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From the Department of Psychiatry, Umeå University, Sweden

TRANSSEXUALISM

and

PERSONALITY

*Methodological and Clinical Studies
on Gender Identity Disorders*

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ABSTRACT

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Patients suffering from transsexualism (TS) who apply for sex reassignment surgery (SRS) go through a complex evaluation process before being accepted for treatment. In general, the results from SRS are satisfying. However, further knowledge is needed to clearly delineate transsexualism from other related gender identity disorders (GID) and to improve the selection of candidates for SRS. Personality has for a long time been considered as the key concept for that purpose but systematic studies using reliable instruments are lacking. The present study aims at improving the assessment procedure, validating the concept of transsexualism and studying the outcome of SRS and important prognostic factors.

Two methodological studies deal with the development and validation of two self-report instruments based on DSM-III-R: SCID screen covering Axis II personality disorders/traits and Global Assessment of Functioning (GAF-scale, Axis V). SCID screen diagnoses of personality disorders (PD) were compared with diagnoses from independent structured interviews by means of the SCID-II. The overall kappa in identifying a PD was 0.78 varying from 0.34 to 0.81 for the specific PDs when cut-off was adjusted. When applied to a group of GID-patients SCID screen diagnoses agreed well with clinical diagnoses (kappa 0.77). Self-report of the GAF also proved to be a reliable (overall Pearson $r=0.62$) and useful method and the study lends further support to the validity of Axis V.

In three papers a group of 19 transsexuals was studied by means of a) SCID screen to examine their personality in a dimensional and traditional categorical way, b) the GAF-scale to study psychosocial functioning, c) Structural Analysis of Social Behavior (SASB) to examine self-image and d) Defense Mechanism Test (DMT) to analyze psychological defense structures from a psychodynamic perspective. Patients with atypical gender identity disorders (GIDAANT) and patients with borderline personality disorders as well as healthy subjects were used as contrast groups. Among the transsexuals 10 out of 19 had an additional axis I disorder and 37% had at least one PD, predominantly within cluster B. When analyzed dimensionally according to SCID screen, frequent subthreshold personality pathology was found and biological women fulfilled more axis II criteria than men. TS had less axis I and II pathology compared with GIDAANT and psychiatric patients. According to SASB, TS had a positive self-image with both self-control and spontaneous self and predominating self-love. They appeared significantly more healthy on self-image measures than GIDAANT patients. The DMT revealed a different pattern; TS patients were more disturbed in several areas than patients with borderline personality disorder. TS showed no "emotional investment" and poorer reality orientation in contrast to both healthy controls and the borderline group but shared a similar pregenital pathology with the borderline patients.

Finally, five-year outcome was studied among the transsexuals from a multidimensional approach (e.g. work, interpersonal relations, partnership, subjective opinion) and related to index-measurements on DSM-III-R, SCID screen, GAF, SASB and DMT. Based on combined outcome variables, 68% of the subjects were judged to have improved and 16% had an unsatisfactory outcome. One single case regretted the sex change. SCID screen pathology and SASB disturbances emerged as significant predictors for negative outcome, as well as male biological sex and lack of partnership. It was concluded, that although outcome is in general very favorable, the instruments under investigation, in particular SCID screen and SASB, revealed valuable prognostic information and they are suggested to become part of the future routine assessment of candidates for SRS.

Key words: Transsexualism, Personality, GID, Sex reassignment, Outcome, SCID screen, GAF, SASB, DMT

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*Methodological and Clinical Studies
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Owe Bodlund



1994

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"I see reality but will not accept it...."

(patient quotation)

ABSTRACT

Patients suffering from transsexualism (TS) who apply for sex reassignment surgery (SRS) go through a complex evaluation process before being accepted for treatment. In general, the results from SRS are satisfying. However, further knowledge is needed to clearly delineate transsexualism from other related gender identity disorders (GID) and to improve the selection of candidates for SRS. Personality has for a long time been considered as the key concept for that purpose but systematic studies using reliable instruments are lacking. The present study aims at improving the assessment procedure, validating the concept of transsexualism and studying the outcome of SRS and important prognostic factors.

Two methodological studies deal with the development and validation of two self-report instruments based on DSM-III-R: SCID screen covering Axis II personality disorders/traits and Global Assessment of Functioning (GAF-scale, Axis V). SCID screen diagnoses of personality disorders (PD) were compared with diagnoses from independent structured interviews by means of the SCID-II. The overall kappa in identifying a PD was 0.78 varying from 0.34 to 0.81 for the specific PDs when cut-off was adjusted. When applied to a group of GID-patients SCID screen diagnoses agreed well with clinical diagnoses (kappa 0.77). Self-report of the GAF also proved to be a reliable (overall Pearson $r=0.62$) and useful method and the study lends further support to the validity of Axis V.

