1990

Pre-operative patient attitudes and surgical outcome : a pilot study of elective nasal surgery patients

Ellen H. Ribner
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Ribner, Ellen H., M.S.

San Jose State University, 1990

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**PRE-OPERATIVE PATIENT ATTITUDES AND SURGICAL OUTCOME:
A PILOT STUDY OF ELECTIVE NASAL SURGERY PATIENTS**

**A Thesis
Presented to
the Faculty of the Department of Psychology
San Jose State University**

**In Partial Fulfillment
of the Requirements for the Degree
Master of Science**

**By
Ellen H. Ribner
May, 1990**

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ABSTRACT

PRE-OPERATIVE PATIENT ATTITUDES AND SURGICAL OUTCOME: A PILOT STUDY OF ELECTIVE NASAL SURGERY PATIENTS

by Ellen H. Ribner

The stated object of this study was to design an instrument, the Patient Attitudes Scale, as a predictor to enable surgeons to identify those patients at risk for dissatisfaction post-surgery. Both cosmetic and non-cosmetic nasal surgery patients completed a short pre-operative Patient Attitudes Questionnaire comprised of item clusters believed to measure variables associated with the prediction of risk. Post-operatively, these same 65 patients rated their satisfaction/dissatisfaction with surgical results. Measures completed by participating surgeons included pre-operative status and risk-level ratings as well as individual outcome ratings. Both the questionnaire and surgeons' risk-level ratings were positively and significantly associated with patient outcome ratings, providing predictive validity. The questionnaire and risk-level ratings were positively and significantly associated with each other, demonstrating concurrent validity as well. Patients electing cosmetic rhinoplasty demonstrated significantly higher scores on both the questionnaire and risk-level ratings than did the non-cosmetic controls.

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**Pre-Operative Patient Attitudes And Surgical Outcome:
A Pilot Study Of Elective Nasal Surgery Patients
Ellen H. Ribner
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Running head: PATIENT ATTITUDES AND SURGICAL OUTCOME

Footnote

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ABSTRACT

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The stated object of this study was to design an instrument, the Patient Attitudes Scale, as a predictor to enable surgeons to identify those patients at risk for dissatisfaction post-surgery. Both cosmetic and non-cosmetic nasal surgery patients completed a short pre-operative Patient Attitudes Questionnaire comprised of item clusters believed to measure variables associated with the prediction of risk. Post-operatively, these same 65 patients rated their satisfaction/dissatisfaction with surgical results. Measures completed by participating surgeons included pre-operative status and risk-level ratings as well as individual outcome ratings. Both the questionnaire and surgeons' risk-level ratings were positively and significantly associated with patient outcome ratings, providing predictive validity. The questionnaire and risk-level ratings were positively and significantly associated with each other, demonstrating concurrent validity as well. Patients electing cosmetic rhinoplasty demonstrated significantly higher scores on both the questionnaire and risk-level ratings than did the non-cosmetic controls.

Pre-Operative Patient Attitudes And Surgical Outcome:

A Pilot Study Of Elective Nasal Surgery Patients

Reich (1982, p.367) has stated that "The explosive demand for esthetic surgery...has brought the provision of this service to the level of the marketplace in many countries." In our own country, demand for esthetic or cosmetic surgery has increased dramatically. The 15,000 cases performed in 1949 increased to nearly 1 million by 1971 (Berscheid & Gangestad, 1982). More recently, in 1984, nearly 2 million plastic surgery procedures were performed, an 81% increase over 1981's figures (Deaton & Langman, 1986). Additionally, although females have been the primary consumers of esthetic surgery, Hamburger (1988, p.29) has stated that "increasing numbers of men are choosing cosmetic surgery; a survey by the American Academy of Facial Plastic and Reconstructive Surgery reported that one-third of its members' patients were men."

Both the increased demand for the procedures and the interest of psychologists have led to studies dealing with the contribution of psychology to cosmetic surgery. Many writers attest to the interface between the two disciplines (Berscheid & Gangestad, 1982; Deaton & Langman, 1986; Goin & Goin, 1981; Greer, 1984; Kalick, 1982; Macgregor, 1982; Mohl, 1984; Reich, 1982). There seems to be common ground for collaboration between them.

Parallels exist between cosmetic surgery and psychotherapy in that outcomes for both are judged, in part, in terms of alleviation of emotional distress. Further, measurement of these outcomes is dependent

upon the perceptions of the patients themselves. Non-cosmetic surgical procedures, in contrast, are evaluated in terms that are generally quantifiable: curing physical dysfunction, alleviating physical pain, and/or prolonging life (Hamburger, 1988). Both cosmetic surgeons and psychotherapists treat patients who present with complaints of disturbed body image and/or low self-esteem (Deaton & Langman, 1986, p.179). While success for both fields lies in a patient's self-perceptions, in the case of cosmetic surgery this ultimately means "beauty...in the mind of the beheld" (Hamburger, 1988, p.30).

The main thrust of collaboration between psychologists and cosmetic surgeons has been in the area of pre-surgical assessment, the aim being to 1) evaluate a patient's appropriateness for surgery from a medical point of view and 2) screen out the psychologically high-risk patient, e.g. the patient who is likely to be dissatisfied with the results of surgery (and therefore sue the surgeon).

In general, there are inevitable psychological implications associated with cosmetic surgeries. They are elective but invasive procedures which involve medical risk, the possibility of sub-optimal results, a substantial financial commitment, and an indeterminate period of convalescence with the possibility of discomfort which can last for one or two months. Thus, as Wright and Wright (cited in Hamburger, 1988) have stated: "...regardless of the physical need for aesthetic improvement, individuals who seek plastic surgery always have underlying psychological considerations" (p.30).

Considerable agreement exists among researchers seeking to identify high-risk factors for unsuccessful outcomes of cosmetic surgery. A review of the literature has identified the following as indicative of an inappropriate or high-risk candidate for cosmetic surgery, although there is no evidence that any one factor automatically leads to dissatisfaction: 1) having unrealistic expectations including hoped-for changes in personal or social areas and/or an inability to withstand less than a perfect result (Anderson & Ries, 1986; Deaton & Langman, 1986; Greer, 1984; Hamiburger, 1988; Macgregor & Schaffner, 1950; Mohl, 1984; Reich, 1982; Wright, 1980, 1985; Wright & Wright, 1975); 2) seeking facial cosmetic surgery due to pressure from others (Anderson & Ries, 1986; Deaton & Langman, 1986; Edgerton, 1975; Greer, 1984; Macgregor & Schaffner, 1950; Mohl, 1984; Reich, 1982; Wright, 1985); 3) having misconceptions/false beliefs concerning one's appearance (Deaton & Langman, 1986; Druss, Symonds, & Crikelair, 1971; Kalick, 1982; Macgregor & Schaffner, 1950; Reich, 1982); 4) having vague goals and expectations, such as expressing uncertainty about which aspect of one's appearance should be changed (Anderson & Ries, 1986; Macgregor & Schaffner, 1950; Reich, 1982; Wright, 1985; Wright & Wright, 1975); 5) idealizing the surgeon/placing the decision for what is desired on the latter (Goin, Burgoyne, Goin, & Staples, 1980; Macgregor & Schaffner, 1950; Wright, 1980); 6) having a history of either previous unsuccessful cosmetic surgeries (Anderson & Ries, 1986; Deaton & Langman, 1986; Macgregor & Schaffner, 1950); or 7) numerous cosmetic surgeries (Anderson & Ries,

1986; Hamburger, 1988; Reich, 1982; Wright, 1985); 8) having family opposition to the surgery (Anderson & Ries, 1986; Reich, 1982; Wright, 1985); 9) having a history of mental illness: especially depression, paranoia, or borderline personality disorder (Anderson & Ries, 1986; Deaton & Langman, 1986; Goin et al., 1980; Reich, 1982; Wright, 1980); and 10) exhibiting rash, flighty, impulsive behavior (Anderson & Ries, 1986; Goin et al., 1980; Wright, 1985; Wright & Wright, cited in Hamburger, 1988). Unfortunately, despite awareness of all of the above, "research assessing the relation between pre-surgical evaluations and successful outcome...is not extensive" (Deaton & Langman, 1986, p.180).

This investigation proposes to design a method for identifying that small number of patients, e.g. outliers, whose pre-operative attitudes, motivations and/or expectations seem indicative of a negative outcome. Additionally, this method is designed for ease of use in private practice settings where more cumbersome screening procedures are impractical.

