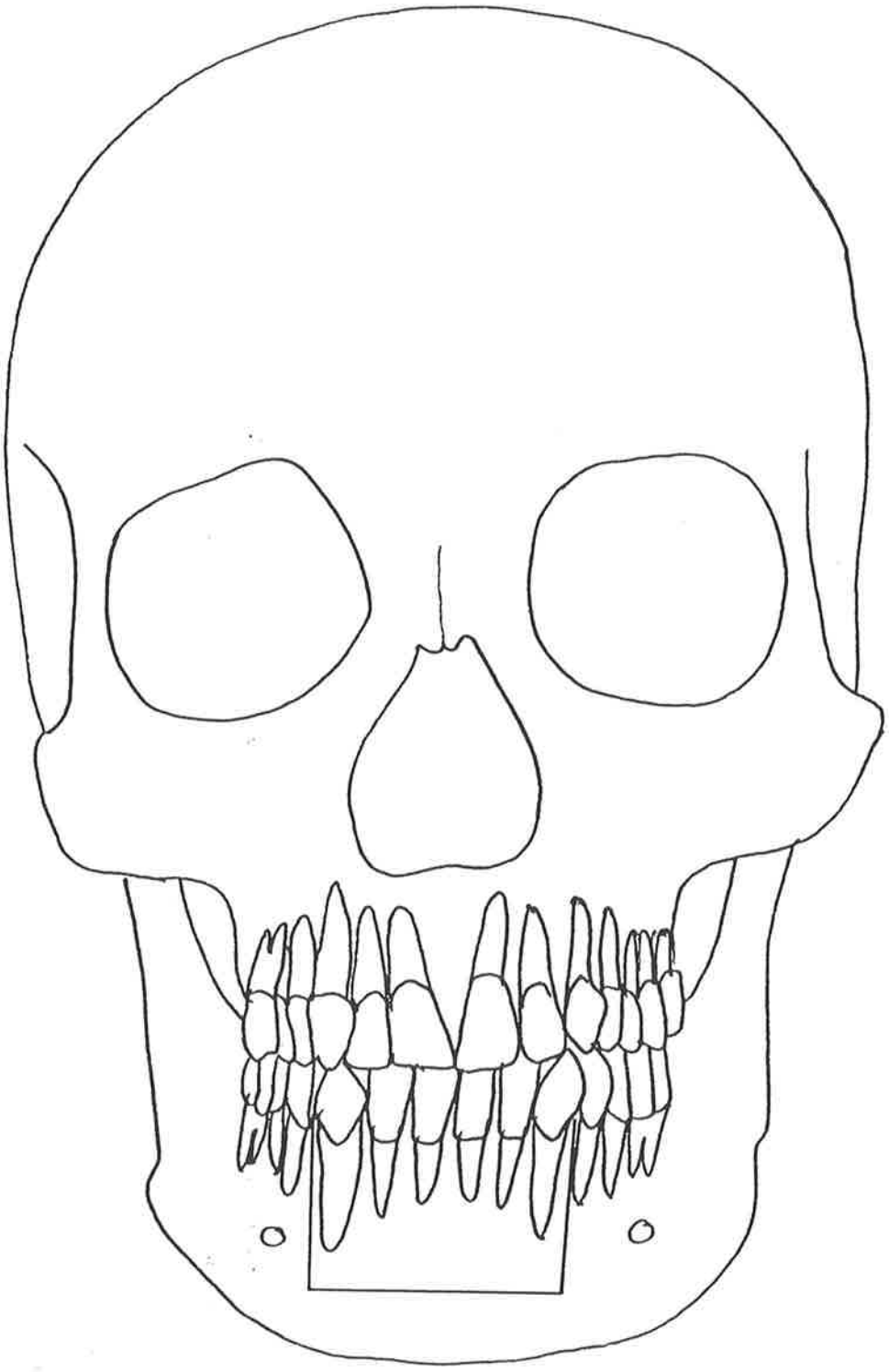


Figure 9. Position of the bony cuts in the Hofer and Kole mandibular osteotomies.

CHIN PROCEDURES.

All of the chin procedures were performed from within the oral cavity, they were all anterior horizontal mandibular osteotomies of one form or another. The chin can be advanced or retruded and or increased or decreased in vertical height. Asymmetries were also corrected. See figure 10.

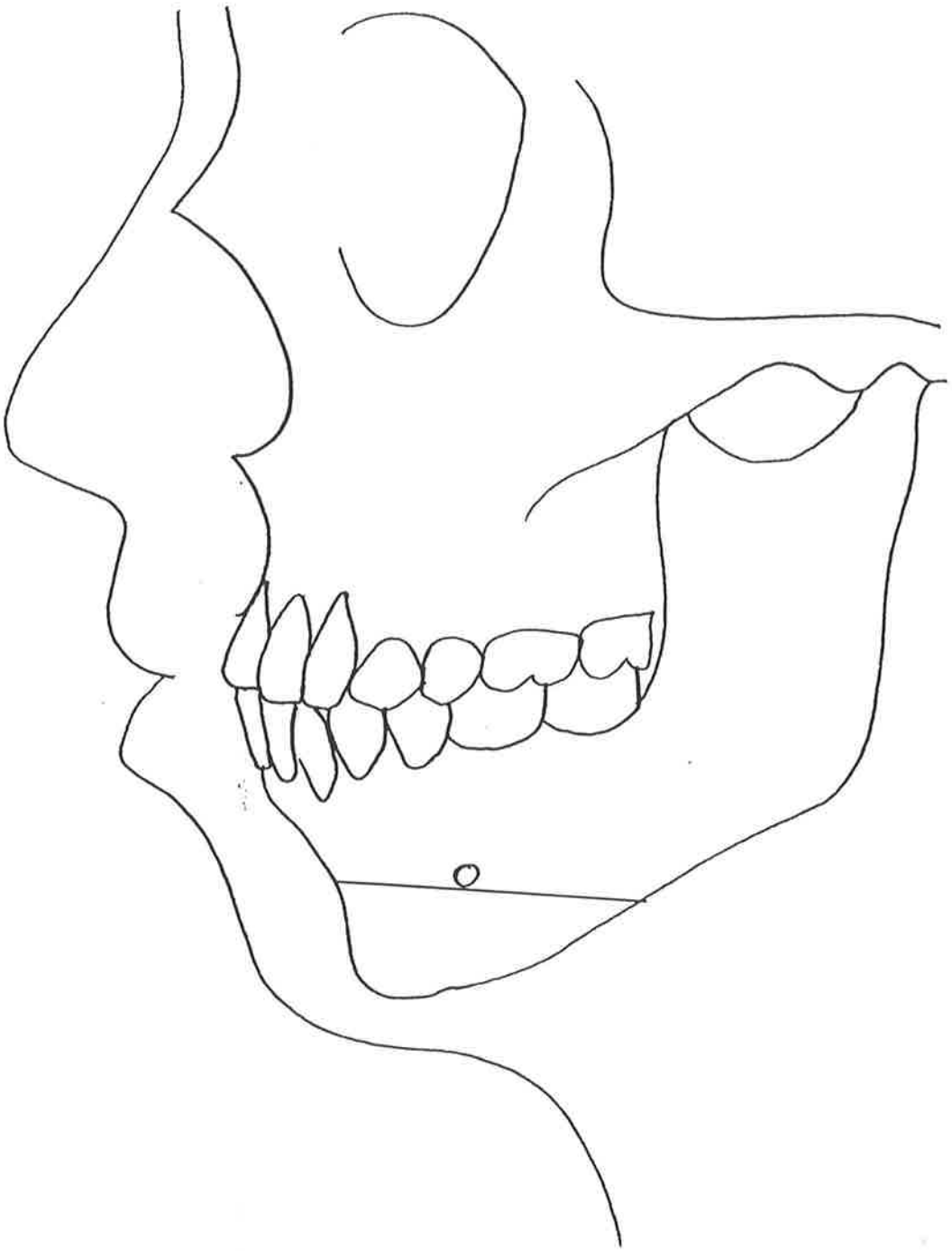


Figure 10. Illustration of the bony cuts involved in doing the chin procedures as described.

With all of the osteotomies described, patients will have facial oedema which ranges from mild to gross, most of the oedema has resolved within two to three weeks, however some can persist taking up to six to eight weeks to resolve.

Although all primary incisions are intra oral, stab incisions on the face are occasionally used to facilitate the placement of screws, this is especially so in the fixation of the sagittal split osteotomy. Patients thus may complain of scars within the oral cavity, usually in the buccal sulcus of the mandible or maxilla, or in a small area at the angle of the mandible on the face.

Without exception all of the osteotomies described involve one or more branches of the trigeminal nerve. The third division can be damaged at the angle of the mandible region during a sagittal split or at the mental foramen region during a chin procedure. The second division can be damaged at the infraorbital foramen region during the Lefort I. Patients, as a result, can have areas of anaesthesia or paraesthesia of the cutaneous distribution of the above nerves. This nerve disturbance is generally transient resolving as the facial oedema resolves; it can, however, persist.

The recent literature contains a small number of papers based on observation, Peterson and Topazian (1974,1976) or retrospective analysis of results with a psychological bias, Hutton (1967); Rittersma (1981); Flanary and Alexander (1983); and Flanary et al (1985).

During the last decade a large prospective study was undertaken by a group in Seattle, Washington State, Bell et al (1982) and Kiyak et al (1981, 1982 [1,2], 1984, 1986, and 1989). A smaller prospective study of thirty patients was reported by Auerbach et al (1984).

The results of these studies seem to indicate that the dentofacial surgery patient population is basically free of recognisable psychiatric disease. This is, as previously discussed, quite different to the cosmetic surgery population.

Dentofacial surgery is different to purely cosmetic procedures in that there is a functional component, that is the person experiences masticatory difficulty or temporomandibular joint symptoms, as well as a cosmetic component to the patient's problem.

Dentofacial surgery patients seem to have several motives for surgery, some external (for instance on orthodontic or dental advice), and some internal (for instance desire to improve chewing ability or the desire to improve one's facial appearance).

Kiyak et al have reported the results of their work in a series of eight articles dating from 1981 to 1989. These are the reports of a longitudinal study of 156 patients. This group has looked at the psychological profiles and any sex differences (Kiyak et al, 1981), the emotional impact of the surgery (Kiyak et al, 1982[2]) and compared their findings to a group of patients having

conventional orthodontics only (Kiyak et al, 1985). They have also explored the possibility of using personality characteristics as a basis to predict satisfaction of outcome (Kiyak 1982[1]).

This study has found that basically dentofacial surgery patients are not neurotic, they have a satisfactory general body image perhaps disliking only aspects of their body which involve their dentofacial deformity.

Patients may be offered surgery to correct orofacial function, correct a dentofacial cosmetic deformity or both, they are more likely to accept the decision to undergo the surgery if they perceive aesthetics will improved.(Bell et al, 1985)

Kiyak et al in Seattle followed a group of patients for over two years and looked at the changing psychological profiles.

1. Immediately following the surgery the patients' levels of tension and anxiety rose, there was fatigue, loss of vigour and some depression. Anger and hostility reached their lowest level immediately postoperatively.

2. At four to six weeks anger and hostility peaked accompanied by tension, anxiety and depression. As all of the patients had intermaxillary fixation that was probably related. There was a consistently high correlation between mood states and post operative problems.

3. At nine months surprisingly there seemed to be a significant decline in self esteem. Overall body image remained good. At this time some attention may be focused on body parts, specifically facial parts, previously overlooked. At this time there was also a decreased patient satisfaction compared with the satisfaction demonstrated at the three to four week stage. Kiyak put this down

to the patients finally realising that the way that they now looked was the way they were finally going to look or function and there was not going to be any further improvement. The patient had now reconciled how they thought they would look with the results of the surgery.

4. At twenty four months there was again a high level of satisfaction. Assessing the patients that had residual psychological problems suggested that the primary determinant of satisfaction was whether the outcome was perceived as being an aesthetic improvement. If the patient perceived any aesthetic improvement in facial features, their satisfaction was higher regardless of any functional problems. The patients' self concept with respect to self and relationships returned to their presurgical levels (Kiyak et al, 1984.).

Auerbach et al reported a prospective study in 1984 which assessed the psychological status of patients undergoing dentofacial surgery with a psychological questionnaire package. This report is in agreement with that of Kiyak, in that generally dentofacial surgery patients are free of significant psychiatric disease, in particular that they are not neurotic. There are no significant changes in adjustment other than a decline in anxiety post operatively. Pre operative measures of psychological status were found to be unrelated to post operative differences in adjustment.

An additional two points that were raised that are worth commenting upon were,

1. That some patients have a need for detailed explanation and preparation and that the pre operative psychological evaluation may be used to determine who these people are.

2. That interpersonal relationships between the patient and the surgeon may be as important as the information being supplied.

Flanary and Alexander (1983) and Flanary et al (1985) have reported the results of psychological investigation of dentofacial surgery patients. This was the result of a retrospective study of ninety patients. Perceptions of the experience and factors leading to dissatisfaction were investigated.
The thirteen conclusions reported in these papers are as follows;
they are divided into three broad areas:

I. Motivations and concerns.

1. Roughly one half of the patients presented with this treatment option will demonstrate initial reticence. Especially those whose motivation is functional rather than aesthetic.
2. Patients with an appearance rationale for surgery have less difficulty adjusting to their appearance change than do those with strong functional motives.
3. Persons are more likely to take a risk to improve their appearance than to improve dental function.
4. Older patients will demonstrate more concern about surgical risks than will younger patients.

II. Presurgical preparation.

5. More females will desire to speak with a patient who has undergone a similar procedure to their planned procedure.
6. Those patients who do not receive adequate explanation are more likely to be emotionally unprepared.
7. Post operative "surprises" seem to be one of the leading factors in patients dissatisfaction with surgery.