In three papers a group of 19 transsexuals was studied by means of a) SCID screen to examine their personality in a dimensional and traditional categorical way, b) the GAF-scale to study psychosocial functioning, c) Structural Analysis of Social Behavior (SASB) to examine self-image and d) Defense Mechanism Test (DMT) to analyze psychological defense structures from a psychodynamic perspective. Patients with atypical gender identity disorders (GIDAANT) and patients with borderline personality disorders as well as healthy subjects were used as contrast groups. Among the transsexuals 10 out of 19 had an additional axis I disorder and 37% had at least one PD, predominantly within cluster B. When analyzed dimensionally according to SCID screen, frequent subthreshold personality pathology was found and biological women fulfilled more axis II criteria than men. TS had less axis I and II pathology compared with GIDAANT and psychiatric patients. According to SASB, TS had a positive self-image with both self-control and spontaneous self and predominating self-love. They appeared significantly more healthy on self-image measures than GIDAANT patients. The DMT revealed a different pattern; TS patients were more disturbed in several areas than patients with borderline personality disorder. TS showed no "emotional investment" and poorer reality orientation in contrast to both healthy controls and the borderline group but shared a similar pregenital pathology with the borderline patients.

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Key words: Transsexualism, Personality, GID, Sex reassignment, GAF, SCID screen, Outcome

LIST OF ORIGINAL PAPERS

The thesis is based on the following papers, which are presented in a logical rather than a chronological order. The studies are referred to in the text by Roman numerals:

- I Ekselius L, Lindström E, von Knorring L, Bodlund O and Kullgren G.** SCID II interviews and the SCID screen questionnaire as diagnostic tools for personality disorders in DSM-III-R. *Acta Psychiatrica Scandinavica* 1994; 90: 120–123.
- II Bodlund O, Kullgren G, Ekselius L, Lindström E and von Knorring L.** Axis V– Global assessment of functioning scale. Evaluation of a self-report version. *Acta Psychiatrica Scandinavica* 1994; 90: 342–347.
- III Bodlund O, Kullgren G, Sundbom E and Höjerback T.** Personality traits and disorders among transsexuals. *Acta Psychiatrica Scandinavica* 1993; 88: 322–327.
- IV Bodlund O and Armelius K.** Self-image and personality traits in Gender Identity Disorders: An empirical study. *Journal of Sex & Marital Therapy* 1994; 20 (4): 303–317.
- V Sundbom E, Bodlund O and Höjerback T (1993).** Object relations and defensive operations in transsexuals and borderline patients as measured by the Defense Mechanism Test. *Manuscript* 1993.
- VI Bodlund O and Kullgren G.** Transsexualism–General outcome and prognostic factors. A five year follow-up study of 19 transsexuals in the process of changing sex. *Archives of Sexual Behavior*, accepted 940909.

ABBREVIATIONS

APA	American Psychiatric Association
BPD	Borderline Personality Disorder
DMT	Defense Mechanism Test
DSM–III–R	Diagnostic and Statistical Manual. 3rd ed., revised
GAF	Global Assessment of Functioning
GBI	Global Index
GID	Gender Identity Disorder
GIDAANT	Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual Type
ICD–9	International Classification of Diseases, 9th ed., revised
LEAD	Longitudinal Expert Evaluation Using All Data
MMPI	Minnesota Multiphasic Personality Inventory
PD	Personality Disorder
PDE	Personality Disorder Examination
PDQ	Personality Diagnostic Questionnaire
SASB	Structural Analysis of Social Behavior
SCID	Structured Clinical Interview for DSM–III–R
SCID–II	Structured Clinical Interview for DSM–III–R, Personality Disorders
SIDP	Structured Interview for Disorders of Personality
SRS	Sex Reassignment Surgery
TS	Transsexual, Transsexualism

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INTRODUCTION

TRANSSEXUALISM

Background

Transsexualism and sex reassignment surgery (SRS) are issues that have stirred up much controversy over the years. Among psychiatrists in western countries there has been consensus about diagnostic criteria and treatment alternatives only for the last decade. However, the boundaries between different gender identity disorders (GID) are still debated. Are they separate conditions or different stages on a continuum, and do GID-patients other than transsexuals also benefit from SRS? The controversy concerning transsexualism and its treatment is easy to understand. It is a psychologically provocative phenomenon – at least for the layman. In addition, sex reassignment treatment is one of the medical interventions that most radically influences the patient's social, psychological and somatic functioning.