Studies which have focused on the psychological assessment of elective cosmetic surgery patients have utilized varying methodologies. Meyer, Jacobsen, Edgerton, and Cantor (1960) interviewed 30 consecutive female patients aged 14-43 desiring rhinoplasties (nose jobs). They also administered a battery of tests pre- and post-operatively which included the Guilford Zimmerman Temperament Survey, the TDMH Self-Concept Scale, Draw-A-Person, sentence completions, the TAT and others in order to delineate motivational patterns for the surgery. The authors found that all their patients, regardless of age, had been self-conscious and

preoccupied with their noses as ugly or inappropriate from adolescence (p.201). Ten of the 22 patients operated on by the time of publication were reported to have experienced brief but "significant emotional disturbances..." (p. 196). No statistical information correlating these specific patients' pre-operative evaluations with their post-surgical outcomes was presented.

A more recent study of 50 female rhytidectomy (facelift) patients (Goin et al., 1980) utilized MMPI's and the Beck Depression Scale along with a battery of other tests, questionnaires, medical staff observations and interviews in order to identify inappropriate, high-risk patients. While relatively normal, mild elevations were reported for 12 patients on scales purporting to measure impulsivity, introversion, and depression. Additionally, 7 of the 50 patients were evaluated pre-operatively by a psychiatrist as showing evidence of clinical depression. Post-operatively, 30% of the patients displayed clinical evidence of prolonged depression. Fourteen percent experienced prolonged depression, related in some way to unhappiness with surgical results, beginning in the second or third post-operative week. This particular group of patients continued to be depressed for time periods ranging from several weeks to six months post-operatively. The reactions of the entire 30% exhibiting prolonged depressive illness were "primarily correlated with a preexisting, clinically detectable depression, high depressive Beck scores, or a depression-prone personality pattern" (p.442). No specific statistics for the latter correlations were given. No statistically significant correlations were

found between post-operative depression and surgical expectations, how the surgeon felt about the patient, whether the surgeon expected the patient to complain, or the occurrence of post-operative complications (p.438).

Wright and Wright (1975) interviewed and then administered MMPI's to 90 consecutive private practice rhinoplasty patients of both sexes, aged 16 to 60. In order to determine whether specific personality characteristics could be associated with individuals seeking cosmetic surgery (e.g. for correction of appearance), a control group of 25 patients undergoing various non-cosmetic surgical procedures (e.g. for correction of function or relief of pain) was evaluated by the same method. While the rhinoplasty patients requested (elected) to have surgery, there is no indication whether the control group was likewise composed of elective surgery patients. Any comparison between an elective and a nonelective surgical group (e.g. having conditions that are life-threatening or could result in a permanent loss of function) would be compromised by this potentially serious confound. Wright and Wright (1975) found MMPI Scales 4: Psychopathic Deviate (Pd) and 9: Hypomania (Ma) to be significantly but not abnormally elevated pre-operatively for the 90 rhinoplasty patients as compared with the control group of 25 non-cosmetic (elective?) surgical patients. Scales 4 and 9 are two of the MMPI's nine Clinical Scales. Wright and Wright note that these Scales reflect characteristics of personality and emotional adjustment as follows: 1) Scale 4 (Pd) is indicative of "psychopathic deviant tendencies, a disrespect for social values, irresponsibility, and a lack of deep emotional response"; 2) Scale 9

(Ma) reflects "hypomania, emotional excitement, and hyperactivity" (p.146). Wright and Wright (1975) reported scores for their rhinoplasty group on these two scales to be between "50 and 70, elevated, and needing careful interpretation" (p.146). Their rationale for why these particular scores were elevated pre-operatively has been based on "pre-operative evaluations" (p.146) in the form of both surgeon's observations and psychological interviews. The authors found that the rhinoplasty group:

...appeared to function in a state of mild agitation, tension, and restlessness...combined with enthusiasm, imagination, and a high energy level. Their varied interests and ambitions were short-lived...and their plans were seldom realized. They were prone to be self-centered and self-critical...and sensitive to the opinions of others.

Emotional swings included depression as well as excitement. (p.147)

Follow-up evaluations were completed 18-24 months post-surgery for 25 of the 90 rhinoplasty patients. No information was given as to how these 25 were selected for review. Information regarding subject mortality was not provided and there was no mention of follow-up evaluations for any of the controls. In reporting their outcomes, Wright and Wright implied that MMPI re-test scores indicated "fewer ...impulses...and energy and activity levels...more in the normal range" (p.147). Whether follow-up observations by surgeon and psychologist were part of this re-evaluation is not made clear. Pre- and post-test means for matched rhinoplasty pairs

($\bar{x}=25$) on both Scales 4 (Pd) and 9 (Ma) respectively were as follows: Scale 4 (Pd), 65.30 to 60.95; Scale 9 (Ma), 61.25 to 57.85. These changes downward were not statistically significant (p.147), raising serious questions regarding any interpretation of their relationship to pre-surgical scores. Such changes could be attributed to a regression to the mean, given that these scores were initially selected for their extremity.

Finally, Wright and Wright (1975) noted that their pre-operative analyses of both MMPI and observational data "isolated certain personality characteristics as descriptive of facial plastic surgery patients" (p.151). These fell "... in the range of personality disorders, exemplified by the Infantile-Narcissistic and Manipulative- Controlling Personalities" (p.145). They stated that "such personality disturbances can be detected and controlled" (p.151) by screening prospective patients using a combination of clinical observation and structured questions designed to " get the patient to state his motivation and expectations...while providing the framework for the surgeon to clarify what cosmetic surgery can and cannot accomplish" (p.150). These conclusions have been re-emphasized in subsequent writings (Wright, 1980; Wright, 1985; Wright & Wright, cited in Hamburger, 1988).

Wright and Wright have given examples of four structured questions which are representative of what has already been noted in the literature. These questions seem to seek identification of: 1) specific, realistic expectations; 2) internal rather than external pressures as motivators; 3) evaluative, planful rather than impulsive reasons for requesting facial

cosmetic surgery, and 4) a realistic rather than an idealistic view of the surgeon. The questions, together with examples of healthy and unhealthy answers, were presented in both the original study (1975) and more recently in Hamburger (1988). They are presented in their entirety as follows:

1) What specifically would you like me to do for you?

HEALTHY ANSWER: Remove the hump on my nose;
make my nose smaller.

UNHEALTHY ANSWER: Doctor, you tell me; I know
that whatever you say or do will be best.

2) Why do you want this done?

HEALTHY ANSWER: I want to look better.

UNHEALTHY ANSWER: Mother said I'd look better; I want
it to help me get along better with my friends.

3) Why do you want the operation at this time?

HEALTHY ANSWER: I've saved the money.

UNHEALTHY ANSWER: I just suddenly decided I wanted it.

4) Why have you chosen me?

HEALTHY ANSWER: I like the results you have obtained on my
friends.

UNHEALTHY ANSWER: Because you are the greatest surgeon in
the world. (pp. 31-32)

Anderson and Ries (1986) report developing a pre-operative screening
method used thousands of times over the past ten years for rhinoplasty

patients. They mail a 164-item, self-administered history questionnaire to each patient for completion prior to first consultation. The questionnaire screens motivations, expectations, knowledge about the requested surgery, habits, medical/drug history, and personality characteristics. The latter are evaluated by use of a separate personality inventory developed in part with M. R. Wright, co-author of the 1975 study cited above. Questions in the personality inventory are arranged in a yes/no format and specifically relate to "....depression, hysteria, obsessive-compulsive neurosis, paranoia, and schizoid and psychopathic deviancy..." (p.28). Anderson and Ries have noted that surgeons should also look for "caution signals in the history" (pp. 19-20) which include the following: vagueness or unrealistic expectations about the correction desired; rashness in decision-making; a history of numerous cosmetic surgeries/dissatisfaction with previous results; lack of a support system; evidence of depression; perfectionism; seeking the surgery to please others; and/or idealization of the surgeon. While Anderson and Ries have given a detailed presentation of their method, several limitations must be noted. No statistics correlating pre-operative answers on their questionnaire to either surgeon's assessments or post-operative patient dissatisfaction are included. No norms or other standardization data are made available; thus no information on reliability, validity, or factor analytic studies is given. In addition, both the length of the questionnaire and the requirement that it be completed at home prior to first consultation probably render it impractical in a private practice situation.

Experts have concluded that lengthy pre-surgical evaluations are neither practical nor desirable. Wright and Wright (1975), evaluating the use of the MMPI for screening, stated: "...the detailed structure of the MMPI ...makes it impractical..." (p.150) . Surgeons fear that private patients may be offended if asked to consult a psychologist upon presenting for cosmetic surgery (Reich, 1982; Wright & Wright, 1975). Edgerton (1975, cited in Reich, 1982) suggested short pre-operative interviews conducted by the surgeons themselves designed to distinguish between motives that "...arise from internal as opposed to external pressures. In the former, surgery is concerned with the need for an improvement in self-esteem...In the latter, surgery is requested as a result of the desires of others and failure is likely" (p.371).