III. Post surgical outcome.

8. Surgical goal fulfilment does not guarantee that the patient would re-elect to undergo the treatment.
9. Patients tend to forget about the degree of post operative pain with time.
10. Two jaw procedures lead to significantly more pain complaints than single jaw procedures.
11. Maxillary procedures precipitate less severe pain complaints than mandibular procedures.
12. Anterior maxillary osteotomies provoke reports of minimal pain.
13. Maxillary osteotomies precipitate more initial complaints of breathing difficulty and sinus problems.

Hutton (1967) also reported the results of a retrospective study of dentofacial surgery patients to determine satisfaction of outcome. Eight of these patients did not respond to follow up. The results showed that all of the patients

were satisfied with the results of the surgery. Over one half of the patients reported that they definitely had an agreeable change in their personality as a result of the surgery. This paper highlights the importance of good patient preparation.

Peterson and Topazian (1976) provide an excellent summary of the problem, and also of the reason why psychological evaluation is necessary. The main reasons given that evaluation is required are:

1. A significant number of patients analyzed by strict psychiatric criteria have serious emotional disturbances.
2. A number of patients were dissatisfied despite successful correction of their deformities.

Peterson and Topazian (1976) report on their method of psychological evaluation highlighting aspects that they consider important. Their evaluation is by structured interview under the following main categories:

1. Nature of the deformity.
2. State of social adjustment. Under this section, reference is made to life events because of the significance these have in predicting response to surgery.
3. Personality.
4. Motivation.
5. Expectations.

On the basis of what is found the patients are assigned to one of three groups,

Group 1. Highly positive reactors. Excellent candidates for surgery.

Group 2. Neutral reactors. These people generally require extra attention and counselling prior to surgery but are generally satisfied with the results.

Group 3. Negative reactors. Generally dissatisfied with the results of the surgery.

The previous discussion has shown that objective evaluation of dentofacial surgery patients reveals them to be basically free of the psychiatric disease present in the cosmetic surgery population. Even though this may be the case, there is still a need for evaluation as there is a number of patients who are dissatisfied with technically satisfactory surgery, and there is a small percentage who present that do have psychiatric disease who would be best treated prior to surgery.

Patients need to be prepared adequately for the surgery, otherwise dissatisfaction will result (Flanary et al, 1985). Rittersma et al (1980) looked at patient preparation for dentofacial surgery and related dissatisfaction to pre operative preparation, he also found that the dissatisfied ones were the ones that felt they were inadequately prepared in some aspects. On the basis of this audit they made some recommendations and now provide appropriate written information as well as spoken information with an emphasis on the negative side effects.

VI. METHODS AND MATERIALS.

All patients presenting to the Oral and Maxillofacial Surgery Unit of the Adelaide Dental Hospital for consideration of dentofacial surgery were included in this study.

These patients were initially seen by one of seven Oral and Maxillofacial Surgery consultants. Subsequent work up was performed by one of twelve registrars, including the author.

Patients given a psychological package excluded the following:

1. Those who had known major psychiatric illness.
2. Those who were unable to comprehend English.

Patients were asked to complete a number of psychological questionnaires on two occasions. Additional demographic, diagnostic and treatment data was collected by looking at patient case records.

6.1 *PRE OPERATIVE VISIT.*

At the initial visit to the registrar, after diagnostic records (appendix 7) were completed the patient was asked to complete the Sambrook/Goss package.

This consists of the following:

1. Illness behaviour questionnaire. (Pilowsky and Spence, 1983)

This questionnaire is presented in appendix 1. part a.

Aspects of illness behaviour tested include:

(i) hypochondriasis,

(ii) disease conviction,

(iii) psychological versus somatic focusing,

(iv) affective inhibition,

(v) affective disturbance,

(vi) denial,

(vii) irritability.

2. Body Image. (Secord and Jourard, 1953)

This questionnaire forms appendix 2.

This tests a number of aspects of body image:

(i) General body image, that is what the person thinks about his/her body as a whole.

(ii) Specific questions about body image as it relates to the face and jaws.

This has been modified only to make terminology contained within the questions applicable to Australian society.

3. Spielberger anxiety state and trait. (Spielberger, 1975)

This consists of two questionnaires of twenty questions each. The first assesses anxiety the person is experiencing at the time of completing the questionnaire, anxiety state. The second assesses whether anxiety is a part of the person's personality, anxiety trait.

The Spielberger anxiety state (SS) test is presented in appendix 3, part a, and the anxiety trait (ST) test in appendix 3, part b.

4. Zung depression test. (Zung, 1965)

This test also consists of twenty questions which assess if a person is depressed or is of a depressive nature. Appendix 4 contains an example of this test.

5. Life events questionnaire. (Holmes and Rahe, 1967)

This questionnaire is presented in appendix 5, part a.

A number of life events are presented, for patients to indicate whether they had occurred in their life, and how often. Each item is weighted as indicated in appendix 5, part b.

A score was derived for each item by adding the number of events per year, up to five events, and the number of years, up to three years and multiplying this

by the weighted score. A combined score was derived by adding together the score for each item.

At this time a pre operative patient profile was completed for each patient. This included

1. Patient status.

Age, sex, and occupation.

2. Source of referral and registrar primarily responsible for the work up of the patient.

3. Medical status.

Patients free of significant systemic disease and fit for general anaesthesia were scored as fit. Those who had significant systemic disease requiring referral to specialist medical or anaesthetic departments prior to general anaesthesia were scored as unfit.

4. Psychosocial history.

This score was used as an indication of pre operative psychological status. Patients with a stable background were scored as such, those with a history of psychiatric disorder requiring specialist psychiatric treatment were scored as unstable. If a psychosocial history was not formally taken, the patients were scored as unknown. This was not taken to be an exclusion category for the dentofacial surgery, as this was completed after the surgery. In terms of the

control group persons with known psychiatric disease were excluded.

5. Dentofacial diagnosis.

This was coded in terms of-

(i) location of the deformity.

(ii) plane of the deformity- coronal, sagittal or vertical.

(iii) nature of the deformity- hyper or hypoplasia.

6. Proposed treatment.

Again coded in terms of-

(i) location of the procedure.

(ii) type of procedure.

An example of the pre treatment patient profile is located in appendix 6, part a.

In terms of work up the decision to proceed was made after patient discussion, assessment of motivation and on anatomic grounds. This questionnaire package was not used as a decision making tool on whether or not to proceed, although ultimately the plan would be to use it in this role.

6.2 POST OPERATIVE VISIT.

At six months following surgery at a regular follow up visit the patients were again asked to complete a questionnaire package.

This package contained -

1. The Sambrook/Goss psychological questionnaire package.

2. A self directed assessment of the outcome. Patients were asked to indicate whether they were pleased with the way that they now looked and the way that they could now function and how they rated aspects of the hospital and surgical experience. They were additionally asked to indicate, whether, if a close friend or relative had the same problem they would encourage them to have surgery. See appendix 6, part b.

A **post operative patient profile** was also completed following examination of the patient by the author or Dr A.N.Goss. The reviewer indicated whether he thought the patient was satisfied with function and appearance. Residual complications were also listed, complications such as nerve disturbance, scars and temporomandibular joint dysfunction. The original plan was to use one reviewer; however, due to interstate and overseas commitments two examiners were required. Both examiners used standard criteria and format to assess residual disabilities and satisfaction with appearance and function.

See appendix 6, part c.

6.3 CONTROL GROUP.

The control group consisted of patients referred to the Oral and Maxillofacial Surgery Unit for dento alveolar surgery. That is these patients were to have their third molars removed, or other minor procedures. Specifically these patients did not have a dentofacial deformity.

Each person in the control group was approached and asked to participate. This occurred while they were waiting to have their procedure, after being admitted to the Day Surgery Unit of the Royal Adelaide Hospital. Each person was asked to complete the Sambrook/Goss package, the patients name, age, sex and the operative procedure were also recorded.

Patients were selected for the control group on the basis of age and sex matching with patients undergoing dentofacial surgery at the time.

Persons with known major psychiatric disease were excluded from the control group.

6.4 DATA PROCESSING.

The questionnaires were then coded by the author and after checking numbers were transferred to a VAX computer data base.

Using the Statistics Package For The Social Sciences (SPSSX) (1983), analyses of percentage occurrence and frequency statistics were performed on the raw data.

The raw data was then grouped according to published and derived criteria and statistical analysis of paired variables performed. Significance was taken at $< .01$ for chi-square, and $< .05$ for student t-test.

VII. RESULTS.

7.1 PATIENT DATA.

The patient data by age, sex and experimental group is presented in table I.

Table I PATIENT DATA.

GROUP	NUMBER	SEX, M/F	AV.AGE RANGE S.D.
NON OPERATED	40	13/27	22.25 12-50 8.77
OPERATIVE	40	10/30	21.62 12-41 7.03
CONTROL	40	12/28	21.00 13-34 5.17

NUMBER OF PATIENTS WHO HAD SURGERY 1987 - 1989
.....147
NUMBER OF SURGICAL PATIENTS GIVEN THE QUESTION-
AIRE PACKAGE..... 78
NUMBER OF PACKAGES NOT RETURNED
..... 36

This shows that fifty percent of patients who were contemplating and being assessed to undergo dentofacial surgery actually proceeded with the surgery. The control group is age and sex matched with the operative group. More females than males undertook the surgery.

There were no significant differences between the experimental groups, in age, results of paired T-Tests are presented in table II.

Table II PAIRED T-TEST FOR AGE BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	44	78
T-TEST	.24 E.V.	.41 U.V.	.45 E.V.
SIGNIF.	N.S	N.S.	N.S.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control.

Table III shows that there was not a significant difference in the sex composition between any of the experimental groups.

Table III CHI-SQUARE FOR SEX BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
chi-square	.55	0.06	.25
signif.	N.S.	N.S.	N.S.

Experimental groups.
I : non operative group
II : operative group
III : control

7.2 RESULTS FROM THE ILLNESS BEHAVIOUR QUESTIONNAIRE.

The scores on the illness behaviour questionnaire by experimental group are presented in table IV.

Table IV RAW SCORES FROM THE ILLNESS BEHAVIOUR QUESTIONNAIRE BY EXPERIMENTAL GROUP.

FACTOR	NON OPERATED	OPERATIVE	CONTROL
1	2.02 SD 1.94	2.15 SD 2.34	1.65 SD 1.66
2	1.42 SD 1.23	1.57 SD 1.96	1.30 SD 1.07
3	1.85 SD 0.66	1.87 SD 0.77	2.15 SD 0.58
4	2.45 SD 1.61	2.67 SD 1.54	2.15 SD 1.67
5	1.77 SD 1.44	1.52 SD 1.50	1.65 SD 1.53
6	3.12 SD 1.38	3.20 SD 1.40	2.57 SD 1.68
7	2.25 SD 1.35	2.70 SD 1.71	2.27 SD 1.52

Factor 1 General hypochondriasis
Factor 2 Disease conviction
Factor 3 Psychological versus somatic focusing
Factor 4 Affective inhibition
Factor 5 Affective disturbance
Factor 6 Denial
Factor 7 Irritability

This table shows that generally the operative group has the higher scores and the control group the lower. Paired T-Tests were performed on all of these groups, results, degrees of freedom and significance are presented in tables V - XI.

Table V PAIRED T-TEST FOR GENERAL HYPOCHONDRIASIS BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.27 E.V.	.92 E.V.	1.10 E.V.
SIGNIF.	N.S.	N.S.	N.S.

FACTOR 1.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

Table VI PAIRED T-TEST FOR DISEASE CONVICTION BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	40
T-TEST	.27 E.V.	.47 E.V.	.19 U.V.
SIGNIF.	N.S.	N.S.	N.S.

FACTOR 2.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

Table VII PAIRED T-TEST FOR PSYCHOLOGICAL VERSUS SOMATIC FOCUSING BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.12 E.V.	2.16 E.V.	1.83 E.V.
SIGNIF.	N.S.	< .05	< .05

FACTOR 3.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

Table VIII PAIRED T-TEST FOR AFFECTIVE INHIBITION BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.62 E.V.	.82 E.V.	1.45 E.V.
SIGNIF.	N.S.	N.S.	N.S.

FACTOR 4.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

Table IX PAIRED T-TEST FOR AFFECTIVE DISTURBANCE BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.76 E.V	.36 E.V.	.38 E.V.
SIGNIF.	N.S.	N.S.	N.S.

FACTOR 5.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

Table X PAIRED T-TEST FOR DENIAL BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.26 E.V.	1.6 E.V.	1.4 E.V.
SIGNIF.	N.S.	N.S.	N.S.

FACTOR 6.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

Table XI PAIRED T-TEST FOR IRRITABILITY BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	1.3 E.V.	.06 E.V.	1.19 E.V.
SIGNIF.	N.S.	N.S.	N.S.

FACTOR 7.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

The previous seven tables show that there were few statistically significant differences between the experimental groups. Table VII shows that there is a statistically significant difference between the control group and the other experimental groups with the variable psychological versus somatic focusing. The control group generally had the highest score, the non operative group the lowest. With this scale the lower scores indicate a degree of somatic focusing, patients with the lower scores are convinced that they have something wrong with them and they are in need of physical treatment to correct this.

7.2 RESULTS FROM THE BODY IMAGE QUESTIONNAIRE.

The body image scores by experimental group are presented in table XII.

This table shows that generally the control group had a better specific facial body image than either of the other two groups. The lower the score the greater is the satisfaction with body image. The abnormal score is the higher one.

Table XII SCORES FROM THE BODY IMAGE QUESTIONNAIRE BY EXPERIMENTAL GROUP.

	NON OPERATIVE	OPERATIVE	CONTROL
GBI	45.85 SD 7.62	46.82 SD 9.84	49.95 SD 10.52
OBI	26.92 SD 6.51	26.55 SD 6.07	22.82 SD 5.42

GBI = General body image
OBI = Dentofacial body image

Paired t-tests and statistical significance between the groups are presented in tables XIII and XIV.