The earliest description of the disorder was given by a German, Friedreich in 1830 and in 1910 Hirschfeldt titled it "transvestism". That concept was a descriptive one indicating a wish to wear the clothing of the opposite sex. Underlying motives were not taken into consideration. The term transsexualism was coined by Cauldwell (1949), but its use to designate individuals desiring a transformation into the opposite biological sex was established through the work of Benjamin (1954, 1964, 1966), Wålinder (1967), Stoller (1968) and Green and Money (1969). Since the seventies, the diagnostic label transsexualism defines a person who not only wants to dress as the opposite sex, but also has an underlying feeling of having been born into the wrong sex. The person has both an aversion for his or her biological sex characters and an intense desire to live permanently in the opposite sex role. The person is also eager to undergo surgery to produce a bodily character corresponding to the opposite sex and to change the officially registered sex.

Earlier descriptions of these phenomena were based on mere speculations, single case reports, and theoretical discussions, whereas during the last two decades more empirically oriented studies have been published.

In 1974 Fisk introduced the term gender dysphoria which implies only that a person has an intense experience of a gender identity which does not correspond to his or her biological sex. This concept is broader than transsexualism and also includes transvestism and homosexual conditions with gender identity problems. In later psychiatric diagnostic systems such as DSM-III-R (APA, 1987) and DSM-IV (APA, 1994), different syndromes with gender dysphoria are again separated.

Throughout the years the treatment of transsexualism has been a matter of controversy. Clinicians who recommend sex reassignment surgery as the treatment of choice tend to believe that psychotherapy with gender dysphoric patients is useless. To support their view they cite follow-up studies showing positive results from surgery. On the other hand, there are clinicians who consider sex reassignment surgery to be an illegitimate form of treatment and characterize it as mutilative and antitherapeutic. They emphasize the complex psychological, medical, legal, bioethical and political issues that are neglected in sex reassignment surgery. Studies indicating that psychotherapy can successfully stabilize the gender dysphoric patients lend further support to these authors' approach. Lothstein has presented an extensive review of this controversy (1980).

Sturup (1976) and Meyer & Reter (1979) challenged the idea that SRS was a "cure" for transsexualism, by claiming that gender dysphoric patients had severe psychopathologies that were unaltered by SRS. As a compromise, it was recommended that transsexuals should receive preoperative and postoperative counseling or psychotherapy.

In 1985 the Harry Benjamin Association published "Standards of care: The hormonal and surgical sex reassignment of gender dysphoric persons". This document is still the guideline for professionals in the field.

Today, patients who are approved by professionals and the authorities for sex reassignment are treated according to "standards of care" in a similar way in many western countries. They have to fulfill diagnostic criteria for transsexualism according to the DSM system and pass through an observation period of about two years where they live in the opposite sex role ("real life test"). Pre- and postoperative psychiatric counseling or psychotherapy should be offered. The observation period is then followed by hormonal treatment with androgens to females and estrogens and/or progesterons to genotypic males. The next step is the surgical sex reassignment. This includes e.g. mastectomy, hystero-salpingo-oophorectomy and phalloplasty for female to male transsexuals (F-M) and castration, penectomy and vagino- and mammoplasty for M - F transsexuals.

Clinical characteristics

In young children, transsexualism is manifested by a general discomfort about the assigned sex. In older children and adolescents, failure to develop age appropriate relationships within their same sexed peers often leads to isolation and distress. Preoccupation with cross gender wishes often interferes with everyday activities. Interpersonal difficulties are common and functioning at school is often impaired.

Isolation and ostracism might contribute to low self-esteem, school aversion and dropping out. Later on in adulthood concurrent personality disturbance, anxiety

and depression are prevalent (Lothstein, 1984; Stoller, 1985), frequently attributed to the inability to live in the assigned sex role.

Adults with transsexualism are characterized by their preoccupation with a wish to adopt the social role of the opposite sex and to acquire the physical appearance through hormonal or surgical manipulation. With cross-dressing and hormonal treatment many of these patients may pass convincingly as the other sex. Sexual activity with a same-sex partner is generally constrained since he or she is not allowed to see or touch the patient's genitals.