As this review of the different approaches to pre-operative evaluation has shown, there is still no experimentally validated method for screening out the high-risk patient (Deaton & Langman, 1986; Hamburger, 1988; Wright, 1985; Wright & Wright, 1975). While most private practice screening is based upon an interview conducted by the surgeon with questions focused on patient motivations and expectations, "no single method has proved to be a reliable means of preventing postoperative dissatisfactions" (Wright, 1980, p.467). From the medical point of view, however, "the most significant decision the (cosmetic) surgeon can make is when not to operate" (Reich, 1982, p.375) for not only might a surgeon be at risk from the standpoint of litigation by an unhappy patient, but patients can and do desire cosmetic surgery for reasons that might better be served

by psychotherapy.

The object of this study is to establish an economical, empirically-tested screening method for use by cosmetic surgeons to 1) aid in the decision to perform elective cosmetic surgery on prospective patients and 2) predict the likelihood of success or failure as measured by patient satisfaction or dissatisfaction with resulting facial changes. To develop such an approach involves focusing on those variables which the literature has already suggested as indicative of patient satisfaction/dissatisfaction. By asking for the modal response of patients seeking a cosmetic procedure, a format can be created for the generation of norms.

The factors cited by the literature as indicative of potential post-surgical dissatisfaction can be divided into clusters forming seven high-risk variables. These variables comprise the focus of study in this research and are as follows: 1) impulsivity: electing cosmetic surgery on the spur of the moment rather than with planfulness or deliberation (Anderson & Ries, 1986; Goin et al., 1980; Wright & Wright, cited in Hamburger, 1988); 2) appropriateness of surgical expectations: vague, unrealistic surgical goals as opposed to specific realistic ones; ability to withstand an imperfect result (Anderson & Ries, 1986; Deaton & Langman, 1986; Greer, 1984; Hamburger, 1988; Macgregor & Schaffner, 1950; Mohl, 1984; Reich, 1982; Wright, 1980, 1985; Wright & Wright, 1975); 3) internal/external pressures for cosmetic surgery: improvement of self-esteem as opposed to responding to pressure from others (Anderson & Ries, 1986; Deaton & Langman, 1986; Edgerton, 1975; Greer, 1984;

Macgregor & Schaffner, 1950; Mohl, 1984; Reich, 1982; Wright, 1985); 4) false beliefs: misconceptions concerning one's esthetic appearance; idealization of the surgeon as opposed to relying on one's own best judgement of variables (Deaton & Langman, 1986; Druss, Symonds, & Crikelair, 1971; Goin et al., 1980; Kalick, 1982; Macgregor & Schaffner, 1950; Reich, 1982; Wright, 1980); 5) history of previous cosmetic surgeries: numerous procedures; dissatisfaction versus general satisfaction with results (Anderson & Ries, 1986; Deaton & Langman, 1986; Hamburger, 1988; Macgregor & Schaffner, 1950; Reich, 1982; Wright, 1985); 6) personal support system: family opposition versus support (Anderson & Ries, 1986; Reich, 1982; Wright, 1985); and 7) history of mental illness: particularly depression or borderline personality disorder versus unremarkable history of pathology (Anderson & Ries, 1986; Deaton & Langman, 1986; Goin et al., 1980; Reich, 1982; Wright, 1980).

A specific surgical patient population is needed for studying these seven high-risk variables. Rhinoplasty, one of the six most commonly performed cosmetic procedures (Hamburger, 1988) produces "dramatic aesthetic improvement and a higher percentage of patient satisfaction than other forms of cosmetic surgery" (Wright & Wright, 1975, p.146). While differences between men and women have been hypothesized, none of the aforementioned studies have actually made comparisons based on gender. Edgerton, Jacobson, & Meyer (1960) found statistical support for the view that men seeking rhinoplasty were more maladjusted than women seeking the same procedure. The sample for this study, however, was comprised

of 18 male patients, most of whom were facing a crisis at the time of requested surgery. Anderson and Ries (1986) mentioned requests for rhinoplasty from men as a "caution signal" (p.20) because "some surgeons believe...that their hopes and expectations are apt to be unrealistic."

Studying patients electing rhinoplasty provides access to current data for both sexes without exposure to the potential confounding variables such as aging which are particular to many of the other procedures (Wright & Wright, 1975). Thus, for a sample population of rhinoplasty patients, scores from a self-administered Patient Attitudes Scale (PAS; See Appendix B) based on the seven clusters described above were utilized in order to identify those patients likely to be dissatisfied with the results of surgery (e.g. high-risk patients). Further, ratings by both patients and surgeons were utilized to determine 1) the accuracy of surgical expectations as expressed by scores on pre-operative Surgeon's Status and Risk-Level Ratings (SSR and SRR respectively; See Appendix E); 2) the extent of agreement between surgeons and patients regarding surgical outcome as expressed by scores on Surgeon's and Patient's Outcome Ratings (SOR and POR respectively; See Appendices F and G); and 3) both concurrent and predictive validity for the method being developed.

The following hypotheses have been divided to provide measures of predictive validity (Hypotheses I-II); concurrent validity (Hypotheses III-VI); and predicted differences between those seeking cosmetic and non-cosmetic surgery (Hypotheses VII-VIII).

Hypothesis I: Scores on the Patient Attitudes Scale (PAS) will be

significantly and positively associated with scores on the Patient's Outcome Rating (POR).

Hypothesis II: A positive and significant relationship will exist for Surgeon's Risk-Level Rating (SRR) scores and scores on the POR.

Hypothesis III: A positive and significant relationship will exist for PAS scores and SRR scores.

Hypothesis IV: A positive and significant relationship will exist between Surgeon's Outcome Rating (SOR) scores and POR scores.

Hypothesis V: Scores on the Surgeon's Status Rating (SSR) will be inversely correlated with scores on the PAS.

Hypothesis VI: Scores on the SSR will be inversely correlated with scores on the SRR.

Hypothesis VII: Patients seeking elective cosmetic nasal surgery will demonstrate higher scores on the PAS than patients seeking elective non-cosmetic nasal surgery.

Hypothesis VIII: SRR scores for patients seeking elective cosmetic nasal surgery will be significantly higher than for patients seeking elective non-cosmetic nasal surgery.

Method

Subjects: Data was collected from consecutive patient volunteers scheduled for elective nasal surgery. Nine private cosmetic surgeons in the Palo Alto - San Jose area participated in this study (See Acknowledgments and Appendix D); their offices were used as sources for the volunteers.

In order to confirm the presence of specific, high-risk tendencies

associated with patients seeking cosmetic surgery, consecutive subjects were placed into two pre-existing groups as follows: Group 1) volunteers electing Rhinoplasty and, Group 2) a control group of volunteers electing non-cosmetic nasal surgery. Group 1 included Sub-group 1a: elective cosmetic rhinoplasty patients (e.g. purpose of surgery was to correct/enhance nasal appearance only); and Sub-group 1b: a non-hypothesized group of elective cosmetic and reconstructive rhinoplasty patients (e.g. purpose of surgery was to restore/enhance both nasal appearance and function, sometimes for the purpose of qualifying for some degree of insurance coverage). Surgeries for Group 2 (e.g. purpose of surgery was to correct/enhance nasal function only) were non-pain inspired in order to eliminate physical pain as a confounding motivation and included nasal septoplasty and nasal turbinate reduction.

Based on existing demographics in the Peninsula area, these volunteers were middle and upper-middle class Caucasians residing in or around Santa Clara County. Most were high school graduates; many attended college. The only selection criteria was that participants be age 18 or older.

Measures: Three self-report measures, divided into two sections and presented in counterbalanced order to avoid any order effect, were placed in a single, 65-item Patient Attitudes Questionnaire (See Appendix B). Additionally, four separate ratings by surgeons and patients were administered both pre- and post-operatively.

In the Patient Attitudes Questionnaire the following measures were used, the first two of which measured high-risk tendencies as

operationalized for this study: 1) a structured set of 33 statements comprising the Patient Attitudes Scale (PAS) developed by the principal researcher, requiring each volunteer to utilize a 5-point rating scale for describing the way that each statement applied to them; 2) the 16 true-false statements comprising the Impulsivity Scale (IMS) of Jackson (1974); and 3) the 16 true-false statements comprising the Infrequency Scale (IN) of Jackson (1974) in order to assess tendencies to respond in an implausible manner due to carelessness, poor comprehension, or passive non-compliance and to control thereby for reactive effects of experimental arrangements. Questionnaires with scores representing a significant degree of non-purposeful responding on the IN, e.g. a raw score of four or above (Jackson, 1984, p.25), were disqualified from inclusion in statistical analyses. Jackson has noted (1984, p.5) that the scales are sufficiently distinct to justify their separate use (See Appendix B, Patient Attitudes Questionnaire: Section I, PAS; Section II, IMS and IN).