Table XIII PAIRED T-TEST FOR GENERAL BODY IMAGE BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.49 E.V.	2.0 E.V.	1.37 E.V.
SIGNIF.	N.S.	< .05	N.S.

GENERAL BODY IMAGE.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

This table shows that there is a statistically significant difference between the non operated and control groups as far as general body image is concerned, the non operated group has the higher score.

Table XIV PAIRED T-TEST FOR DENTOFACIAL BODY IMAGE BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.26 E.V.	3.06 E.V.	2.9 E.V.
SIGNIF.	N.S.	< .01	< .01

DENTOFACIAL BODY IMAGE.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

This table shows that there is a statistically significant difference between the scores on orthognathic body image between the control group and both of the other experimental groups. The operative and the non operative groups had generally a higher score on this scale than the controls, the higher score is the abnormal score on this scale.

7.3 RESULTS FROM THE ANXIETY AND DEPRESSION SCALES.

The anxiety state and trait and depression scores are presented in table XV.

Table XV SCORES FROM THE ANXIETY AND DEPRESSION SCALES.

	NON OPERATED	OPERATIVE	CONTROL
SS	37.70 SD 9.03	38.17 SD 13.76	43.5 SD 10.38
ST	41.02 SD 8.41	39.62 SD 10.54	41.25 SD 11.61
Z	36.9 SD 8.35	36.67 SD 9.99	37.47 SD 9.45

SS = Spielberger anxiety state.
ST = Spielberger anxiety trait.
Z = Zung depression score.

This table shows that anxiety state is higher in the control group and lowest in the non operative group. Average scores for the operative group lie about mid way between.

Scores on the other two scales, Spielberger anxiety trait and Zung depression, show little variation between the experimental groups.

Tables XVI to XVIII show the results of paired t-tests between the experimental groups.

Table XVI PAIRED T-TEST FOR ANXIETY STATE BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.18 E.V.	2.67 E.V.	1.96 E.V.
SIGNIF.	N.S.	< .01	< .05

ANXIETY STATE.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

This table shows that there is statistically significant difference between the scores for anxiety state between the control group and the other experimental groups.

Table XVII PAIRED T-TEST FOR ANXIETY TRAIT BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.65 E.V.	.10 E.V.	.66 E.V.
SIGNIF.	N.S.	N.S.	N.S.

ANXIETY TRAIT.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

Table XVIII PAIRED T-TEST FOR DEPRESSION BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.11 E.V.	.29 E.V.	.37 E.V.
SIGNIF.	N.S.	N.S.	N.S.

DEPRESSION.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

No significant differences were found between the experimental groups for anxiety trait and depression.

7.4 RESULTS OF THE LIFE EVENTS SCALE.

Life events is presented in table XIX.

Table XIX LIFE EVENTS SCORES BY EXPERIMENTAL GROUP.

NON OPERATED	OPERATIVE	CONTROL
342.32 SD 323.09	333.32 SD 273.56	421.25 SD 413.94

The control group had the highest mean score, however, the differences were not statistically significant, as shown in table XX.

Table XX PAIRED T-TEST FOR LIFE EVENT BETWEEN EXPERIMENTAL GROUPS.

paired gps	I / II	I / III	II / III
D.O.F.	78	78	78
T-TEST	.13 E.V.	.95 E.V.	1.12 E.V.
SIGNIF.	N.S.	N.S.	N.S.

LIFE EVENTS.

E.V. Equal variation
U.V. Unequal variation

Experimental groups.
I : non operative group
II : operative group
III : control

7.5 STATISTICAL ANALYSIS OF RESULTS.

Using normative data provided with the various questionnaires (Pilowsky, 1983) or mean scores, groups were divided, thus giving a normal and an abnormal group. The groups and scores are presented in table XXI.

This table shows that each experimental group was divided according to scores on the individual variables as listed under item. For instance group A , variable was Factor 2 or disease conviction. The cut off score for "abnormality" was three, as indicated in the last two columns. The numbers that lie in each "normal" and "abnormal" group are presented.

Three other variables were grouped this way, and the same information is presented for these three variables in table XXII.

Table XXI PATIENT GROUPINGS AND NUMBERS FOR STATISTICAL ANALYSIS (1).

G	ITEM	NUMBERS IN GROUP						VALUE	
		I		II		III			
		1	2	1	2	1	2	1	2
A	TOT2	7	33	7	33	5	35	>2	<3
B	TOT3	10	30	12	28	4	36	<2	>1
C	SS	17	23	14	26	28	12	>39	<40
D	DF	1	39	1	39	0	40	>69	<70
E	ST	21	19	18	22	23	17	>39	<40
G	SS	6	34	7	33	9	31	>49	<50
H	ST	8	32	5	35	8	32	>49	<50
J	Z	3	37	4	36	3	37	>49	<50
L	LENT	21	19	22	18	24	16	>250	<251
W	WI	4	36	3	37	4	36	>7	<8
Z	ZZ	17	23	10	30	20	20	>39	<40

TOT2 = Disease Conviction,
TOT3 = Psychological versus somatic focusing,
SS = Speilberger Anxiety State,
ST = Speilberger Anxiety Trait,
Z = Zung Depression Score,
LENT = Life events.
Second factor analysis from the illness behaviour questionnaire also included.
WI = Whitley Index of Hypochondriasis,
DF = Discriminant Function.
I = non operative group.
II = operative group.
III = control group.

Table XXII PATIENT GROUPING AND NUMBERS FOR STATISTICAL ANALYSIS. (2)

G	ITEM	NUMBERS IN GROUP I 1	I 2	II 1	II 2	III 1	III 2	VALUE 1	VALUE 2
F	GBI	4	36	7	33	16	24	>54	<55
S	OBI	13	27	9	31	4	36	>29	<30
V	SEX	13	27	10	30	12	28	MALE	FEMALE

OBI = Dentofacial Body Image,
GBI = General Body Image.
I = non operative group.
II = operative group.
III = control group.

Sex, dentofacial body image and general body image those values displayed in table XXII, were cross correlated with every other group within this table, as well as those displayed in table XXI, to ascertain if there was any correlation between body image and psychological state.

The significant findings are listed on the following pages.

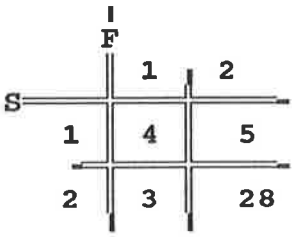
7.5.1. Operative group.

There was a significant correlation between scores on the body image questionnaires.

Table XXIII shows that those patients who scored highly on the orthognathic body image section of the body image questionnaire, that is had a poor orthognathic body image, also had a high score on the general body image section.

Those patients who had a satisfactory orthognathic body image also had a satisfactory general body image, very few patients were not consistent.

Table XXIII CROSS TABULATION GENERAL BODY IMAGE WITH DENTOFACIAL BODY IMAGE.



CHI-SQUARE .01

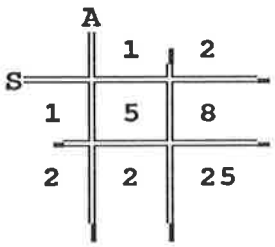
S1 Dentofacial body image score >29
S2 Dentofacial body image score <30

F1 General body image score >54
F2 General body image score <55

7.5.2. Non Operated group.

Table XXIV shows that there is a significant correlation between those patients who scored highly on the dentofacial body image section of the questionnaire, that is had a poor dentofacial body image and those patients who scored highly on the disease conviction scale of the illness behaviour questionnaire.

Table XXIV CROSS TABULATION DENTOFACIAL BODY IMAGE AND DISEASE CONVICTION.



CHI-SQUARE .01

S1 Dentofacial body image score >29
S2 Dentofacial body image score <30

A1 Disease conviction >2
A2 Disease conviction <3

7.5.3. Control group.

The control group did not reveal any significant correlations. Table XXII shows that none of the control group reported an unsatisfactory dentofacial body image.

7.6 POST OPERATIVE DATA.

Tables XXV to XXVIII presents the data collected from the operative group six months after their orthognathic surgery.

Table XXV PATIENT NUMBERS AT SIX MONTHS.

Number seen six months post operatively	36
Number who failed to attend	3
Number not yet six months post operative	1

Table XXVI SCORES ON THE ILLNESS BEHAVIOUR QUESTIONNAIRE SIX MONTHS FOLLOWING SURGERY.

FACTOR 1	2.11 SD 2.27
FACTOR 2	1.44 SD 1.25
FACTOR 3	1.94 SD 0.67
FACTOR 4	2.19 SD 1.57
FACTOR 5	1.47 SD 1.56
FACTOR 6	2.89 SD 1.58
FACTOR 7	2.25 SD 1.52

FACTOR 1 General hypochondriasis
FACTOR 2 Disease conviction
FACTOR 3 Psychological versus somatic focusing
FACTOR 4 Affective inhibition
FACTOR 5 Affective disturbance
FACTOR 6 Denial
FACTOR 7 Irritability

Table XXVII BODY IMAGE SCORES SIX MONTHS POST OPERATIVELY.

OBI	20.11 SD 5.4
GBI	44.83 SD 10.72

OBI Dentofacial body image.
GBI General body image

Table XXVIII ANXIETY, DEPRESSION AND LIFE EVENTS SCORES SIX MONTHS POST OPERATIVELY.

SS	35.33 SD 11.17
ST	38.97 SD 11.02
Z	36.83 SD 10.43

LENTS	429.67 SD 424.93

SS Spielberger anxiety state.
ST Spielberger anxiety trait.
Z Zung depression score.
LENTS Life events.

Comparison between the two sets of data from the operative group, and tests of statistical significance are presented in tables XXIX to XXXII.

Figure XXIX STATISTICAL COMPARISON OF ILLNESS BEHAVIOUR QUESTIONNAIRE SCORES PRE AND POST OPERATIVE.

VARIABLE	D.O.F.	T-TEST	SIGNIF.
FACTOR 1.	74 E.V.	.07	N.S.
FACTOR 2.	74 E.V.	.34	N.S.
FACTOR 3.	74 E.V.	.42	N.S.
FACTOR 4.	74 E.V.	1.34	N.S.
FACTOR 5.	74 E.V.	.14	N.S.
FACTOR 6.	74 E.V.	.90	N.S.
FACTOR 7.	74 E.V.	1.2	N.S.

E.V. Equal variation
U.V. Unequal variation

FACTOR 1 General hypochondriasis
FACTOR 2 Disease conviction
FACTOR 3 Psychological versus somatic focusing
FACTOR 4 Affective inhibition
FACTOR 5 Affective disturbance
FACTOR 6 Denial
FACTOR 7 Irritability

This table shows that there are no statistically significant differences between the psychological profiles, as measured with the illness behaviour questionnaire, following the surgical procedures.

Table XXX STATISTICAL COMPARISON OF BODY IMAGE SCORES PRE AND POST OPERATIVELY.

VARIABLE	D.O.F.	T-TEST	SIGNIF.
O.B.I.	74 E.V.	4.86	< .001
G.B.I.	74 E.V.	.84	N.S.

O.B.I. Dentofacial body image.
G.B.I. General body image.

E.V. Equal variation
U.V. Unequal variation

This shows that there was a significant lowering of the dentofacial body image score post operatively. Thus these patients had a better dentofacial image of themselves post operatively.

Table XXXI STATISTICAL COMPARISON FOR ANXIETY AND DEPRESSION PRE AND POST OPERATIVELY.

VARIABLE	D.O.F.	T-TEST	SIGNIF.
SS. TEST	74 E.V.	.98	N.S.
ST. TEST	74 E.V.	.26	N.S.
Z. TEST	74 E.V.	.07	N.S.

SS. TEST Spielberger anxiety state.
ST. TEST Spielberger anxiety trait.
Z. TEST Zung depression scale.

E.V. Equal variation
U.V. Unequal variation

Table XXXII STATISTICAL COMPARISON FOR LIFE EVENTS PRE AND POST OPERATIVELY.

VARIABLE	D.O.F.	T-TEST	SIGNIF.
LENTS.	74 E.V.	1.18	N.S.

LENTS Life events.

E.V. Equal variation
U.V. Unequal variation

Tables XXXI and XXXII show that there are no significant operative differences in anxiety, depression and life events in the operative group.

7.7 ADDITIONAL OPERATIVE DATA.

Additional data was collected for the operative and non operative groups.

The additional data for the operative group included diagnosis, treatment and post operative satisfaction both patient and operator scored. This additional data is presented in tables XXXIII to XXXIX.

All patients presented for correction of maxillary or mandibular deformities only, that is, there were no patients with cranial, orbital or solitary malar problems.

Table XXXIII PRE OPERATIVE TREATMENT.

	YES	NO
PRE OPERATIVE ORTHODONTICS	33	7

The following tables give an account of the surgical procedures.

Table XXXIV SURGICAL PROCEDURE PERFORMED.

PROCEDURE	NUMBER
MAXILLARY ONLY.	6
MANDIBULAR ONLY.	5
BIMAXILLARY.	29

Table XXXV CHIN PROCEDURES PERFORMED.

GENIOPLASTY	NUMBER
WITH MAXILLA.	1
WITH MANDIBLE.	1
WITH BIMAXILLARY.	3
ALONE.	1

Table XXXVI USE OF INTERMAXILLARY FIXATION.

	INTER MAXILLARY FIXATION USED.
YES	23
NO	17

The previous three tables show that the majority of patients were treated following a period of orthodontic treatment. As is the trend in the Adelaide clinic, over one half of the patients were treated surgically with bimaxillary procedures. Very few genioplasties were performed, we prefer to do these as a secondary procedure, if at all, at least six months following the initial surgery.

Table XXXVII gives an account of reported residual problems at the six month follow up stage.