Once established, transsexualism is generally a stable phenomenon. Two subtypes, characterized by different courses can be identified among males with GID. One has an onset in childhood, and is in some studies referred to as primary transsexualism (Stoller, 1985; Burns et al., 1990). In the other subtype, secondary transsexualism, the more overt signs of cross gender identification appear later and more gradually and are often associated with transvestic fetishism. Cross gender identification is more fluctuating in secondary transsexualism and these men are also more likely to be sexually attracted to women, and feel more ambivalent, and are less likely to be satisfied after SRS (Lundström, 1981). Transsexuals of both sexes are in general attracted to same-sex partners, i.e. psychologically heterosexual attraction.

Differential diagnoses

A related disorder is *Transvestic fetishism* which occurs in heterosexual (or bisexual) men for whose the cross-dressing behavior has the purpose of sexual excitement. Most of them do not have a history of childhood cross gender behavior. Male patients with both gender dysphoria and transvestic fetishism can (in DSM-III-R and DSM-IV) be labeled both as GID or transvestites. The diagnosis *GID not otherwise specified* can be used for individuals with concurrent congenital intersex conditions.

Gender Identity Disorder of Adolescence or Adulthood, Nontranssexual type (GIDAANT, DSM-III-R) is also a closely related concept, synonymous with transvestic fetishism with gender dysphoria in DSM-IV. GIDAANT is defined by persistent discomfort with the assigned sex but no persistent desire to change primary or secondary sex characteristics. Most individuals with GIDAANT are heterosexual males. Some have previously experienced sexual arousal in cross-dressing and others are homosexuals who cross-dress. GIDAANT is probably more prevalent than transsexualism and rather common among female impersonators.

Transvestic fetishism is differentiated from GID by the purpose of the cross-dressing – to achieve sexual excitement or not. In some cases cross-dressing becomes an antidote to anxiety or depression by contributing a sense of peace and

calm. In other individuals, gender dysphoria may emerge and lead to a desire to permanently live in the opposite gender role, i.e. GIDAANT evolves into transsexualism (Burns et al., 1990).

In DSM-III-R (APA, 1987) the criteria for transsexualism are:

- A *Persistent discomfort and sense of inappropriateness about one's assigned sex*
- B *Persistent preoccupation for at least two years with getting rid of one's primary and secondary sex characteristics and acquiring the sex characteristics of the other sex*
- C *The person has reached puberty*

In DSM-IV (APA, 1994) the term transsexualism is abandoned and instead all above mentioned conditions are simply labeled as Gender Identity Disorder. GID is characterized by:

- A *A strong and persistent cross-gender identification*
- B *Persistent discomfort with his or her sex or sense of inappropriateness in the gender role of that sex*
- C *The disturbance is not concurrent with a physical intersex condition*
- D *The disturbance causes clinically significant distress or impairment in social, occupational or other important areas of functioning*

In adolescents and adults the disturbance is manifested by symptoms such as a stated desire to be the other sex, frequent passing as the other sex, desire to live or be treated as the other sex, or the conviction that he or she has the typical feelings and reactions of the other sex. The patient should be preoccupied by getting rid of primary and secondary sex characteristics, such as request for hormones, surgery etc., or that the patient has the belief that he or she was born with the wrong sex.

Obviously, there is in DSM-IV still uncertainty about the boundaries between gender identity disorders (transsexual type) and transvestic fetishism. Transvestic fetishism can, according to DSM-IV criteria, be accompanied by the absence or presence of gender dysphoria, but still be labeled as transvestic fetishism. The demarcation between the disorders remains unclear.

Epidemiology

Estimating the prevalence of different gender identity disorders is a difficult task. It is assumed that transvestic fetishism and GIDAANT are more prevalent than genuine transsexualism. The degree to which transsexuals are identified in a society is largely influenced by attitudes, legal rights, and availability of medical treatment. Reported prevalence rate represents thus only minimum values or "treated prevalence". In Sweden all transsexuals in the process of sex reassignment are known by the authorities and the psychiatric care system. One requirement for legal sex reassignment is that the patient has been assessed by a psychiatrist with special authorization.

The prevalence in USA was estimated by Pauli (1968) to be 1:100 000 for M-F and 1:400 000 for F-M transsexuals. Wålinder (1968) calculated the prevalence rates for Sweden to be 1:37 000 for M-F and 1:103 000 for F-M transsexuals. Similar figures have been presented by Hoenig and Kenna (1974) from England. In a study from the Netherlands by Eklund et al. (1988) the prevalence for M-F was reported to 1:18 000 and for F-M transsexuals 1:54 000. The authors concluded that the prevalence figure had increased since 1980, which was interpreted as due to a lower threshold to apply for medical treatment. In a recent study by Bakker et al. (1993), also from the Netherlands, the prevalence was reported to be even higher – for biological men 1:11 900 and for women 1:30 400.