Patient Attitudes Scale (PAS) has been constructed in the format of a Likert Scale (Tuckman, 1988, p.192). Seven different subtopic areas were based on the seven high-risk clusters derived from the literature and cited above. For each subtopic area, the aim was "...to register the extent of agreement or disagreement (on the part of each subject) with a particular statement of an attitude, belief, or judgement" (Tuckman, 1988, p. 192) according to a 5-point scale utilizing the following categories: 1) Strongly Disagree; 2) Disagree; 3) Neutral; 4) Agree; and 5) Strongly Agree. The responses of subjects on each of the seven high-risk variables were then

quantified and interval data obtained to assess the degree of high-risk decision-making as expressed in attitudes, feelings and personal history relevant to elective nasal surgery. Criteria for developing statements included in this scale required that each one be 1) designed according to commonly used criteria in the design of such instruments (Tuckman, 1988, pp. 191-238); 2) related specifically to one of the seven high-risk clusters as defined for this pilot study; 3) drawn specifically from questions or topic categories defined in the literature as examples for screening out high-risk patients presenting for facial cosmetic surgery; and 4) equally applicable to both the experimental and control group. Within each subtopic area it was required that some of the statements be reversed so that agreement on some would indicate positivity while disagreement on others would indicate the same as a protection against response bias (Tuckman, 1988, p. 234).

Impulsivity Scale (IMS) of Jackson (1974) is one of the 22 subscales included in the Personality Research Form-E (PRF-E), a shortened version of the PRF.

Infrequency Scale (IN) of Jackson (1974) is one of two validity subscales included in the Personality Research Form-E (PRF-E).

In the case of the pre- and post-operative ratings, the following measures were used, each in the form of a single 5-point rating scale developed by the principal researcher for use in this study: 1) Surgeon's Status Rating (SSR); 2) Surgeon's Risk-Level Rating (SRR); 3) Patient's Outcome Rating (POR); and 4) Surgeon's Outcome Rating (SOR).

Surgeon's Status Rating (SSR; See Appendix E) is a pre-operative rating made by the surgeon at the time of pre-operative consultation grading each patient's presenting nasal condition on a scale from A to F (A, with minimal defect; F, major defect). In data analysis, this A to F rating was converted to a numerical scale of 1 to 5 with A being 1 and F being 5.

Surgeon's Risk-Level Rating (SRR; See Appendix E) is a pre-operative rating made by the surgeon at the time of pre-operative consultation estimating each patient's risk level for dissatisfaction post-surgery on a scale from 1 to 5 (with 1 being no or low dissatisfaction and 5 being major, high-risk dissatisfaction) based on both pre-operative clinical impressions and information from the pre-operative medical history.

Patient's Outcome Rating (POR; See Appendix G) is a rating made by each patient at the time of the first month post-operative visit (4-6 weeks post-operatively depending on individual schedules) for the purpose of evaluating their satisfaction/dissatisfaction with surgical results on a scale from 1 to 5 (1 being extremely satisfied and 5 being extremely dissatisfied).

Surgeon's Outcome Rating (SOR; See Appendix F) is a rating made by each surgeon at the time of the first month post-operative visit assigning a grade from A to F (A being best possible effect; F, worst possible effect) which in their opinion best described the outcome of surgery. In data analysis, this A to F rating was converted to a numerical scale of 1 to 5 with A being 1 and F being 5.

Procedure: Each prospective subject had consulted a private practice cosmetic surgeon for the specific purpose of discussing either elective cosmetic or elective non-cosmetic nasal surgery. The opportunity to participate in this particular study was offered by the research assistant/nurse who assured each prospective volunteer of confidentiality and anonymity over the course of the study. Recording of data on all but the consent form (See Appendix C) was by code number rather than by name. Consent forms and coded data were kept in separate locked files available only to the principal researcher.

The principal researcher was a female graduate student in clinical psychology. The research assistants (nurses at the surgeons' offices) were instructed by the principal researcher. In order to control for both instrumentation problems and reactive effects, research assistants knew that the study involved the motivations and expectations of patients presenting for nasal surgery, but knew nothing of the focus on high-risk candidates for cosmetic surgery or the comparisons between groups.

Questionnaire and consent form packets were given out at the time of the pre-operative visit until 30 or more were collected, thus meeting the minimum sample size requirement of 15 for each of the two groups. The questionnaire was quickly self-administered, time for completion as well as signing the accompanying consent form being about ten minutes.

Volunteers had the option of completing the information either in the surgeon's waiting room or at home, in either case sealing it and returning it in the envelope provided. Surgeons completed their pre-operative

ratings (SSR and SRR) immediately following this same pre-operative patient visit.

While swelling can continue for up to 12 months post-surgery, most patients see a noticeable difference within two weeks and do volunteer positive or negative reactions about the overall effect. Accordingly, both patients and surgeons completed post-operative outcome ratings (POR and SOR respectively) at the time of the first month post-operative visit.

Participation in this study presented no risks or discomforts in that it in no way altered normal medical pre-operative evaluation, surgery, or post-operative care. A possible benefit was an increase in patient self-awareness regarding attitudes/motivations concerning surgery. Data collection was conducted over a period of eight months.

Results

A total of 74 patients participated in this study. Of these, data from nine patients was discarded due to the following: 1) cancellation of surgery (three); 2) not returning within time-frame for the post-operative visit (three); 3) disqualification for not meeting the minimum age requirement of 18 (one); 4) disqualification due to a raw score of 7 on the IN of Jackson representing a significant degree of non-purposeful responding (one); and 5) non-completion of the post-operative rating forms due to surgical complications and re-hospitalization (one). The final sample, therefore, included 65 adults aged 18 to 67. Forty-three were male; 22 were female.

Seven measures were collected on each patient: 1) the 33-statement

self-administered Patient Attitudes Scale (PAS); 2) the Impulsivity Scale (IMS) of Jackson; 3) the Infrequency Scale (IN) of Jackson; 4) the pre-operative Surgeon's Status Rating (SSR); 5) the pre-operative Surgeon's Risk-Level Rating (SRR); 6) the post-operative Patient's Outcome Rating (POR) and 7) the post-operative Surgeon's Outcome Rating (SOR). Normative data for the IMS (Form PRF-E) have already been established for adult populations (Jackson, 1984, p.20). Raw scores on the IMS in this study were converted to T scores as presented by Jackson in his tables (Jackson, 1984, pp. 12-13).

Basic descriptive statistics for the PAS, the four pre- and post-operative rating scales, and each of the seven high-risk clusters comprising the PAS are presented in Table 1.

In order to provide equally-weighted descriptions of relative performance on multiple measures, raw scores were converted to z scores. For ease in reporting test results, as well as to conform to tables for the IMS, T scores were computed for completion of all statistical tests which followed. The confidence level of .05 was selected for rejection of the null.

The usual measure of correlation in the parametric case is the Pearson product-moment correlation coefficient which assumes that scores are drawn from normally distributed populations (Siegel & Castellan, 1988, p.225). For given sets of data in the present study, this assumption was not the case (See Table 1 and Histograms, Figures 1 - 5 for examples). In fact, with regard to the main dependent variable and major measure of

Table 1**Basic Descriptive Statistics: Raw Scores (N=65)**

	Mean	SD	Variance	Mode	Skewness
PAS	80.662	10.969	120.321	84	.146
SSR	3.723	1.023	1.047	3	-.396
SRR	2.446	.952	.907	2	.757
POR	2.031	1.045	1.093	2	1.179
SOR	1.985	.780	.609	2	.623
Cluster 1	13.723	2.546	6.485	15	-.545
Cluster 2	15.200	3.193	10.194	-	.223
Cluster 3	10.769	2.973	8.837	11	-.098
Cluster 4	15.985	2.348	5.515	16	-.704
Cluster 5	6.154	3.532	12.476	-	1.452
Cluster 6	10.308	3.221	10.373	10	.661
Cluster 7	8.523	2.593	6.722	10	.150

Note. Cluster 1 = Impulsivity; Cluster 2 = Inappropriate Expectations; Cluster 3 = Internal vs. External Pressures for Surgery; Cluster 4 = False Beliefs/Misconceptions; Cluster 5 = History of Previous Surgery; Cluster 6 = Negative Support System; Cluster 7 = Mental/Psychological Factors.