Table XXXVII OPERATOR REPORTED, RESIDUAL PATIENT PROBLEMS.

RESIDUAL PROBLEM.	NUMBER
PARAESTHESIA	17
ANAESTHESIA	2
SCARS	2
PAIN	3
T.M.J. DYSFUNCTION.	
- MUSCULAR	4
- INTERNAL DERANGEMENT	4
MALOCCLUSION	4
DENTAL MORBIDITY	6

This shows that there are quite a large number of residual problems reported at the six month stage. Of the thirty operated patients, almost fifty percent reported residual paraesthesia. The reported incidence of the other, perhaps more serious residual problems, is less.

Tables XXXVIII and XXXIX give an account of patient satisfaction post operatively.

Table XXXVIII SELF REPORTED PATIENT SATISFACTION.

SATISFIED WITH	YES	SOMEWHAT	NO	NO DIFF.
APPEARANCE	29	5	1	1
FUNCTION	25	5	2	4

Table XXXIX OPERATOR REPORTED PATIENT SATISFACTION.

SATISFIED WITH	YES	MINOR COMP	NO
APPEARANCE	32	2	2
FUNCTION	32	3	1

This indicates that there is general patient satisfaction with the surgical procedures performed.

The results of statistical correlation between what the operator thought and what the patient reported are presented in table XL.

Table XL STATISTICAL CORRELATION BETWEEN OPERATOR AND PATIENT ASSESSMENT OF OUTCOME.

	APPEARANCE	FUNCTION
PERCENT CORRELATION	85 %	42 %
SIGNIFICANCE.	< .001	N.S.

As it can be seen from this table there is a high correlation between the patients reported satisfaction with appearance and the surgeons report of patient satisfaction. This is not the case in the reporting of satisfaction with function. The assessors tended to overrate the patients satisfaction with function.

Table XLI shows the reasons for the non operated group proceeding to surgery.

Table XLI REASONS FOR NOT PROCEEDING TO SURGERY.

Treated orthodontically only	9
Patient decided not to proceed	10
Patient did not return for treatment	12
Patient moved interstate	3
Patient sought treatment elsewhere	2
Surgery not indicated	4

VIII DISCUSSION.

8.1 INTRODUCTION.

The ability to pre operatively determine those patients who are not going to be satisfied with the results of dentofacial surgery will benefit both surgeons and patients. The surgeons, in that dissatisfied patients are difficult to handle, especially in the face of technically satisfactory surgery; the patients in that they will be afforded the benefit of thorough and extended counselling and goal rationalization. To this end this study had the following three aims:

1. To determine the motivation of people to have dentofacial surgery.

2. To determine the role of psychological variables in satisfaction of outcome.

3. To develop a questionnaire that may be used to screen dentofacial surgery patients, to pick those with psychological problems so that appropriate referral may be organised.

8.2 PATIENT GROUPS.

8.2.1. Patient sample

The patients for this study came from the Oral and Maxillofacial Surgery Unit, University of Adelaide. It was planned that every patient who was

referred for consideration of dentofacial surgery should be included in the study. The criteria for inclusion were:

1. The patient was being seen in the department for consideration of dentofacial surgery, between the years of 1987 and 1989.

2. Satisfactory completion of the questionnaire package as previously described as the Sambrook/Goss package.

Patients were excluded if:

1. They were unable to comprehend the English language.

2. Substantial portions of the questionnaire were not completed.

3. The questionnaire was not completed correctly, that is, if there were obvious errors such as "donkey voting".

A second group of patients was asked to complete the questionnaire package to act as a control group. Criteria for inclusion in this group were:

A. Patients referred for dento-alveolar surgery

B. Patients who did not have a dentofacial deformity.

Patients were excluded for the same reasons, 1 to 3, as described above as well as,

4. They had known psychiatric disease for which they were currently or had been treated for.

8.2.2 Sampling.

For a variety of reasons, not all of the patients for consideration of dentofacial surgery during the period 1987 to 1989 completed questionnaires.

The Oral and Maxillofacial Surgery department between the years of 1987 and 1989 had a high turnover of registrars, who worked up most of these patients. It was this group of ten to fifteen registrars that I had to rely on to give the patients questionnaires and ensure that they were all returned. During the study period of 1987 to 1989 the author was on rotation to Darwin for six months in 1987 and on an exchange programme to New Orleans for six months during 1988 and was not able to closely observe proceedings.

There were three reasons for less than one hundred percent sampling,

1. Questionnaires were not given to patients to complete, often because the registrar forgot. There were some registrars who were more forgetful than others and in fact a couple demonstrated antipathy to giving patients questionnaires on the perceived lack of objective benefit.
2. Patients did not return the questionnaire, and this was not followed up.
3. Patients refused to complete the questionnaire and be part of the study. Only one patient is in this category.

The sample consists of eighty patients who had been worked up to have dentofacial surgery. Forty of these patients went on to have the surgery, the remaining, for reasons shown in table XLI did not proceed. The proportion of patients not proceeding may seems high; however, this correlates well with other reported studies. Kiyak et al (1985) reported that ninety patients were assessed to have surgery and sixty six did not proceed.

The Oral and Maxillofacial Surgery unit would usually see all of the patients just after the orthodontic consultation but prior to active orthodontic treatment.

These patients are then given three options:

1. Proceeding with the outlined treatment plan, surgery and orthodontics.

2. Not proceeding at all.

3. Compromise treatment plan of orthodontics alone.

Many patients chose option two or three, probably out of fear of the surgery. Until recently dentofacial surgery was not considered to be a viable option, in all except grossly disproportionate cases. Many orthodontists have been wary about referring patients to have dentofacial surgery and even now think there is a small place for such surgery. After a combined treatment plan was formulated a number of patients were treated non surgically. Following work up and completion of the treatment plan patients are often placed onto a waiting list for orthodontic treatment. Patients are then assigned to an orthodontist , without regard to prior consultation, for treatment. The orthodontist thus, is usually the last person to see the patient prior to commencement of treatment. If the orthodontist is not surgically oriented, his feelings against surgery may be difficult to hide from patients, who then chose option three.

Finally there is a group of orthodontists who feel that surgery is not a treatment option and tell patients that the surgery is not required.

The control group consisted of forty patients, matched in age and sex with the operative group. This group completed the questionnaire package immediately prior to an operative procedure such as removal of third molars. This group was specifically chosen because of the similar age composition to the dentofacial surgery group.

GENDER.

The sex composition of the groups show that there is not a statistically significant sex difference between any of the experimental groups. Many more women than men seem to proceed with the surgery, the male to female ratio of the non operative group is approximately one to two, the ratio in the operative group is one to three. The reason for this may be, that women are the ones who are more interested to have their appearance changed (Edgerton 1961.). This will be addressed further, in the general discussion section.

8.2.3 METHODOLOGY.

The aims of the study were to assess psychological profiles. It was felt, therefore that a general screening questionnaire would be required. The illness behaviour questionnaire has been used with some success in the Oral and Maxillofacial Surgery unit for this very purpose. Speculand et al (1979) used it in a study of intractable facial pain, Goss et al (1985) used this questionnaire for assessment of patients presenting with temporomandibular pain at a pain clinic, and Gerke and Goss (1985) for a multifactorial analysis of temporomandibular joint dysfunction.

Other general screening questionnaires such as the one reported by Kiresuk and Sherman (1968) did not seem suitable to the needs of this study.

Anxiety and depression scales were added, to assess the influence of these parameters on the surgical satisfaction. The effects of certain life events on depression has been reported by Holmes and Rahe (1967); Paykel et al (1969); Paykel and Tanner (1976), and Rabkin and Struening (1976). The premise that patients with large numbers of certain life events would not make good surgical candidates was indirectly investigated by this study.

A body image scale was added to complete the package. Patients who can define precisely their problem, and state accurately what the problem is, are often more satisfied than those with poorly defined goals. Function is often stated to be one of the major emotive forces for dentofacial surgery: Ouellette (1979), Flanary et al (1985), and Kiyak et al (1981) all report that aesthetic considerations, and desire to improve aspects of body image, may be the major emotive force for these patients to have surgery.

8.3 PSYCHOLOGICAL PROFILES OF THE EXPERIMENTAL GROUPS.

The psychological profiles of the three groups as assessed with the illness behaviour questionnaire, show that these groups of patients do not have recognisable psychiatric disease, there are subgroups within these main groups that score higher on aspects of the questionnaire, see table XX1.

There was a significant difference between the average scores on the variable Factor 3, psychological versus somatic focusing, between all groups. This scale measures somatisation of patient concerns. Pilowsky and Spence (1983) defines this variable as:

"A high score indicates that the patient feels somehow responsible for (and in fact deserves) his illness, and perceives himself to be in need of psychiatric rather than medical treatment. A low score indicates a rejection of such attitudes and a tendency to somatise concerns."

The pre operative and operative groups scored lowly on this factor. Both of these groups had been worked up to have surgery to correct their dentofacial deformity. During the workup the registrar involved, consciously or unconsciously, would make the patients aware that they had deformities that required surgical management. It is thus not surprising that these groups score positively on this part of the questionnaire.

Comparison of the experimental groups, to data from one hundred and forty seven general medical practice patients, reported by Pilowsky and Spence (1983), an appendix 1 part c., shows that there is not a statistically significant difference between general medical practice patients, the control, operative and non operated groups. The operative and non operative groups scored on the lower end of the scale, the control group on the higher.

Average scores on the other tests used in the Sambrook/Goss package were in the normal range. As shown in tables XV and XVI, the control group scored highly on the anxiety state score, they were significantly higher than those from the operative group, and those in the non operated group. The reason for this is the nature of the control group. The controls, as previously stated, came from patients awaiting dentoalveolar surgery. These patients completed the questionnaire package immediately prior to their procedure, and thus were understandably apprehensive and anxious.

The anxiety trait and depression scores showed little variation between the groups.

The body image scores, as presented in table XII, show that although the average dentofacial body image scores of the two groups worked up for surgery are higher than the controls, the differences are not statistically significant. This means that the control group generally had a better perception of their dentofacial area than either of the other groups. One would expect this, as patients being worked up towards having dentofacial surgery would generally feel that they had a problem that warranted further investigation and treatment; this would be the primary reason that they sought treatment.

The groups were then divided as presented in tables XXI and XXII, to see if identifiable groups of patients with psychological or body image problems emerged.

Those people who scored on the higher or abnormal regions of the questionnaires were grouped, as presented in the above tables.

Table XXIII shows that the patients in the operative group showed a significant correlation between scores on the two scales of the body image questionnaire. If people scored highly on the dentofacial body image section, they generally scored highly on the general section also. The operative group was thus divided: those who had a satisfactory body image, and those that had multiple complaints, not only in the dentofacial region, but also generally with their bodies. It was postulated that these would be the people who would be dissatisfied with the

results of the surgery as they were the ones whose problems we were unable to resolve completely.

This proved to be statistically significant, those who were dissatisfied did tend to have the higher scores on the body image scales, especially the dentofacial body image scale. A small group of patients who reported they were not satisfied with the results of the surgery were the same ones who scored highly on the dentofacial body image questionnaire. The three patients who reported that they were not satisfied scored at least a four on all eight items that comprise the dentofacial body image section. Using two by two tables, there was a statistically significant difference between the group who were dissatisfied, and those who were satisfied, with respect to body image.

Two other variables that proved statistically significant when correlated in the groups was factor two, disease conviction and dentofacial body image in the non operated group.(Table XXIV). With disease conviction the abnormal score is the high one, over three; the abnormal dentofacial body image score is also the high one. This study found that most patients had a satisfactory body image together with a normal disease conviction. However, in this experimental group, those who had a poor dentofacial body image also had an abnormal score on the disease conviction scale. The reason for this is that the patients who score highly on the dentofacial body image section, are the ones with abnormal psychological profiles. Even if only minor deformity is present, these people are convinced that they have a major deformity. No amount of reassurance from health care workers can allay their fears. It is this group of patients who are dissatisfied with the results of the surgery; this is probably due

to the fact that the surgery does not correct their perceived deformities.

8.4 OPERATIVE CHANGES IN PSYCHOLOGICAL PROFILES.

The only factor that changed significantly was dentofacial body image. There was a mean reduction in this score post operatively of 5.67. Considering that some of the patients, the ones who were dissatisfied, did not change their body image score, this means that there was at least a one point shift in body image. The patients who disliked only part of their dentofacial area and wanted some change in specific areas were generally pleased with the result. Patients who reported most change in dentofacial body image were the satisfied patients, those who reported no change in their dentofacial body image were those who were not satisfied.

Post operative reporting was done by two examiners, similar criteria and a standardised format was used by both examiners. There was not a significant difference in the reporting of residual complications between the two examiners.

8.4.1 LIE SCORES.

Anxiety trait and depression scores can be used as lie scores, as these scores tend to be fairly consistent on test retest trials.

In this study there was an eighty seven percent correlation between the two groups of anxiety trait scores and an eighty nine percent correlation on the

depression scores. Other individual questions were randomly picked from the life events section,

Question 414 asks list the number of times that you have lost a spouse by death. This correlated on the second questionnaire 86 % significance less than .001.

Question 424 asks list the number of times that you have been married, and correlates on the second questionnaire significantly.

8.5 GENERAL DISCUSSION.

8.5.1 MOTIVATION FOR SURGERY.

Patients seek dentofacial surgery for a number of reasons:

1. They are seeking to improve their facial aesthetics.
2. They are seeking to improve masticatory function.
3. Combination of the above two factors.
4. They have been professionally advised that surgery is required, even though they do not perceive themselves to have a problem. This is usually on the basis that they have a malocclusions thought to be implicated in damage to dental health or temporomandibular function later in life.

Kiyak(1981) discusses the motives that drive people to have dentofacial surgery, and comes to the same conclusions as stated above. Patients may be offered surgery to improve aesthetics, improve masticatory function or both. They are more likely to proceed with the surgery if they perceive aesthetics are to be improved.