Figure 1. Histogram of Surgeon's Status Rating (SSR)

Figure 2. Histogram of Patient's Outcome Rating (POR)

Figure 3. Histogram of Surgeon's Outcome Rating (SOR)

Figure 4. Histogram of Cluster 5 (history of previous surgery)

Figure 5. Histogram of Cluster 6 (negative support system)

correlation--the Patient's Outcome Rating (POR)--the literature supports the finding that most patients are pleased with surgical results (Wright, 1983, p.12). Hence a skewed distribution of scores in the direction of satisfaction with surgical outcome. "When the distribution of scores on the dependent variable (or on both variables in a correlation) are skewed, conclusions based on parametric tests are less valid. The greater the skewness, the greater the invalidity..." (Tuckman, 1988, p.267). Due to the skewed distribution of data not only on the POR but on many other measures, as well as to the narrowness of range in the pre- and post-operative rating scales, the Spearman rank-order correlation coefficient was used to determine the significance of the observed association between variables. "The efficiency of the Spearman rank-order correlation coefficient when compared with...the Pearson...is about 91%" (Siegel & Castellan, 1988, p.244).

Hypotheses I-VI: Measures of Predictive and Concurrent Validity: The stated object of this study was to design an instrument, the Patient Attitudes Scale (PAS), as a predictor to enable surgeons to identify those patients at risk for dissatisfaction post-surgery. Hypotheses I-VI were formulated to provide that validation and were analyzed on the total cohort of 65 patients. Hypotheses I and II provided measures of predictive validity as follows: 1) Scores on the PAS were found to be significantly and positively associated with scores on the POR (Hypothesis I); and 2) scores on the Surgeon's Risk-Level Rating (SRR) were also significantly and positively associated with scores on the POR (Hypothesis II). Hypotheses III-VI measured

concurrent validity as follows: 1) A significant and positive association was found between scores on the PAS and the SRR (Hypothesis III); 2) a positive, but non-significant association existed between scores on the Surgeon's Outcome Rating (SOR) and the POR (Hypothesis IV); 3) scores on the Surgeon's Status Rating (SSR) were inversely, but not significantly associated with scores on the PAS (Hypothesis V); and 4) a significant inverse association was found between scores on the SSR and the SRR (Hypothesis VI). Correlations for Hypotheses I-VI are presented in Table 2.

Hypotheses VII-VIII: Predicted Differences Between Groups: A one-tailed t-test for independent groups was performed in order to assess the difference between the cosmetic and non-cosmetic groups on both the more normally distributed PAS and SRR. While there was no significant difference between these groups on the PAS (Hypothesis VII), patients having elective cosmetic nasal surgery did have significantly higher scores on the SRR than patients having elective non-cosmetic nasal surgery (Hypothesis VIII). The non-hypothesized sub-group 1b (mixture of cosmetic, reconstructive, and functional surgery) demonstrated scores on both the PAS and SRR that were more like those of the purely functional non-cosmetic controls (Group 2) than those of the purely cosmetic sub-group (1a). This effectively lowered the mean for Group 1 as a whole, obscuring the difference between the two main groups. When the pure cosmetic rhinoplasty sub-group (1a) was compared separately with the non-cosmetic group, patients in this sub-group demonstrated significantly

Table 2**Spearman Rank-Order Correlations (one-tailed;N=65)****Hypotheses I-VI:**

<u>Hypothesis</u>	<u>Correlation</u>	<u>Rho Corrected for Ties</u>	<u>Z Corrected</u>	<u>P</u>
I	PAS:POR	.319	2.555	<.01
II	SRR:POR	.312	2.497	<.01
III	PAS:SRR	.301	2.408	<.01
IV	SOR:POR	.176	1.406	.08 ns
V	PAS:SSR	-.061	-.484	.32 ns
VI	SSR:SRR	-.277	-2.220	<.03

Note. PAS = Patient Attitudes Scale; POR = Patient's Outcome Rating;
 SRR = Surgeon's Risk-Level Rating; SOR = Surgeon's Outcome Rating;
 SSR = Surgeon's Status Rating.

higher scores than patients having non-cosmetic nasal surgery on both the Patient Attitudes Scale (PAS) and the Surgeon's Risk-Level Rating (SRR), validating Hypotheses VII and VIII. No significant differences were demonstrated between sub-group 1b (mixture of cosmetic and reconstructive rhinoplasty) and the non-cosmetic group. No significant differences were found between male and female patients on the PAS. A negative but significant difference was demonstrated between genders on the SRR with women being rated greater risks. Data for t-test analyses are presented in Table 3 for the Patient's Attitude Scale (PAS) and in Table 4 for the Surgeon's Risk-Level Rating (SRR).

Subsidiary Analyses: Spearman rank-order correlations were performed on the total cohort (N=65) between the Patient's Outcome Rating (POR) and all seven high-risk clusters of the Patient Attitudes Scale (PAS). Two significant associations were found: 1) a positive and significant association between Cluster 2 (Inappropriate Expectations) and the POR ; and 2) a positive and significant relationship between Cluster 6 (Negative Support System) and the POR. Data for correlations on all seven clusters are presented in Table 5.

Basic descriptive statistics in the form of T scores were calculated for individual groups in order to 1) clarify characteristics or tendencies particular to each surgical group, and 2) see how they scored on each of the high-risk clusters of the Patient Attitudes Scale (PAS).

There were differences in the patterns of scoring. Group 1 (cosmetic surgery) scored higher on Clusters 4 (False Beliefs), 5 (History of

Table 3**One-Tailed t-Test: Hypothesis VII**

Patient Attitudes Scale (PAS)				
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Cosmetic (<u>n</u> =33)	52	63	1.260	.1061 ns
Non-Cosmetic (<u>n</u> =32)	49			
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Cosmetic 1a (<u>n</u> =19)	54	49	2.056	.0226
Non-Cosmetic (<u>n</u> =32)	49			
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Cosmetic 1b (<u>n</u> =14)	48	44	-.091	.4641 ns
Non-Cosmetic (<u>n</u> =32)	49			
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Male (<u>n</u> =43)	50	63	.122	.4515 ns
Female (<u>n</u> =22)	50			

Table 4

One-Tailed t-Test: Hypothesis VIII

Surgeon's Risk Rating (SRR)				
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Cosmetic (<u>n</u> =33)	53	63	2.251	.014
Non-Cosmetic (<u>n</u> =32)	47			
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Cosmetic 1a (<u>n</u> =19)	57	49	3.275	.001
Non-Cosmetic (<u>n</u> =32)	47			
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Cosmetic 1b (<u>n</u> =14)	48	44	.369	.357 ns
Non-Cosmetic (<u>n</u> =32)	47			
Groups	Mean	DF	Unpaired t Value	Prob.(1-tail)
Male (<u>n</u> =43)	48	63	-1.991	.025
Female (<u>n</u> =22)	54			

Table 5**Spearman Rank-Order Correlations (one-tailed; N=65)****Patient's Outcome Rating (POR) and Clusters 1-7:**

<u>Correlation with POR</u>	<u>Rho Corrected for Ties</u>	<u>Z Corrected</u>	<u>P</u>
Cluster 1: Impulsivity	.189	1.513	.07 ns
Cluster 2: Inappropriate Expectations	.267	2.136	<.025
Cluster 3: Internal/External Pressures	.150	1.198	.12 ns
Cluster 4: False Beliefs	-.031	-.245	.41 ns
Cluster 5: History of Previous Surgery	.090	.722	.24 ns
Cluster 6: Negative Support System	.486	3.886	<.0005
Cluster 7: Mental/Psychological Factors	.163	1.305	.10 ns

Previous Surgery), 6 (Negative Support System), and 7 (Mental/Psychological Factors) than the non-cosmetic controls comprising Group 2. Sub-group 1a (cosmetic rhinoplasty) scored particularly high on Clusters 5 (History of Previous Surgery), 6 (Negative Support System), and 7 (Mental/Psychological Factors). Sub-group 1b (cosmetic/reconstructive rhinoplasty) scored particularly high on Cluster 4 (False Beliefs). Group 2 (non-cosmetic surgery) scored higher only on Cluster 1 (Impulsivity). Descriptive data representing differences between groups on all seven clusters are presented in Table 6.

Spearman Rank-Order Correlations were additionally performed within individual groups. In Group 1 as a whole ($n=33$), three of the hypothesized correlations (Hypotheses II, III, and VI) were significant. The correlation (Hypothesis IV) between the SOR and POR was non-significant but in the predicted direction. Cluster 6 (Negative Support System) was significantly associated with the Patient's Outcome Rating (POR).

In Sub-group 1a ($n=19$), none of the hypothesized correlations reached significance although the association (Hypothesis II) between the Surgeon's Risk-Level Rating (SRR) and the Patient's Outcome Rating (POR) was in the predicted direction. Likewise, the association between Cluster 6 (Negative Support System) and the POR was non-significant but in the predicted direction. Cluster 7 (Mental/ Psychological Factors) demonstrated a significant negative association with the POR.

In Sub-group 1b ($n=14$) none of the hypothesized correlations reached

Table 6**Descriptive Statistics: Group Patterns of Scoring on Clusters 1-7**

	Sub-Group 1a		Sub-Group 1b		Group 1		Group 2	
	(n=19)		(n=14)		(n=33)		(n=32)	
	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Cluster 1	48	12	47	10	48	11	52	9
Cluster 2	52	9	48	11	50	10	50	10
Cluster 3	50	10	51	13	50	11	50	9
Cluster 4	49	11	54	10	52	11	49	9
Cluster 5	54	11	48	10	52	11	48	9
Cluster 6	56	12	49	10	53	11	47	7
Cluster 7	55	10	48	12	52	11	48	8

Note. Cluster 1 = Impulsivity; Cluster 2 = Inappropriate Expectations; Cluster 3 = Internal vs. External Pressures for Surgery; Cluster 4 = False Beliefs/Misconceptions; Cluster 5 = History of Previous Surgery; Cluster 6 = Negative Support System; Cluster 7 = Mental/Psychological Factors.

significance although, for Hypotheses III and VI respectively, associations 1) between the Patient Attitudes Scale (PAS) and the Surgeon's Risk-Level Rating (SRR), and 2) between the Surgeon's Status Rating (SSR) and the SRR were in the predicted directions. No cluster achieved a significant association with the Patient's Outcome Rating (POR) although correlations between the POR and Clusters 2 (Inappropriate Expectations) and 3 (Internal/External Pressures) were in the predicted directions. Data demonstrating significant associations within Group 1 are presented in Table 7.

For Group 2 ($n=32$), Hypotheses I and II achieved significance in that both the Patient Attitudes Scale (PAS) and Surgeon's Risk-Level Rating (SRR) were positively and significantly associated with the POR. Clusters 2, 6, and 7 were significantly associated with the POR as well. Interestingly, despite scoring high on Cluster 1 (Impulsivity) as a whole, no significant correlation was demonstrated between Cluster 1 and the Patient's Outcome Rating (POR). Data for Group 2 are presented in Table 8.

The Impulsivity Scale (IMS) of Jackson was used in conjunction with the PAS as a coordinate measure of risk for dissatisfaction post-surgery. Spearman rank-order correlations were performed in order to determine the association both between 1) the IMS and Cluster 1 (Impulsivity) of the PAS; and 2) the IMS and the POR. Non-significant inverse correlations were found between the IMS and Cluster 1 not only across the entire cohort but in both Groups 1 and 2 as well. Non-significant inverse correlations were also found between the IMS and the POR in all three groups.

Table 7**Significant Individual Group Correlations: Group 1**

<u>Group 1 (n=33)</u>		
<u>Correlation</u>	<u>Rho Corrected for Ties</u>	<u>P(one-tailed)</u>
SRR:POR (Hypothesis II)	.351	<.025
PAS:SRR (Hypothesis III)	.321	<.05
SSR:SRR (Hypothesis VI)	-.318	<.05
Cluster 6:POR	.386	<.025

<u>Sub-Group 1a: (n=19)</u>		
Cluster 7:POR	-.392	<.05

Sub-Group 1b: (n=14)

No hypotheses or associations between clusters and the POR reached significance.

Note. Cluster 1 = Impulsivity; Cluster 2 = Inappropriate Expectations; Cluster 3 = Internal vs. External Pressures for Surgery; Cluster 4 = False Beliefs/Misconceptions; Cluster 5 = History of Previous Surgery; Cluster 6 = Negative Support System; Cluster 7 = Mental/ Psychological Factors.

Table 8**Significant Individual Group Correlations: Group 2**

<u>Group 2: (n=32)</u>		
<u>Correlation</u>	<u>Rho Corrected for Ties</u>	<u>P(one-tailed)</u>
PAS:POR (Hypothesis I)	.486	<.005
SRR:POR (Hypothesis II)	.366	<.025
Cluster 2:POR	.343	<.05
Cluster 6:POR	.627	<.0005
Cluster 7:POR	.305	<.05

Note. Cluster 1 = Impulsivity; Cluster 2 = Inappropriate Expectations;
Cluster 3 = Internal/External Pressures; Cluster 4 = False
Beliefs/Misconceptions; Cluster 5 = History of Previous Surgery; Cluster 6
= Negative Support System; Cluster 7 = Mental/ Psychological Factors.

Discussion

The object of this study was to establish an economical, empirically-tested instrument, the Patient Attitudes Scale (PAS), for use by surgeons in identifying those patients at risk for dissatisfaction post-surgery. Most cosmetic surgery patients are satisfied with surgical results (Macgregor, 1982; Wright, 1983). The intention, therefore, was to identify that small number of patients, e.g. outliers, whose pre-operative attitudes, motivations, and/or expectations seemed indicative of negative surgical outcome. To do this involved focusing on those variables suggested by the literature as indicative of patient satisfaction/dissatisfaction.

Hypotheses I and II provided measures of predictive validity by correlating pre-operative screening measures (the Patient Attitudes Scale and Surgeon's Risk-Level Rating) with post-operative outcome as measured by the Patient's Outcome Rating. Both hypotheses were confirmed across the entire cohort ($N=65$). The Patient Attitudes Scale (PAS) was slightly more efficient at predicting surgical outcome both across the entire cohort ($N=65$) and with the non-cosmetic controls (Group 2). The Surgeon's Risk-Level Rating (SRR) was predictive of outcome across the entire cohort as well as with both Group 1 (cosmetic) and Group 2 (non-cosmetic patients).

While the PAS and the SRR were significantly associated with each other across the entire cohort, demonstrating concurrent validity for the instrument being developed (Hypothesis III), the SRR was more accurate in predicting risk for the cosmetic patients. One explanation mentioned in

the literature has to do with the intrinsic difference between what can be discerned through a paper and pencil test as compared with a personal relationship. That is, both the "rapport" between patient and surgeon (Wright, 1983, p.13) and the "...effect a given patient had on the surgeon's mood" (Goin et al., 1980, p.442) are cited as predictive of post-operative outcome. A second explanation may be that the surgeons are more wary in general of cosmetic patients and the increased risk of litigation should the outcome be negative. Their risk-level ratings may reflect pre-conceived notions of risk based on the type of surgery being considered. In this study, in fact, pre-operative risk-level ratings by surgeons in the direction of patient dissatisfaction (between 3 and 5 on the SRR rating scale) comprised 68% of SRR scores for patients in sub-group 1a (the pure cosmetic rhinoplasty sub-group) as opposed to 29% for patients in sub-group 1b (mixture of cosmetic and reconstructive rhinoplasty) and 22% for patients in Group 2 (the non-cosmetic controls). This significant difference between groups on the SRR was reflected in t-test results (Hypothesis VIII). Two other points seem relevant: 1) as an independent, objective instrument, the PAS would allow non-high-risk cosmetic patients to be identified and thereby compensate for surgeons being overly wary while, 2) on the other hand, the PAS seems more efficient at screening out high-risk patients amongst the controls, perhaps because the surgeons have a false sense of security about these patients. Finally, and most important, the PAS was a better predictor of dissatisfaction than the SRR for the six patients, statistical outliers, in the total cohort who demonstrated extreme

scores of 4 or 5 on the POR (a measure of dissatisfaction with surgical outcome).

Data on these six patients in comparison with the entire cohort ($N=65$) provides preliminary but revealing information about the nature of risk for dissatisfaction post-operatively. Accordingly, it is important to focus on those variables that were associated with extreme or high scores on the POR. Two of the six patients were in Sub-group 1a (cosmetic rhinoplasty); four were in Group 2 (non-cosmetic surgery). Three of these patients were male; three were female. Given that there were twice as many men as women in the total sample, it was of interest to note that women represented 50% of the dissatisfied group (e.g. were actually twice as likely overall to be dissatisfied as men, the opposite of speculation in the literature). Both genders were identically distributed with one patient coming from the cosmetic and two patients coming from the non-cosmetic groups. The likelihood of dissatisfaction in the cosmetic group was approximately equal between genders. While there were only a small number of extreme scorers, these data indicate that in the non-cosmetic group women were almost four times as likely as men to be dissatisfied.