Looking at the body image section of the initial questionnaire package given to the operative group reveals that the range was 14 to 40, with the average being 26.55 (see table XII). This means that most patients scored an average of three or more on every question; put another way it means that apart from one patient, all others considered that they had a dentofacial part that they would like changed. The motive for surgery in the great majority of this operative sample was to improve aesthetics.

8.5.2 COMPARISON, DENTOFACIAL SURGERY AND COSMETIC SURGERY.

The psychological profiles of cosmetic surgery patients were presented in chapter three.

Dentofacial surgery patients do not seem to have the same psychological profiles as patients undergoing cosmetic surgery, although there are elements of similarity. The literature on the psychological profiles of cosmetic surgery patients indicates that this group on the whole suffers from recognisable psychiatric disease (Edgerton, 1961, Reich, 1982). Literature discussing the profiles of dentofacial surgery patients indicates that this patient population on the whole is generally free of such disease. Examination of the results of this study seems to verify the literature on dentofacial surgery patients. The groups reported in this study are free of recognisable psychiatric disease, although some do lie on the ends of the "normal" scale.

The reasons for the differences between the dentofacial and cosmetic surgery

patients may be that the type of surgery is different: dentofacial procedures unlike purely cosmetic procedures attempt to correct a patient reported functional component, that is, the person reports masticatory difficulty or temporomandibular joint symptoms, often in conjunction with aesthetic complaints. Although the aesthetic component is played down it still may be the major emotive force for these people to have surgery, the functional component legitimises it. These people are thus not having cosmetic facial surgery, they are having surgery to correct a malocclusion. Bell et al (1985) reports on this theme also and reports that patients may be offered surgery to correct orofacial function, correct a dentofacial cosmetic deformity or both; they are more likely to accept the decision to undergo the surgery if they perceive aesthetics are going to be improved. Kiyak et al (1986) takes this further in a later report and relates to post operative satisfaction, to perceived aesthetic improvement in facial features, patients' satisfaction being higher regardless of any residual functional problems.

This is not to say, however, that there is not a group within the dentofacial surgery population that should really be classified with the cosmetic surgery population. In this study this group would include those with high scores on the body image section, the same ones who were not happy with any of their facial appearance, and those who remained unsatisfied.

8.5.3 COMPARISON WITH PATIENTS AWAITING CORONARY ARTERY BYPASS GRAFTING AND RECONSTRUCTION FOLLOWING MASTECTOMY.

Dentofacial surgical patients do not have similar psychological profiles to the other surgical patients reviewed. The other surgical patients, who are faced with life threatening illnesses, who really have little choice as to whether the surgical procedure will proceed, have denial, rage, anxiety and other psychological aspects of the grieving process within their psychological profiles. Dentofacial surgery is a purely elective procedure. The psychological profile of the dentofacial surgery patient population does not therefore have the same psychological overtones to the elective cosmetic surgery patient, nor does it have the same profile as the non elective or life saving surgical patient. There may be other surgical populations to whom the dentofacial surgery population would be comparable, however there is not a great deal of literature in this area.

8.5.4 COMPARISON WITH THE LITERATURE FOR DENTOFACIAL SURGERY PATIENTS.

The data from this study agrees with the reports in the literature of other dentofacial patient populations.

The Adelaide patient population was essentially free of major psychiatric disease. Fifty percent of patients offered dentofacial surgery actually proceeded with it, and this correlates well with Kiyak et al (1985).

The sex composition of the Adelaide operative sample was approximately seventy percent female and thirty percent male. This correlates well with other reported studies in this area, Kiyak et al (1984) reported sixty five percent females in her two year follow up, forty eight females and twenty six males, Ouellette (1978, 1979) reported seventy seven percent female in his study. This study has an operative group consisting of seventy seven percent females. Flanary et al (1985) reported sixty six females to twenty four males, Hutton (1967) reported twenty one females and eleven males and Auerbach et al (1984) had twenty four females and six males

Flanary et al (1985) reported that post operative "surprises" seemed to be one of the leading factors in dissatisfaction. The results of this study do not support this report. The number of dissatisfied patients was small, however there was not a correlation with postoperative complications either individually or collectively. This may be a chance finding due to the low numbers and the report of Flanary et al (1985) could be supported if numbers were larger. Looking at the thirteen conclusions reported by Flanary et al (1985):

I. Motivations and concerns.

1. Roughly one half of the patients presented with this treatment option will demonstrate initial reticence, especially those whose motivation is functional rather than aesthetic.

That was confirmed by this study, approximately fifty percent of patients after

consultation proceeded with the surgery.

2. Patients with an appearance rationale for surgery have less difficulty adjusting to their appearance change than do those with strong functional motives.

That finding was not specifically looked at by this study, however those patients with the worst dentofacial body image were generally those who were not satisfied. Those patients who had small numbers of specific aesthetic concerns were the ones who were satisfied with the outcome.

3. Persons are more likely to take a risk to improve their appearance than to improve dental function.

That statement is supported by the results of this study. All operative patients reported aesthetic concerns and those concerns generally improved post operatively.

4. Older patients will demonstrate more concern about surgical risks than will younger patients.

Age was not used as a variable for this study, mainly because most were teenagers or young adults, very few were over thirty five.

II. Presurgical preparation.

5. More females will desire to speak with a patient who has undergone a similar procedure to their planned procedure.

In general more females than males were interested in this type of surgery.

6. Those patients who do not receive adequate explanation are more likely to be emotionally unprepared.

That was not specifically looked into by this study, however there were a number of patients who were operated on without adequate preparation who had a number of problems with the post operative course, and in coming to terms with the result.

7. Post operative "surprises" seem to be one of the leading factors in patients dissatisfaction with surgery.

That finding is not supported by this study. See the initial part of this discussion. Page 110.

III. Post surgical outcome.

8. Surgical goal fulfilment does not guarantee that the patient would re-elect to undergo the treatment.

That statement is supported by the results of this study. The majority of patients reported better dentofacial body image, some of these patients would recommend surgery for a close friend or relative, and some would not. There was not a significant correlation between satisfaction and whether the patient would recommend surgery for someone with the same problem

9. Patients tend to forget about the degree of post operative pain with time.

10. Two jaw procedures lead to significantly more pain complaints than single jaw procedures.

11. Maxillary procedures precipitate less severe pain complaints than mandibular procedures.

12. Anterior maxillary osteotomies provoke reports of minimal pain.

13. Maxillary osteotomies precipitate more initial complaints of breathing difficulty and sinus problems.

Pain and post operative discomfort was not specifically studied, therefore, points nine to thirteen remain unproven for this patient population.

Peterson and Topazian (1974, 1976) divides his patient population into three groups:

1. Highly positive reactors,

2. Moderately positive reactors, or neutral reactors, and

3. Negative reactors.

This way of assessing and categorising patients is very simple and to the point. On the basis of this study, the patient sample could be divided as above. Those who were not satisfied with the results of the surgery could be placed in category three, on the basis of their psychological profiles, retrospectively.

Prospectively using the body image section, the illness behaviour questionnaire and clinical assessment of motivation, patients could be assigned to one of the above categories. Those patients who were well motivated, who did not score abnormally on the illness behaviour questionnaire, for instance, had a high score on psychological versus somatic focusing, and had a good dentofacial body image score perhaps scoring poorly on only one or two items would lie in category one, highly positive reactors.

Those patients having a poorer overall dentofacial body image, but still scoring normally on the illness behaviour questionnaire, but less motivated, would lie in category two, the neutral reactors. These patients would need a full explanation and assurance of the effects of the surgery.

Those patients who score very poorly on all aspects of the body image questionnaire and had a number of abnormal features on the illness behaviour questionnaire would be categorised in section three, negative reactors. These patients would need to have realistic goals prior to surgical intervention and may need psychological or psychiatric treatment or assessment before surgery.

CONCLUSIONS.

The following conclusions were reached.

1.

The dentofacial surgery patient population studied was free of major psychiatric disease.

2.

Psychological profiles of patients as assessed by the illness behaviour, anxiety, depression and life events questionnaires, pre-operatively, could not be used to prognosticate satisfaction of outcome.

3.

BODY IMAGE.

(a) Satisfaction of outcome was statistically significantly related to pre operative body image values.

(b) Patients with poor overall body image generally were dissatisfied with the outcome.

(c) Patients with an initially poor body image did not improve this post-operatively.

(d) Patients with the poorest dentofacial body image were generally the dissatisfied ones

(e) Patients who had the poorest dentofacial body image also scored positively on the disease conviction scale of the illness behaviour questionnaire.

3. Post operative residual complications were not associated with post operative dissatisfaction.

4. Patients need thorough and adequate pre-operative preparation and counselling. Written information as well as interview seems the best way of providing this.

5. This questionnaire package can not be used to impute formal psychiatric diagnosis, nor can it be used alone to deny surgery. It can, however, be used to indicate, along with clinical judgement those patients who require further counselling and goal rationalisation.

6. The body image scale in conjunction with the illness behaviour questionnaire could be used as a rapid screening psychological questionnaire for patients undergoing dentofacial surgery. It was when a patient had both a poor body image and a high disease conviction score that post operative dissatisfaction was evident.

The recommendation for the questionnaire package is presented in appendix 8.

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APPENDIX 1. PART A.

The illness behaviour questionnaire.

On the following pages you will find a number of questions about your ...lth and how it affects you. For the purpose of our survey it is important that ...complete every question even though some of them may not be directly applicable ...you.

I.B.Q.

Here are some questions about you and your illness. CIRCLE either YES or NO indicate your answer to each question.

		For Office use
Do you worry a lot about your health?	YES/NO	( )
Do you think there is something seriously wrong with your body?	YES/NO	( )
Does your illness interfere with your life a great deal?	YES/NO	( )
Are you easy to get on with when you are ill?	YES/NO	( )
Does your family have a history of illness?	YES/NO	( )
Do you think you are more liable to illness than other people?	YES/NO	( )
If the doctor told you that he could find nothing wrong with you, would you believe him?	YES/NO	( )
Is it easy for you to forget about yourself and think about all sorts of other things?	YES/NO	( )
If you feel ill and someone tells you that you are looking better, do you become annoyed?	YES/NO	( )
Do you find that you are often aware of various things happening in your body?	YES/NO	( )
Do you ever think of your illness as a punishment for something you have done wrong in the past?	YES/NO	( )
Do you have trouble with your nerves?	YES/NO	( )
If you feel ill, or worried, can you be easily cheered up by the doctor?	YES/NO	( )
Do you think that other people realise what its like to be sick?	YES/NO	( )
Does it upset you to talk to the doctor about your illness?	YES/NO	( )
Are you bothered by many pains and aches?	YES/NO	( )
Does your illness affect the way you get on with your family or friends a great deal?	YES/NO	( )
Do you find that you get anxious easily?	YES/NO	( )
Do you know anybody who has had the same illness as you?	YES/NO	( )
Are you more sensitive to pain than other people?	YES/NO	( )
Are you afraid of illness?	YES/NO	( )
Can you express your personal feelings easily to other people?	YES/NO	( )
Do people feel sorry for you when you are ill?	YES/NO	( )
Do you think that you worry about your health more than most people?	YES/NO	( )
Do you find that your illness affects your sexual relations?	YES/NO	( )
Do you experience a lot of pain with your illness?	YES/NO	( )
Except for your illness, do you have any problems in your life?	YES/NO	( )
Do you care whether or not people realise you are sick?	YES/NO	( )

			For office use
29.	Do you find that you get jealous of other people's good health?	YES/NO	( )
30.	Do you ever have silly thoughts about your health which you can't get out of your mind, no matter how hard you try?	YES/NO	( )
31.	Do you have any financial problems?	YES/NO	( )
32.	Are you upset by the way people take your illness?	YES/NO	( )
33.	Is it hard for you to believe the doctor when he tells you there is nothing for you to worry about?	YES/NO	( )
34.	Do you often worry about the possibility that you have a serious illness?	YES/NO	( )
35.	Are you sleeping well?	YES/NO	( )
36.	When you are angry, do you tend to bottle up your feelings?	YES/NO	( )
37.	Do you often think that you might suddenly fall ill?	YES/NO	( )
38.	If a disease is brought to your attention (through radio, television, newspaper or someone you know) do you worry about getting it yourself?	YES/NO	( )
39.	Do you get the feeling that people are not taking your illness seriously enough?	YES/NO	( )
40.	Are you upset by the appearance of your face or body?	YES/NO	( )
41.	Do you find that you are bothered by many different symptoms?	YES/NO	( )
42.	Do your frequently try to explain to others how you are feeling?	YES/NO	( )
43.	Do you have any family problems?	YES/NO	( )
44.	Do you think there is something the matter with your mind?	YES/NO	( )
45.	Are you eating well?	YES/NO	( )
46.	Is your bad health the biggest difficulty of your life?	YES/NO	( )
47.	Do you find that you get sad easily?	YES/NO	( )
48.	Do you worry or fuss over small details that seem unimportant to others?	YES/NO	( )
49.	Are you always a co-operative patient?	YES/NO	( )
50.	Do you often have the symptoms of a very serious disease?	YES/NO	( )
51.	Do you find that you get angry easily?	YES/NO	( )
52.	Do you have any work problems?	YES/NO	( )
53.	Do you prefer to keep your feelings to yourself?	YES/NO	( )
54.	Do you often find that you get depressed?	YES/NO	( )
55.	Would all your worries be over if you were physically healthy?	YES/NO	( )
56.	Are you more irritable towards other people?	YES/NO	( )
57.	Do you think that your symptoms may be caused by worry?	YES/NO	( )
58.	Is it easy for you to let people know when you are cross with them?	YES/NO	( )
59.	Is it hard for you to relax?	YES/NO	( )
60.	Do you have personal worries which are not caused by physical illness?	YES/NO	( )
61.	Do you often find that you lose patience with other people?	YES/NO	( )
62.	Is it hard for you to show people your personal feelings?	YES/NO	( )
63.	Are you less than 40 years of age?	YES/NO	( )

APPENDIX 1. PART B.