Four of the six patients in this extreme-score group were older than the mean age of 35, with three of the six being age 50 or older. Five of the six scored an average of 10 points above the mean T score of 50 (raw score = 81) on the PAS. Four subjects out of the six, including both of the cosmetic patients, had lower than average Surgeon's Status Rating (SSR) scores for this population, indicating minor to medium-level presenting

defects. Hypothesis VI had correctly predicted that scores on the SSR would be inversely related to scores on the Surgeon's Risk-Level Rating (SRR) and that was demonstrated here as well: four out of the six extreme scorers had higher than average SRR ratings. All six of these patients had extremely high Patient's Outcome Rating (POR) scores: 19-28 points above the mean of 50 for the entire cohort ($N=65$). Yet, three times out of six the surgeons rated surgical outcome (on the SOR) as achieving the best possible result. Further, two of the remaining three patients were rated as having the second best possible outcome. Only once was the surgery rated as unfavorable in outcome by the surgeon. This points to a difference in surgical expectations between doctor and patient under these special conditions. What the study seems to suggest is that surgeons would do well to take note that patients presenting with minimal defects are likely to be dissatisfied no matter how well the surgery is performed.

The six patients were divided evenly above and below the mean score of 50 on the Impulsivity Scale (IMS) of Jackson. On the other hand, one cosmetic patient and all four controls scored above the mean of 50 on Cluster 1 (Impulsivity). The IMS of Jackson (1974) was not significantly associated with Cluster 1 or any other measure in this study. A reason for this may be that, presented out of its usual context as one of 22 subscales on the PRF-E, the IMS was too obvious and pulled forth responses which were a function of a social desirability response set rather than content. Presented the way that it was in this study, the IMS was inappropriate as a measure of impulsivity.

The Patient Attitudes Scale (PAS) itself was constructed around seven clusters comprising those variables identified as high-risk by the literature. Significant correlations were found between post-operative dissatisfaction as measured by the POR and Clusters 2 (Inappropriate Expectations), and 6 (Negative /Oppositional Support System) across the entire sample. Cluster 6 was significantly associated with the POR in Group 1 (cosmetic surgery) while Clusters 2, 6, and 7 (Mental/Psychological Factors) were significantly associated with the POR in Group 2 (non-cosmetic controls).

The six extreme-score patients demonstrated an association between the POR and an even broader spectrum of clusters on the PAS. In Clusters 1 (Impulsivity), 2 (Inappropriate Expectations), 3 (Internal vs. External Pressures for Surgery), 6 (Negative/Oppositional Support System), and 7 (Mental/Psychological Factors), scores for either 5 or 6 of the patients were above the mean (an average of 5 to 9 points above the mean T score of 50). This tends to support what has already been expressed in the literature by actually finding increased risk in five of the seven areas or clusters cited. Scores on Cluster 4 (False Beliefs) were evenly divided above and below the mean and seemed not to be a significant factor. While data for Cluster 5 (History of Previous Surgeries: Numerous or Unsuccessful) was below the mean for five out of the six patients and not seemingly a factor, the single score that was above the mean was 19 points above and belonged to one of the two cosmetic surgery patients.

The particular focus of this study was those cosmetic surgery patients --e.g. statistical outliers--who were dissatisfied with surgical results.

While there is only a very small amount of data for these patients alone, scores on the following measures/ variables, seem to show risk for dissatisfaction post-surgery: the Patient Attitudes Scale (PAS), the Surgeon's Risk-Level Rating (SRR), the Surgeon's Status Rating (SSR), differences in surgical expectations as evidenced by differences between the Patient's and Surgeon's Outcome Ratings, Cluster 3 (Internal vs. External Pressures for Surgery), Cluster 5 (History of Previous Surgery), Cluster 6 (Negative/Oppositional Support System), and Cluster 7 (Mental/ Psychological Attitudes). The latter was the case for extreme scorers despite the significant inverse association between Cluster 7 and the POR in Sub-group 1a. Out of the analysis of these data, there emerges a profile which surgeons can validly use to identify the at-risk surgical patient.

This was a controlled study which demonstrated both predictive and concurrent validity for the Patient Attitudes Scale (PAS) . It also demonstrated a certain amount of external validity in that 1) consecutive subjects were representative of the patient population of interest for the study and 2) the questionnaire was administered as it would be in actual use.

Limitations of the Study: This was a small pilot study. While there was a significant difference in PAS scores between the pure rhinoplasty sub-group and the non-cosmetic controls (Hypothesis VII), the PAS clearly needs refinement and further study for use with cosmetic patients. An item analysis needs to be completed. Each cluster would profit from an interior relational analysis to establish greater factorial purity. A subsequent

refinement and rewording of questions is necessary. Further, the PAS should be re-directed or weighted towards those areas which the study found to be stronger indicators of risk, especially for extreme scorers and cosmetic patients. These areas include: 1) an actively negative or oppositional personal support system; 2) internal vs. external pressures for surgery, which Wright (1985, p.13) calls "decisional conflicts"; 3) history of mental illness, particularly depression, as well as the presence of recent emotional crises; 4) unrealistic expectations, taking into consideration the differences between patient and surgeon, and 5) misconceptions about one's defect as being major when others evaluate it as being minor to medium.

Finally, no causality can be presumed between any one of these variables or clusters and dissatisfaction post-surgery. This was a correlational study, at best allowing for the determination of relationships between certain variables. Many patients with high PAS scores were satisfied with surgical outcome. Further, Wright (1985) has written: "I recommend that the surgeon out-rightly reject no patient, but rather decide whether to operate, postpone, or refer... and... despite careful counseling, evaluation, and awareness, postoperative problems still occur" (p. 13). Either a surgical complication or an ideally hoped-for surgical result can influence perception of outcome. Additionally, most post-operative dissatisfactions are transient (Wright, 1983). Future study of the Patient Attitudes Scale (PAS) should provide for collection of post-operative data two months rather than one month post-surgery. This would allow more time both for swelling to subside and for transient dissatisfaction to pass.

Surgeons can benefit from having , and do desire, an economical, objective, independent instrument to 1) aid in the decision to perform elective cosmetic surgery, and 2) predict the risk of patient dissatisfaction post-surgery.

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Appendix A

Signed Approval Forms

1) Thesis Proposal Approval Page and 2) Human Subjects Institutional Review Board Approval Form immediately follow this page.

APPROVED BY THE MASTER'S THESIS COMMITTEE

David J. Brown

(Thesis Chairperson)

John S. Kelly

(Thesis Committee member)

Shirley Brownfeldt

(Thesis Committee member)

APPROVED BY THE DESIGN AND ANALYSIS COMMITTEE

L. M. [unclear]

Robert A. [unclear]

**SAN JOSE STATE UNIVERSITY
GRADUATE STUDIES AND RESEARCH**

**HUMAN SUBJECTS INSTITUTIONAL REVIEW BOARD
PROJECT PROPOSAL REVIEW**

Regular Review ☐ Expedited Review ☐ Deadline Date _____

I, the undersigned member of the San Jose State University Human Subjects Institutional Review Board, have reviewed the following proposal submitted to the Board on 4/18/89 by:

PRINCIPAL INVESTIGATOR: Ellen H. Ribner
 PROTOCOL #: 7494 DEPT: Psychology
 PROJECT TITLE: PRE-OPERATIVE PATIENT ATTITUDES AND SURGICAL OUTCOME:
A PILOT STUDY OF ELECTIVE NASAL SURGERY PATIENTS

I recommend the following action (indicate one):

1. Approved for clearance as involving minimal risk to Human Subjects. ☒

2. Approved for clearance with risk to Human Subjects. ☐

3. Approval depends upon the satisfactory completion of the following conditions. _____

4. I have serious concerns about this protocol and it should go before the full committee to review. ☐

Robert L. Lohr, M.D. 4/21/89
 Signature of IRB-HS member Date

5. Not Approved. ☐ Approved. ☒

OFFICIALS SIGNING FOR INSTITUTION

Joni Campbell 5/1/89
 Chair, Human Subjects Institutional Review Board Date

Serena Stanford 5/5/89
 Serena Stanford, Ph.D. Date
 AAVP for Graduate Studies & Research

Please return to: San Jose State University Foundation, One Washington Square, San Jose, CA 95192-0139
 (408) 924-1438

Appendix B

Patient Attitudes Questionnaire**Section I:**

1. Today's date: _____ 2. Your age _____ 3. Sex (M or F): _____
- 4a. Number of elective facial surgeries in past 10 years: _____
- 4b. In general, outcomes have been (check one): ☐ Good ☐ Uncertain
☐ Poor ☐ Doesn't Apply
- 5a. Purpose of surgery desired (check one): ☐ Change nasal appearance
☐ Improve nasal function
- 5b. How long under consideration (specify length of time): _____
-

This scale has been prepared so that you can indicate the extent to which you agree or disagree with the statements listed below. For each one, please mark an X in the box directly above the words which most closely indicate how that statement reflects your feelings, attitude, or personal history.

1. This surgery is for me because I want to look/feel better.

_____ ☐ _____ ☐ _____ ☐ _____ ☐

Strongly Disagree Disagree Neutral Agree Strongly Agree

2. I want the surgery to make my body more perfect.

_____ ☐ _____ ☐ _____ ☐ _____ ☐

Strongly Disagree Disagree Neutral Agree Strongly Agree

3. I just decided that I wanted this surgery.

_____ ☐ _____ ☐ _____ ☐ _____ ☐

Strongly Disagree Disagree Neutral Agree Strongly Agree

4. I feel that my (defect) is totally unacceptable even though some doctors have said that this is a minor problem.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

5. Based on my previous experience with surgery, I have every confidence that I can expect a positive result.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

6. My family/friends actively disapprove of my having this surgery.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

7. I expect this surgery to give me a psychological lift.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

8. I've thought about having this surgery for years.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

9. I'll be satisfied as long as my (defect) is improved, even if it's not made perfect.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

10. My spouse/friend/family member will be the one who will really be pleased with the results of this surgery.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

11. I know whatever my doctor suggests will be best.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

12. I feel that previous surgery was botched up/performed incompetently.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

13. My family/friends are supportive as far as my having this surgery is concerned.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

14. Having this surgery could relieve depressed feelings.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

15. It wasn't until after a recent emotional crisis in my life that I wanted this surgery.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

16. I will be deeply disappointed if the result is not as I imagined it to be.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

17. Having this surgery is my own idea.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

18. I've chosen this doctor because he/she is the greatest surgeon in the world.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

19. I feel uneasy about how my family/friends will respond to my having this operation.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

20. I realize that feelings of unhappiness or inferiority aren't corrected by having surgery.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

21. I feel an urgent need for the surgery now, even though the problem is a long-standing one.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

22. I accept that the results of this surgery might not fully meet my expectations.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

23. If it weren't for the opinions of others, I'd never be considering this surgery.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

24. I'm here because I like the results this surgeon achieved with other people I know.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

25. My family/friends know all about my desire for this surgery.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

26. I've wanted this particular surgery for the longest time, but just couldn't afford it/ wasn't able to plan the time off for it before now.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

27. I'm clear about what defect/problem I want this surgery to correct.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

28. No matter what the cost or inconvenience, I really owe it to my spouse/friend/family to have the surgery.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

29. I know my doctor wouldn't have referred me to anyone but the best.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

30. I haven't spoken to my family/friends about this operation and I wouldn't want them to know beforehand.

☐ ☐ ☐ ☐ ☐
Strongly Disagree Disagree Neutral Agree Strongly Agree

Pre-Operative Patient Attitudes

60

31. I have every reason to believe the surgery will help solve a number of personal problems.

☐	☐	☐	☐	☐
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

If you have had previous elective nasal surgery please answer the following two questions:

32. I need this surgery again because I am dissatisfied with the way it came out last time.

☐	☐	☐	☐	☐
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

33. I've had previous facial surgery with which I was pleased.

☐	☐	☐	☐	☐
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

61-63 Questionnaire

U·M·I

Appendix C

AGREEMENT TO PARTICIPATE IN RESEARCH

SAN JOSE STATE UNIVERSITY

Responsible Investigator: Ellen H. Ribner (M.S.) Candidate

Title Of Protocol: Pre-Operative Patient Attitudes and Surgical Outcome:
A Pilot Study of Elective Nasal Surgery Patients

I have been asked to participate in a research study that is investigating the attitudes of patients electing nasal surgery. The results of this study should further our understanding of the degree to which pre-operative motivations and expectations are predictive of surgical outcome.

I understand that:

- 1) I will be asked to complete a 10-minute self-administered questionnaire either in my surgeon's office or at home. If I complete the questionnaire at home, I will return it in the envelope provided within a period of two days. Following surgery, at the time of my fourth-week post-operative visit, I will be asked to rate my own level of satisfaction with surgical results on a scale from 1 to 5. No name or address will be required on any part of my self-administered questionnaire or rating card; no name or address will be required on any pre- or post-operative data recorded for this study by my surgeon.
- 2) this study presents no risks, discomforts, or inconveniences in that it in no way alters normal pre-operative medical evaluation, surgery, or post-operative care.

- 3) the possible benefits of this study to me are a possible increase in my awareness of my own motivations and/or expectations for surgery.
- 4) the results from this study may be published, but any information from this study that can be identified with me will remain confidential and will be disclosed only with my permission or as required by law.
- 5) any questions about my participation in this study or complaints about the procedures will be answered by Ellen H. Ribner (M.S) Candidate, a San Jose State graduate student working under the supervision of members of the Department of Psychology, (408) 924-5600, or Dwight Goodwin, Ph.D. , (408) 246-6033. For questions and complaints about research subject's rights, contact Serena Stanford, Ph.D. (Associate Academic Vice President for Graduate Studies & Research) at (408) 924-2480.
- 6) my consent is given voluntarily without being coerced; I may refuse to participate in this study or in any part of this study, and I may withdraw at any time, without prejudice to my relations with either SJSU or my surgeon.
- 7) I have received a copy of this consent form for my file.

I HAVE MADE A DECISION WHETHER OR NOT TO PARTICIPATE.
MY SIGNATURE INDICATES THAT I HAVE READ THE
INFORMATION ABOVE AND THAT I HAVE DECIDED TO
PARTICIPATE.

DATE

SUBJECT'S SIGNATURE

INVESTIGATOR'S SIGNATURE

Appendix D

San Jose State University

San Jose California 95192

Department of Psychology

408-924-5600

**SURGEON'S AGREEMENT TO PARTICIPATE IN RESEARCH
SAN JOSE STATE UNIVERSITY**

Responsible Investigator: Ellen H. Ribner (M.S.) Candidate

Research Project: Pre-Operative Patient Attitudes and Surgical Outcome:
A Pilot Study of Elective Nasal Surgery Patients

To Whom It May Concern:

I understand and approve of the general objectives of the above-named research project. My signature indicates that, as a surgeon, I have decided to participate.

DATE

SURGEON'S SIGNATURE

INVESTIGATOR'S SIGNATURE

Appendix E

Type Of Surgery Being Performed:

SURGEON'S PRE-OPERATIVE RATINGS

The two rating scales below have been prepared for use following your first pre-operative consultation as follows:

1. Surgeon's Status Rating: Please grade your patient's presenting nasal condition on a scale from A to F by marking an X in the box directly above the letter grade which most closely indicates your clinical opinion.

Presenting Nasal Condition

	☐	☐	☐	☐	☐	
Minimal	A	B	C	D	F	Major
Defect						Defect

2. Surgeon's Risk-Level Rating: Please estimate your patient's risk-level for dissatisfaction post-surgery on a scale from 1 to 5 by marking an X in the box directly above the number which most closely reflects your pre-operative clinical impression.

Risk-Level For Dissatisfaction Post-Surgery

	☐	☐	☐	☐	☐	
No/ Low	1	2	3	4	5	High-Risk
Dissatisfaction						Dissatisfaction

*Upon Completion Of These Two Scales Please Detach And Return
This Form To Your Reception Desk.*

Appendix F

SURGEON'S OUTCOME RATING: 4th Week Post-Operative Visit

This form has been prepared so that you can grade your patient's surgical outcome on a scale from A to F. Please mark an X in the box directly above the letter grade which most closely indicates your opinion of the outcome of surgery as of the 4th week post-operative visit.

Opinion Of Surgical Outcome

	☐		☐		☐		☐		☐	
Best	A		B		C		D		F	Worst
Possible										Possible
Effect										Effect

Upon Completion Of This Scale Please Return This Form To Your Reception Desk.

Appendix G

PATIENT'S OUTCOME RATING: 4th Week Post-Operative Visit

This rating form has been prepared so that you can indicate your own level of satisfaction/dissatisfaction with surgical results on a scale from 1 to 5. Please mark an X in the box directly above the number which most closely reflects your evaluation as of your 4th week post-operative visit.

Opinion Of Surgical Outcome

	☐	☐	☐	☐	☐	
Extremely	1	2	3	4	5	Extremely
Satisfied						Dissatisfied

*Upon Completion Of This Form Please Seal It In The Envelope Provided
And Return It Directly To The Reception Desk Nurse.*