Scoring the illness behaviour questionnaire.

Illness Behaviour Score Sheet (note that not all IBQ items contribute to scale scores).

NAME:..... AGE:..... STATUS:.....

Question No.	Scored Response						
	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Scale 7
2		Yes					
3		Yes					
4							No
7		No					
9	Yes						
10		Yes					
11			Yes				
12					Yes		
16			No				
17							Yes
18					Yes		
20	Yes						
21	Yes						
22				No			
24	Yes						
27						No	
29	Yes						
30	Yes						
31						No	
32	Yes						
35		No					
36				Yes			
37	Yes						
38	Yes						
41		Yes					
43						No	
44			Yes				
46			No				
47					Yes		
51							Yes
AGE							<40

The following questions (53-62) have been added to the original Illness Behaviour Questionnaire in order to consolidate the last 5 scales.

Question No.	Scored Response						
	Scale 1	Scale 2	Scale 3	Scale 4	Scale 5	Scale 6	Scale 7
53				Yes			
54					Yes		
55						Yes	
56							Yes
57			Yes				
58				No			
59					Yes		
60						No	
61							Yes
62				Yes			
Final Profile							

Whiteley Index of Hypochondriasis

	Question No.													
	1	2	8	9	10	16	21	24	33	34	38	39	41	50
Scored Response:	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Whiteley Index Score:

APPENDIX 1. PART C.

Normative data for the illness behaviour questionnaire.

NORMATIVE DATA - I

Table 1. Scale 1. General Hypochondriasis - Means for each patient population.

		Mean	Std Dev	N
Adelaide Pain Clinic:	Total	1.79	2.19	245
	Males	1.88	2.25	116
	Females	1.71	2.13	129
Adelaide General Practice	Total	1.42	1.84	153
	Males	1.01	1.31	55
	Females	1.69	2.07	95
Adelaide Psychiatric	Total	3.16	2.34	250
	Males	3.05	2.40	101
	Females	3.21	2.30	149
Seattle Pain Clinic:	Total	1.12	1.40	99
	Males	1.03	1.21	26
	Females	1.15	1.47	73
Seattle General Practice	Total	1.14	1.23	77
	Males	1.11	1.45	17
	Females	1.15	1.17	60
Coronary artery by-pass	Males only	1.17	1.39	122
Canberra cardiac patients (Males + Females)				
	Myocardial Infarction	1.26	1.47	50
	Suspected M.I.	1.10	1.33	20

Table 2. Scale 2. Disease Conviction - Means for each patient population

		Mean	Std Dev	N
Adelaide Pain Clinic :	Total	3.72	1.53	245
	Males	3.72	1.56	116
	Females	3.72	1.52	129
Adelaide General Practice :	Total	1.58	1.37	153
	Males	1.54	1.46	55
	Females	1.64	1.32	95
Adelaide Psychiatric :	Total	3.22	1.60	250
	Males	3.36	1.67	101
	Females	3.12	1.55	149
Seattle Pain Clinic :	Total	3.00	1.71	99
	Males	2.73	2.12	26
	Females	3.09	1.54	73
Seattle General Practice :	Total	1.54	1.25	77
	Males	1.52	1.37	17
	Females	1.55	1.22	60
Coronary artery by-pass :	Males only	2.54	1.43	122
Canberra cardiac patients (Males + Females)				
	Myocardial Infarction	1.54	1.52	50
	Suspected M.I.	1.30	1.95	20

Table 3. Scale 3. Psychological vs Somatic Concern - Means for each patient population

		Mean	Std Dev	N
Adelaide Pain Clinic :	Total	.62	.97	245
	Males	.54	.92	116
	Females	.68	1.01	129
Adelaide General Practice :	Total	2.01	.80	153
	Males	1.89	.80	55
	Females	2.07	.80	95
Adelaide Psychiatric :	Total	2.40	1.21	250
	Males	2.26	1.21	101
	Females	2.48	1.20	149
Seattle Pain Clinic :	Total	.72	.94	99
	Males	.92	1.01	26
	Females	.65	.91	73
Seattle General Practice :	Total	1.93	.99	77
	Males	2.11	1.05	17
	Females	1.88	.97	60
Coronary artery by pass :	Males only	1.35	.94	122
Canberra cardiac patients (Males + Females)				
	Myocardial Infarction	1.88	.98	50
	Suspected M.I.	1.95	.89	20

Table 4. Scale 4. Affective Inhibition - Means for each patient population

		Mean	Std Dev	N
Adelaide Pain Clinic :	Total	2.51	1.55	245
	Males	2.42	1.53	116
	Females	2.58	1.57	129
Adelaide General Practice :	Total	2.46	1.57	153
	Males	2.41	1.42	55
	Females	2.48	1.66	95
Adelaide Psychiatric :	Total	3.22	1.44	250
	Males	3.20	1.46	101
	Females	3.24	1.44	149
Seattle Pain Clinic :	Total	2.01	1.52	99
	Males	2.07	1.38	26
	Females	1.98	1.58	73
Seattle General Practice :	Total	2.00	1.53	77
	Males	2.47	1.46	17
	Females	1.86	1.53	60
Coronary artery by pass :	Males only	2.56	1.56	122
Canberra cardiac patients (Males + Females)				
	Myocardial Infarction	2.44	1.51	50
	Suspected M.I.	2.70	1.87	20

Table 5. Scale 5. Dysphoria - Means for each patient population

		Mean	Std Dev	N
Adelaide Pain Clinic :	Total	2.61	1.71	245
	Males	2.57	1.68	116
	Females	2.65	1.74	129
Adelaide General Practice :	Total	2.33	1.64	153
	Males	1.72	1.47	55
	Females	2.71	1.63	95
Adelaide Psychiatric :	Total	3.97	1.41	250
	Males	3.92	1.35	101
	Females	4.00	1.46	149
Seattle Pain Clinic :	Total	2.30	1.74	99
	Males	2.00	1.44	26
	Females	2.41	1.83	73
Seattle General Practice :	Total	1.93	1.61	77
	Males	1.29	1.35	17
	Females	2.11	1.64	60
Coronary artery by pass :	Males only	2.56	1.69	122
Canberra cardiac patients (Males + Females)				
	Myocardial Infarction	2.12	1.49	50
	Suspected M.I.	2.05	1.93	20

NORMATIVE DATA - I

Table 6. Scale 6. Denial - Means for each patient population

		Mean	Std Dev	N
Adelaide Pain Clinic :	Total	3.88	1.51	245
	Males	3.87	1.48	116
	Females	3.89	1.55	129
Adelaide General Practice :	Total	2.91	1.73	153
	Males	3.32	1.57	55
	Females	2.64	1.78	95
Adelaide Psychiatric :	Total	2.43	1.67	250
	Males	2.50	1.65	101
	Females	2.38	1.68	149
Seattle Pain Clinic :	Total	3.07	1.44	99
	Males	2.92	1.44	26
	Females	3.12	1.44	73
Seattle General Practice :	Total	1.98	1.51	77
	Males	2.35	1.57	17
	Females	1.88	1.49	60
Coronary artery by pass :	Males only	4.02	1.44	122
Canberra cardiac patients (Males + Females)				
	Myocardial Infarction	3.38	1.51	50
	Suspected M.I.	3.10	1.41	20

Table 7. Scale 7. Irritability - Means for each patient population

		Mean	Std Dev	N
Adelaide Pain Clinic :	Total	3.11	1.64	245
	Males	3.44	1.58	116
	Females	2.80	1.64	129
Adelaide General Practice :	Total	2.81	1.60	153
	Males	2.50	1.47	55
	Females	2.96	1.65	95
Adelaide Psychiatric :	Total	3.70	1.70	250
	Males	3.91	1.67	101
	Females	3.55	1.72	149
Seattle Pain Clinic :	Total	2.05	1.55	99
	Males	1.73	1.18	26
	Females	2.16	1.65	73
Seattle General Practice :	Total	1.55	1.19	77
	Males	1.58	1.00	17
	Females	1.55	1.25	60
Coronary artery by pass :	Males only	2.85	1.57	122
Canberra cardiac patients (Males + Females)				
	Myocardial Infarction	1.58	1.53	50
	Suspected M.I.	1.75	1.02	20

NORMATIVE DATA - I

Table 8. Means for two second-order factors

Population		N	Factor 1 Mean (SD)	Factor 2 Mean (SD)
Adelaide pain	Total	245	7.5 (4.3)	8.1 (2.0)
	Males	116	7.9 (4.4)	8.1 (2.0)
	Females	129	7.1 (4.2)	8.0 (1.9)
Adelaide general practice	Total	153	6.5 (3.8)	4.5 (1.6)
	Males	55	5.2 (3.2)	4.6 (1.6)
	Females	95	7.3 (4.0)	4.5 (1.6)
Adelaide psychiatric	Total	250	10.8 (4.2)	5.8 (2.2)
	Males	101	10.8 (4.2)	6.0 (2.3)
	Females	149	10.7 (4.1)	5.6 (2.1)
Adelaide coronary artery by-pass	Males only	122	6.5 (3.3)	6.1 (1.9)

Table 9 : Normative Data II.

Score frequencies on each scale are shown for the four criterion groups:

(i) Pain Clinic patients (N=231)
(ii) General Practice patients (N=147)
(iii) General Hospital patients (from Rheumatology, Cardiology, Hypertension Units) (N=217)
(iv) Psychiatric patients (Admitted to General Hospital Psychiatric Ward) (N=540)

The reason for the difference in sample sizes across Tables 1 and 9 is that Tables 1-8 were compiled from data available at an earlier stage (1981), and Table 9 was compiled in 1983 using new data from the "Pain Clinic" and "Psychiatric" populations, with the original "Coronary Artery By-pass" group incorporated in the general "Hospital" group. The "General Practice" is the same as the "Adelaide General Practice" sample except for five missing cases.

----GENERAL HYPOCHONDRIASIS----------

PAIN CLINIC N= 231 MEAN= 1.94 S.D.= 2.1

	0	1	2	3	4	5	6	7	8	9
F	71	56	33	25	15	15	4	6	4	2
%	30.7	24.2	14.3	10.8	6.5	6.5	1.7	2.6	1.7	0.9
CUM%	30.7	55.0	69.3	80.1	86.6	93.1	94.8	97.4	99.1	100

GENERAL PRACTICE N= 147 MEAN= 1.44 S.D.= 1.84

	0	1	2	3	4	5	6	7	8	9
F	65	30	14	19	11	2	2	2	1	1
%	44.2	20.4	9.5	12.9	7.5	1.4	1.4	1.4	0.7	0.7
CUM%	44.2	64.6	74.1	87.1	94.6	95.9	97.3	98.6	99.3	100

HOSPITAL N= 217 MEAN= 1.38 S.D.= 1.53

	0	1	2	3	4	5	6	7	8	9
F	80	58	38	15	15	6	5	0	0	0
%	36.9	26.7	17.5	6.9	6.9	2.8	2.3	0.0	0.0	0.0
CUM%	36.9	63.6	81.1	88.0	94.9	97.7	100	100	100	100

PSYCHIATRIC N= 540 MEAN= 2.69 S.D.= 2.31

	0	1	2	3	4	5	6	7	8	9
F	108	97	92	66	59	44	27	29	11	7
%	20.0	18.0	17.0	12.2	10.9	8.1	5.0	5.4	2.0	1.3
CUM%	20.0	38.0	55.0	67.2	78.1	86.3	91.3	96.7	98.7	100

----DISEASE CONVICTION ----------

PAIN CLINIC N= 231 MEAN= 3.43 S.D.= 1.62

	0	1	2	3	4	5	6
F	12	17	35	55	44	44	24
%	5.2	7.4	15.2	23.8	19.0	19.0	10.4
CUM%	5.2	12.6	27.7	51.5	70.6	89.6	100

GENERAL PRACTICE N= 147 MEAN= 1.59 S.D.= 1.36

	0	1	2	3	4	5	6
F	32	51	32	18	8	4	2
%	21.8	34.7	21.8	12.2	5.4	2.7	1.4
CUM%	21.8	56.5	78.2	90.5	95.9	98.6	100

HOSPITAL N= 217 MEAN= 2.61 S.D.= 1.56

	0	1	2	3	4	5	6
F	24	31	45	54	38	18	7
%	11.1	14.3	20.7	24.9	17.5	8.3	3.2
CUM%	11.1	25.3	46.1	71.0	88.5	96.8	100

PSYCHIATRIC N= 540 MEAN= 3.02 S.D.= 1.69

	0	1	2	3	4	5	6
F	34	79	115	91	98	81	42
%	6.3	14.6	21.3	16.9	18.1	15.0	7.8
CUM%	6.3	20.9	42.2	59.1	77.2	92.2	100

----PSYCHOLOGICAL/SOMATIC----------

PAIN CLINIC N= 231 MEAN= .78 S.D.= 1.05

	0	1	2	3	4	5
F	124	57	36	8	3	3
%	53.7	24.7	15.6	3.5	1.3	1.3
CUM%	53.7	78.4	93.9	97.4	98.7	100

GENERAL PRACTICE N= 147 MEAN= 1.99 S.D.= .84

	0	1	2	3	4	5
F	8	25	78	33	3	0
%	5.4	17.0	53.1	22.4	2.0	0.0
CUM%	5.4	22.4	75.5	98.0	100	100

HOSPITAL N= 217 MEAN= 1.22 S.D.= .9

	0	1	2	3	4	5
F	49	89	62	16	1	0
%	22.6	41.0	28.6	7.4	0.5	0.0
CUM%	22.6	63.6	92.2	99.5	100	100

PSYCHIATRIC N= 540 MEAN= 2.15 S.D.= 1.26

	0	1	2	3	4	5
F	66	98	151	150	63	12
%	12.2	18.1	28.0	27.8	11.7	2.2
CUM%	12.2	30.4	58.3	86.1	97.8	100

----AFFECTIVE INHIBITION ----------

PAIN CLINIC N= 231 MEAN= 2.26 S.D.= 1.69

	0	1	2	3	4	5
F	45	50	31	38	40	27
%	19.5	21.6	13.4	16.5	17.3	11.7
CUM%	19.5	41.1	54.5	71.0	88.3	100

GENERAL PRACTICE N= 147 MEAN= 2.46 S.D.= 1.6

	0	1	2	3	4	5
F	19	28	30	26	24	20
%	12.9	19.0	20.4	17.7	16.3	13.6
CUM%	12.9	32.0	52.4	70.1	86.4	100

HOSPITAL N= 217 MEAN= 2.56 S.D.= 1.54

	0	1	2	3	4	5
F	23	40	40	47	41	26
%	10.6	18.4	18.4	21.7	18.9	12.0
CUM%	10.6	29.0	47.5	69.1	88.0	100

PSYCHIATRIC N= 540 MEAN= 2.98 S.D.= 1.52

	0	1	2	3	4	5
F	45	58	87	121	131	98
%	8.3	10.7	16.1	22.4	24.3	18.1
CUM%	8.3	19.1	35.2	57.6	81.9	100

----AFFECTIVE DISTURBANCE----------

PAIN CLINIC N= 231 MEAN= 2.57 S.D.= 1.73

	0	1	2	3	4	5
F	42	28	40	40	40	41
%	18.2	12.1	17.3	17.3	17.3	17.7
CUM%	18.2	30.3	47.6	64.9	82.3	100

GENERAL PRACTICE N= 147 MEAN= 2.31 S.D.= 1.62

	0	1	2	3	4	5
F	24	29	28	27	21	18
%	16.3	19.7	19.0	18.4	14.3	12.2
CUM%	16.3	36.1	55.1	73.5	87.8	100

HOSPITAL N= 217 MEAN= 2.44 S.D.= 1.73

	0	1	2	3	4	5
F	38	37	43	26	36	37
%	17.5	17.1	19.8	12.0	16.6	17.1
CUM%	17.5	34.6	54.4	66.4	82.9	100

PSYCHIATRIC N= 540 MEAN= 3.56 S.D.= 1.64

	0	1	2	3	4	5
F	49	30	49	79	108	225
%	9.1	5.6	9.1	14.6	20.0	41.7
CUM%	9.1	14.6	23.7	38.3	58.3	100

----DENIAL ----------

PAIN CLINIC N= 231 MEAN= 3.64 S.D.= 1.58

	0	1	2	3	4	5
F	10	23	27	24	44	103
%	4.3	10.0	11.7	10.4	19.0	44.6
CUM%	4.3	14.3	26.0	36.4	55.4	100

GENERAL PRACTICE N= 147 MEAN= 2.93 S.D.= 1.74

	0	1	2	3	4	5
F	15	26	21	15	33	37
%	10.2	17.7	14.3	10.2	22.4	25.2
CUM%	10.2	27.9	42.2	52.4	74.8	100

HOSPITAL N= 217 MEAN= 3.93 S.D.= 1.53

	0	1	2	3	4	5
F	11	14	15	21	35	121
%	5.1	6.5	6.9	9.7	16.1	55.8
CUM%	5.1	11.5	18.4	28.1	44.2	100

PSYCHIATRIC N= 540 MEAN= 2.58 S.D.= 1.78

	0	1	2	3	4	5
F	89	99	72	78	93	109
%	16.5	18.3	13.3	14.4	17.2	20.2
CUM%	16.5	34.8	48.1	62.6	79.8	100

----IRRITABILITY ----------

PAIN CLINIC N= 231 MEAN= 2.62 S.D.= 1.88

	0	1	2	3	4	5	6
F	34	45	41	34	26	33	18
%	14.7	19.5	17.7	14.7	11.3	14.3	7.8
CUM%	14.7	34.2	51.9	66.7	77.9	92.2	100

GENERAL PRACTICE N= 147 MEAN= 2.45 S.D.= 1.67

	0	1	2	3	4	5	6
F	15	37	29	28	17	13	8
%	10.2	25.2	19.7	19.0	11.6	8.8	5.4
CUM%	10.2	35.4	55.1	74.1	85.7	94.6	100

HOSPITAL N= 217 MEAN= 1.85 S.D.= 1.59

	0	1	2	3	4	5	6
F	53	52	47	25	21	18	1
%	24.4	24.0	21.7	11.5	9.7	8.3	0.5
CUM%	24.4	48.4	70.0	81.6	91.2	99.5	100

PSYCHIATRIC N= 540 MEAN= 2.9 S.D.= 1.9

	0	1	2	3	4	5	6
F	59	93	103	72	78	71	64
%	10.9	17.2	19.1	13.3	14.4	13.1	11.9
CUM%	10.9	28.1	47.2	60.6	75.0	88.1	100

APPENDIX 2. PART A.

The body image questionnaire.

S.I. QUESTIONNAIRE

Consider each item, then tick to indicate how you feel about that particular part of our body right now. There are no right or wrong answers and do not spend too much time n each item.

	Not happy want changed	Not happy -tolerate	No particular feeling	Satisfied	Consider fortunate	For Office Use
Hair						
Facial complexion						
Appetite						
Hands						
Distribution of hair over body						
Nose						
Fingers						
Wrists						
Breathing						
Waist						
Energy level						
Back						
Exercise						
Ears						
Chin						
Ankles						
Neck						
Shape of head						
Body build						
Profile						

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	Not happy want changed	Not happy -tolerate	No particular feeling	Satisfied	Consider fortunate	For Office Use
Height						
Age						
Width of shoulders						
Arms						
Chest						
Eyes						
Hips						
Skin texture						
Upper lip						
Legs						
Lower teeth						
Feet						
Lower lip						
Forehead						
Upper teeth						
Speech						
Health						
Sex activities						
Knees						
Face						
Weight						

APPENDIX 2. PART B.

Scoring the body image questionnaire.

APPENDIX 2 PART B.

Scoring the body image questionnaire.

A mark against the item attracts the following score,

not happy, want changed.	5
not happy - tolerate.	4
no particular feelings.	3
satisfied.	2
consider fortunate.	1

The general body image consisted of the following items,

1. Hands.
2. Distribution of hair over body.
3. Fingers.
4. Wrists.
5. Waist.
6. Back.
7. Ankles.
8. Neck.
9. Body build.
10. Profile.
11. Height.
12. Width of shoulders.

13. Arms.
14. Chest.
15. Hips.
16. Skin texture.
17. Legs.
18. Feet.
19. Knees.

The dentofacial body image consisted of the following items,

1. Facial complexion.
2. Nose.
3. Chin.
4. Eyes.
5. Upper lip.
6. Lower teeth.
7. lower lip.
8. Upper teeth.
9. Face.

APPENDIX 3. PART A.

The anxiety state questionnaire, with scores.

S.S. TEST

DIRECTIONS: Read each statement and then tick to indicate how you feel RIGHT NOW, that is, AT THIS MOMENT. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your PRESENT feelings best.

		NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO	For off use
01.	I feel calm.	4	3	2	1	( )
02.	I feel secure.	4	3	2	1	( )
03.	I am tense.	1	2	3	4	( )
04.	I am regretful.	1	2	3	4	( )
0.	I feel at ease.	4	3	2	1	( )
06.	I feel upset.	4	3	2	1	( )
07.	I am presently worrying over possible misfortunes.	1	2	3	4	( )
8.	I feel rested.	4	3	2	1	( )
9.	I feel anxious.	1	2	3	4	( )
0.	I feel comfortable.	4	3	2	1	( )
1.	I feel self confident.	4	3	2	1	( )
	I feel nervous.	1	2	3	4	( )
3.	I am jittery.	1	2	3	4	( )
4.	I feel high strung.	1	2	3	4	( )
.	I am relaxed.	4	3	2	1	( )
.	I feel content.	4	3	2	1	( )
.	I am worried.	1	2	3	4	( )
.	I feel over-excited and rattled	1	2	3	4	( )
.	I feel joyful.	4	3	2	1	( )
.	I feel pleasant.	4	3	2	1	( )

APPENDIX 3. PART B.

The anxiety trait questionnaire, with scores.

RECTIONS: Read each statement and then tick to indicate how you GENERALLY FEEL. ere are no right or wrong answers. Do not spend too much time on any one atement, but give the answer which seems to best describe how you GENERALLY FEEL.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS	For office use
I feel pleasant	4	3	2	1	( )
I tire quickly.	1	2	3	4	( )
I feel like crying.	1	2	3	4	( )
I wish I could be as happy as others seem to be.	1	2	3	4	( )
I am losing out on things because I can't make up my mind soon enough.	1	2	3	4	( )
I feel rested.	4	3	2	1	( )
I am calm, cool and collected.	4	3	2	1	( )
I feel that difficulties are piling up so that I cannot overcome them.	1	2	3	4	( )
I worry too much over something that doesn't really matter.	1	2	3	4	( )
I am happy.	4	3	2	1	( )
I am inclined to take things hard.	1	2	3	4	( )
I lack self confidence.	1	2	3	4	( )
I feel secure.	4	3	2	1	( )
I try to avoid facing a crisis or difficulty.	1	2	3	4	( )
I feel blue.	1	2	3	4	( )
I am content.	4	3	2	1	( )
Sometimes unimportant thought/s run through my mind and bother me.	1	2	3	4	( )
I take dissappointments so keenly that I can't put them out of my mind.	1	2	3	4	( )
I am a steady person.	4	3	2	1	( )
I get into a state of tension or turmoil as I think over my recent concerns and interests.	1	2	3	4	( )

APPENDIX 4.

The depression scale, with scores.

DIRECTIONS: Read each statement and then tick to indicate how you GENERALLY FEEL. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer which seems to best describe how you GENERALLY FEEL.

		A LITTLE OF THE TIME	SOME OF THE TIME	GOOD PART OF THE TIME	MOST OF THE TIME	For Of
41.	I feel down-hearted and blue.	1	2	3	4	( )
42.	Morning is when I feel the best.	4	3	2	1	( )
43.	I have crying spells or feel like it.	1	2	3	4	( )
44.	I have trouble sleeping at night.	1	2	3	4	( )
45.	I eat as much as I used to.	4	3	2	1	( )
46.	I still enjoy sex.	4	3	2	1	( )
47.	I notice that I am losing weight.	1	2	3	4	( )
48.	My heart beats faster than usual.	1	2	3	4	( )
49.	I have trouble with constipation.	1	2	3	4	( )
50.	I get tired for no reason.	1	2	3	4	( )
51.	My mind is as clear as it used to be.	4	3	2	1	( )
52.	I find it easy to do the things I used to.	4	3	2	1	( )
53.	I am restless and can't keep still.	1	2	3	4	( )
54.	I feel hopeful about the future.	4	3	2	1	( )
55.	I am more irritable than usual.	1	2	3	4	( )
56.	I find it easy to make decisions.	4	3	2	1	( )
57.	I feel that I am useful and needed.	4	3	2	1	( )
58.	My life is pretty full.	4	3	2	1	( )
59.	I feel that others would be better off if I were dead.	1	2	3	4	( )
60.	I still enjoy the things I used to do.	4	3	2	1	( )

APPENDIX 5. PART A.

Life events questionnaire.

L.E. QUESTIONS

Every question will have a list of years like this:

4+ 4 3 2 1 This year. These refer to years ago.

(a) Think back and decide whether the question applied to you in any of these years.

If so, mark an X under each and every year when it applied.

(b) Each question has a space for you to say if it did not apply. If you are sure it does not characterise your life during any of these years, then make an X where it says "Does not apply _____"

(c) If you are doubtful at all, then make up your mind that it does apply.

(d) Answer as well as you can. If you are not sure of the year, don't worry. You will not be more than a year or so off, and the main thing is to spot whether it was a short time ago or quite a while back.

(e) Answer every question.

Use 3 dig
For Offic
Use

400. Mark under the years where there has been either a lot less, or a lot more trouble with the boss:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

401. Mark under the years where your usual sleeping pattern has changed (sleeping a lot more or a lot less, or change in part of day when asleep):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

402. Mark under the years where your eating habits were changed (either a lot more or a lot less eating, or very different meal hours, or surroundings):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

403. Mark under the years that there have been major changes in your personal habits (your dress, manner, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

404. Mark under the years that there have been major changes in your usual amount and/or type of recreation:

Use 3 dig
For Offi
Use

405. Mark under the years where there have been substantial changes in usual social activities (clubs, dancing, movies, visiting, etc.).

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

406. Mark under the years where there have been major changes in your church activity (either a lot more or a lot less, or a change in religion):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

407. Mark under the years where there have been substantial changes in family get-togethers (picnics, holidays, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

408. Mark under the years where you have had either a lot more or a lot less financial problems:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

409. Mark under the years where you have had either a lot more or a lot less "in-law" troubles:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

410. Mark under the years where you had either a lot more or a lot less arguments with your spouse (over child-rearing, personal habits etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

411. Mark under the years where you had either a lot more or a lot less sexual problems:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

NOTICE: FOR THE REST OF THE QUESTIONS, USE NUMBERS TO ANSWER

Every question asks you for the number of items in a year that something happened.

Use 3 digits
For Office Use

412. List the number of times each year that you experienced major illness, injury or major health change (e.g. pregnancy, menopause, weight change, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

413. List the number of times each year that you lost a close family member (other than spouse) by death:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

414. List the number of times you have lost a spouse by death:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

415. List the number of times each year you have lost a close friend by death:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

416. List the number of times you have had a marital reconciliation:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

417. List the number of times each year that you have had a pregnancy:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

418. List the number of times each year that you have gained a new family member (birth of a child, adoption, old person moving in, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

419. List the number of times each year that there have been major changes in the health or behaviour of a family member:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

Use 3 digi
For offic
Use

420. List the number of times each year that you have changed place of residence:

4+ 4 3 2 1 This year

Does not apply _____ ( )

421. List the number of times each year that you have been in jail or some other place of detention:

4+ 4 3 2 1 This year

Does not apply _____ ( )

422. List the number of times each year that you have been guilty of minor violations of the law (disturbing the peace, traffic tickets, etc.):

4+ 4 3 2 1 This year

Does not apply _____ ( )

423. List the number of times each year that you have undergone major change in regard to business (merger, bankruptcy, reorganisation, etc.):

4+ 4 3 2 1 This year

Does not apply _____ ( )

424. List the number of times each year that you were married:

4+ 4 3 2 1 This year

Does not apply _____ ( )

425. List the number of times each year that you were divorced:

4+ 4 3 2 1 This year

Does not apply _____ ( )

426. List the number of times each year that you had a marital separation:

4+ 4 3 2 1 This year

Does not apply _____ ( )

427. List the number of times each year that you have achieved special success (championships, awards, notable accomplishments, etc.):

4+ 4 3 2 1 This year

Does not apply _____ ( )

428. List the number of times each year that a son or daughter has married or moved out of home:

4+ 4 3 2 1 This year

Does not apply _____ ( )

Use 3 digits
For Office Use

429. List the number of times each year that you have retired:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

430. List the number of times each year that there have been unusual changes in working hours or conditions:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

431. List the number of times each year that you have experienced a change in responsibilities at work (promotions, demotions, transfers, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

432. List the number of times each year that you have been fired:

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

433. List the number of times each year that your living conditions have substantially changed (remodelling, building, additions, decoration of home, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

434. List the number of times each year that your wife started and/or ceased working outside the home (employment, volunteer work, study, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

435. List the number of times each year that you took on a new mortgage or loan greater than $20,000 (financing a home, a business, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

436. List the number of times each year that you took on a new mortgage or loan less than $20,000 (new car, T.V., freezer, etc.):

4+ 4 3 2 1 This year

_____ Does not apply _____ ( )

Use 3 digi
For Offic
Use

437. List the number of times each year that you have experienced a foreclosure on a mortgage or loan:

4+ 4 3 2 1 This year

Does not apply _____ ( )

438. List the number of times each year that you have had a holiday of 2 weeks or more:

4+ 4 3 2 1 This year

Does not apply _____ ( )

439. List the number of times each year that you changed schools or teaching institutions:

4+ 4 3 2 1 This year

Does not apply _____ ( )

440. List the number of times each year you changed to a new line of work:

4+ 4 3 2 1 This year

Does not apply _____ ( )

441. List the number of times each year you have either begun or quit formal schooling:

4+ 4 3 2 1 This year

Does not apply _____ ( )

442. List the number of times each year when the pain in the jaw or jaw joint became so bad that you had to seek professional help for the pain:

4+ 4 3 2 1 This year

Does not apply _____ ( )

APPENDIX 5. PART B.

Weighted scores for life events.

APPENDIX 5 PART B.

Trouble with boss	23
Change in sleeping habits	16
Change in eating habits	15
Revision of personal habits	24
Change in recreation	19
Change in social activities	18
Change in church activities	19
Change in number of family get togethers	15
Change in financial state	38
Trouble with inlaws	29
Change in number of arguments with spouse	35
Sex difficulties	39
Personal illness or injury	53
Death of close family member	63
Death of spouse	100
Death of close friend	37
Marital reconciliation	45
Pregnancy	40
Gain of new family member	39
Change in health of family member	44
Change in residence	20
Jail term	63
Minor violation of the law	11
Business readjustment	39

Marriage	50
Divorce	73
Marital separation	65
Outstanding personal achievement	28
Son or daughter leaving home	29
Retirement	45
Change in working hours or conditions	20
Fired at work	47
Change in living conditions	20
Wife began or stopped work	26
Mortgage over $20,000	31
Mortgage or loan less than $20,000	17
Foreclosure of mortgage or loan	30
Vacation	13
Change in schools	20
Change to a different line of work	36
Began or ended school	26

APPENDIX 6. PART A.

Pre operative patient profile.

NAME _____ DOB ___/___/___ AGE _____

UR (RAH) _____ (SADS) _____ STUDY NUMBER _____

OCCUPATION _____

SOURCE OF REFERRAL _____

MEDICAL STATUS FIT

NOT FIT FOR G.A. (specify)

SOCIAL HISTORY UNSTABLE (specify)

STABLE

UNKNOWN

DIAGNOSIS

SYNDROME (state)

MAXILLA HYPERPLASIA VERTICAL

TRANSVERSE

A.P.

HYPOPLASIA VERTICAL

TRANSVERSE

A.P.

ASYMMETRY

NOSE (state)

ZYGOMA (state)

MANDIBLE	HYPERPLASIA	A.P.
		OTHER
	HYPOPLASIA	A.P.
		OTHER
	ASYMMETRY	

CHIN (state)

ANTERIOR OPEN BITE

BIMAXILLARY

T.M.J.	MUSCLE
	INTERNAL DERANGEMENT

OTHER (state)

TREATMENT

					TYPE (state)
PRE-OPERATIVE ORTHODONTICS		OFFERED	Y	N	
		PERFORMED	Y	N	
SURGERY		OFFERED	Y	N	
		PERFORMED	Y	N	

TYPE OF SURGERY

MAXILLA	LE FORT I	1 PIECE	SEGMENTAL	no of pieces horseshoe
	LE FORT II			
	LE FORT III			
	ANTERIOR SUBAPICAL			
	POSTERIOR SUBAPICAL			
	OTHER (state)			

MANDIBLE SAGITTAL SPLIT

SUBSIGMOID

STEP

ANTERIOR SUBAPICAL

COMBINATION

OTHER (state)

BIMAXILLARY

CHIN WITH MAXILLA WITH MANDIBLE ALONE

REDUCTION VERTICAL

A.P.

AUGMENTATION VERTICAL

A.P.

ASYMMETRIC MOVEMENT (state)

ZYGOMATIC (state)

OTHER PROCEDURE (state)

INTERMAXILLARY FIXATION Y N

INTERNAL FIXATION (state type)

MOVEMENTS (state)

SURGERY BOOKED Y N DATE ___/___/___

INTRA OPERATIVE COMPLICATIONS (state)

APPENDIX 6. PART B.

Self directed post operative assessment.

No.

1. Are you pleased with the way you now look? (circle the closest answe

Yes Somewhat No No difference

2. Are you pleased with the way you can chew? (circle the closest answe

Yes Somewhat No No difference

3. How would you rate the various parts of your hospital and surgical experience? (tick the closest answer)

		Liked	Alright	Disliked
Before:	Planning appointments			
	Friday presentation			
	Explanation of operation			
During:	Hospital before operation			
	Anaesthetic			
	Operating Theatre			
	Recovery			
	Jaws wired together			
	Doctors			
	Nurses			
After:	Follow up visits.			

4. If a close friend or relation had the same jaw problem as you would you encourage them to have surgery? (circle answer)

Yes No

COMMENTS:

APPENDIX 6. PART C.

Operator scored post operative assessment.

POST-OPERATIVE PATIENT PROFILE.

NAME_____AGE_____STUDY NUMBER_____

DATE OF OPERATION __/__/__ TIME POST-OP (MONTHS)____

REVIEWER_____

APPEARANCE
- PATIENT SATISFIED
- SATISFIED WITH MINOR COMPLAINTS
- NOT SATISFIED

FUNCTION
- PATIENT SATISFIED
- SATISFIED WITH MINOR COMPLAINTS
- NOT SATISFIED

RESIDUAL COMPLICATIONS. (SPECIFY)
- PARAESTHESIA
- ANAESTESIA
- SCARS
- PAIN
- T.M.J. DYSFUNCTION
  - -MUSCLE
  - -INTERNAL DERANGEMENT
- MALOCCLUSION
- DENTAL MORBIDITY
- OTHER.

APPENDIX 7.

Pre operative work up for patients contemplating dentofacial surgery.

APPENDIX 7.

Usual pre operative workup for patients contemplating dentofacial surgery.

1. Full medical, dental and social history.

2. Assessment of motivation.

3. Aesthetic facial examination, assessment of temporomandibular function and intra oral examination.

4. Radiographic examination.

I Lateral head cephalometric radiograph.

II Postero-anterior skull cephalometric radiograph.

III Orthopantomagraph.

5. Dental impressions and bite registration for construction of dental study models.

APPENDIX 8.

Recommended package.

I.B.Q.

Here are some questions about you and your illness. Circle either YES or NO to indicate your answer to each question.

1. Do you worry a lot about your health?	YES	NO
2. Do you think there is something seriously wrong with your body?	YES	NO
3. Does your illness interfere with your life a great deal?	YES	NO
4. Are you easy to get on with when you are ill?	YES	NO
5. Does your family have a history of illness?	YES	NO
6. Do you think you are more liable to illness than other people?	YES	NO
7. If the doctor told you that he could find nothing wrong with you would you believe him?	YES	NO
8. Is it easy for you to forget about yourself and think about all sorts of other things?	YES	NO
9. If you feel ill and someone tells you that you are looking better, do you become annoyed?	YES	NO
10. Do you find that you are often aware of various things happening in your body?	YES	NO
11. Do you ever think of your illness as a punishment for something you have done wrong in the past?	YES	NO
12. Do you have trouble with your nerves?	YES	NO
13. If you feel ill or worried, can you be easily cheered up by the doctor?	YES	NO
14. Do you think that other people realise what its like to be sick?	YES	NO
15. Does it upset you to talk to the doctor about your illness?	YES	NO
16. Are you bothered by many pains and aches?	YES	NO
17. Does your illness affect the way you get on with your family or friends a great deal?	YES	NO
18. Do you find that you get anxious easily?	YES	NO
19. Do you know anybody who has had the same illness as you?	YES	NO
20. Are you more sensitive to pain than other people?	YES	NO
21. Are you afraid of illness?	YES	NO
22. Can you express your personal feelings easily to other people?	YES	NO
23. Do people feel sorry for you when you are ill?	YES	NO
24. Do you think that you worry about your health more than most people?	YES	NO
25. Do you find that your illness affects your sexual relations?	YES	NO
26. Do you experience a lot of pain with your illness?	YES	NO
27. Except for your illness, do you have any problems in your life?	YES	NO
28. Do you care whether or not people realise you are sick?	YES	NO
29. Do you find that you get jealous of other people's good health?	YES	NO
30. Do you ever have silly thoughts about your health which you can't get out of your mind, no matter how hard you try?	YES	NO

31. Do you have any financial problems?	YES	NO
32. Are you upset by the way people take your illness?	YES	NO
33. Is it hard for you to believe the doctor when he tells you there is nothing for you to worry about?	YES	NO
34. Do you often worry about the possibility that you have got a serious illness?	YES	NO
35. Are you sleeping well?	YES	NO
36. When you are angry, do you tend to bottle up your feelings?	YES	NO
37. Do you often think that you might suddenly fall ill?	YES	NO
38. If a disease is brought to your attention (through the radio, television, newspapers or someone you know) do you worry about getting it yourself?	YES	NO
39. Do you get the feeling that people are not taking your illness seriously enough?	YES	NO
40. Are you upset by the appearance of your face or body?	YES	NO
41. Do you find that you are bothered by many different symptoms?	YES	NO
42. Do you frequently try to explain to others how you are feeling?	YES	NO
43. Do you have any family problems?	YES	NO
44. Do you think there is something the matter with your mind?	YES	NO
45. Are you eating well?	YES	NO
46. Is your bad health the biggest difficulty of your life?	YES	NO
47. Do you find that you get sad easily?	YES	NO
48. Do you worry or fuss over small details that seem unimportant to others?	YES	NO
49. Are you always a co-operative patient?	YES	NO
50. Do you often have the symptoms of a very serious disease?	YES	NO
51. Do you find that you get angry easily?	YES	NO
52. Do you have any work problems?	YES	NO
53. Do you prefer to keep your feelings to yourself?	YES	NO
54. Do you often find that you get depressed?	YES	NO
55. Would all your worries be over if you were physically healthy?	YES	NO
56. Are you more irritable towards other people?	YES	NO
57. Do you think that your symptoms may be caused by worry?	YES	NO
58. Is it easy for you to let people know when you are cross with them?	YES	NO
59. Is it hard for you to relax?	YES	NO
60. Do you have personal worries which are not caused by physical illness?	YES	NO
61. Do you often find that you lose patience with other people?	YES	NO
62. Is it hard for you to show people your personal feelings?	YES	NO

S.I. QUESTIONNAIRE

Consider each item, then tick to indicate how you feel about that particular part of your body right now. There are no right or wrong answers and do not spend too much time on each item.

	Not happy want changed	Not happy -tolerate	No particular feeling	Satisfied	Consider fortunate	For Office Use
Hair						
Facial complexion						
Appetite						
Hands						
Distribution of hair over body						
Nose						
Fingers						
Wrists						
Breathing						
Waist						
Energy level						
Back						
Exercise						
Ears						
Chin						
Ankles						
Neck						
Shape of head						
Body build						
Profile						

...2/

	Not happy want changed	Not happy -tolerate	No particular feeling	Satisfied	Consider fortunate	For Office Use
Height						
Age						
Width of shoulders						
Arms						
Chest						
Eyes						
Hips						
Skin texture						
Upper lip						
Legs						
Lower teeth						
Feet						
Lower lip						
Forehead						
Upper teeth						
Speech						
Health						
Sex activities						
Knees						
Face						
Weight						