Obviously, sex ratios also differ between studies and countries, but a male:female ratio of about 3:1 is generally observed.

In Sweden, about 10–15 individuals per year are approved for sex reassignment. More men than women apply for SRS but a large proportion of them are excluded, mostly due to diagnostic heterogeneity. The selection procedure leads finally to an equal sex ratio, when it comes to approval for SRS.

Assessment and selection for SRS

In Sweden applicants for SRS are assessed by a few authorized psychiatrists and psychologists who are well acquainted with the medical, psychological and legal problems related to gender identity disorders. The patient has to be at least 18 years old and fulfill diagnostic criteria for transsexualism according to DSM-III-R. Fetishistic transvestites are in general not accepted for SRS. Other exclusion criteria are psychotic symptoms, severe personality disorders, drug abuse and other sexual disorders such as homosexuality and exhibitionism. Candidates must have the intellectual and emotional capacity to cope with the stress that a sex change will imply. During an observation period of two years (real life test) the person must be able to cope with living in the opposite sex role despite the fact that the bodily characters does not correspond to their psychological and social

gender identity. The applicant must not show ambivalence about changing sex and have an acceptable social functioning. During this selection process at least half of the applicants are excluded for different reasons. In general, they are also assessed by structured and semistructured interviews and psychometric testing including IQ-test, MMPI, and projective tests like the Rorschach or DMT. A physical examination is performed including EEG, blood chemistry, hormonal and genetic screening. During the observation period, counseling and/or psychotherapy on a regular basis is frequently offered to give the applicants an opportunity to scrutinize their motives for SRS and to be supported in their efforts to live in the desired sex role. This procedure allows the applicant to regret and interrupt the process before irreversible medical interventions have been initiated. This way of handling transsexuals applying for SRS is mainly in accordance with the "standards of care", suggested by the Harry Benjamin Association (1985).

If the psychiatrist concludes that the applicant fulfills criteria for genuine transsexualism and if there is no severe contraindication, the application for SRS is put forward to the National Board of Health and Welfare which takes the formal and final decision. The succeeding treatment is free of charge. In Sweden, the majority of patients approved for SRS correspond to the subgroup within gender identity disorders called core or primary transsexuals.

Outcome of sex reassignment and prognostic factors

Sex reassignment treatment is a multidimensional procedure of which sex change surgery is only one part. Psychosocial, legal, and other medical interventions are equally important and assessment of treatment results and outcome must include the subjective experience and objective evaluation according to all dimensions. Considering this complexity, it is not surprising that outcome studies are often flawed by methodological shortcomings.

Kuiper and Cohen-Kettenis (1988) proposed that the most important factor in assessing the outcome is the subjective well-being of the patient, as gender dysphoria always bears with it a feeling of malaise. Subjective well-being is included in the concept of "quality of life" which was brought to the fore during the 1980's in connection with the cost benefit analyses of different forms of treatment. In general, only a minority, about 10 % (Brown, 1990), of the treated patients around the world have been followed up, at this juncture.

Follow-up studies of sex reassigned patients from the last two decades conclude in general that overall outcome has improved over the years to the degree that about 80 % of the patients are satisfied and only 2 % regret their sex change (Wålinder and Tuwe 1975; Sörensen, 1981; Blanchard et al. 1989; Mate-Kole et al. 1990). Lundström et al. (1984) summarized in a review article that 71–88 % of male transsexuals had a satisfactory outcome. According to Pauly (1981), Wålinder and Thuwe (1975) and Kokott and Fahrner (1988) the outcome of sex

reassignment is consistently better in F-M compared to M-F transsexuals, despite the fact that surgical results are more beneficial for M-F transsexuals. Social functioning, psychological adjustment and the quality of relationships with partners and siblings are slightly better for sex reassigned biological women than for biological men. F-M transsexuals establish stable partnerships more frequently solely with the same biological sex and are more satisfied sexually. At follow-up, M-F transsexuals are as socially integrated as their F-M counterparts, but the differences in partnership behavior are not altered as a result of surgery. Male transsexuals, in general, have difficulties in social integration, but they also become more sexually satisfied after sex reassignment.

Furthermore, F-M transsexuals are, as stated above, significantly more often engaged in stable partnerships comparable to traditional partnerships, and more frequently than M-F transsexuals, informed their partners about their transsexuality. Contrary to expectations, these differences in partnership persist after surgery in spite of the common conception that SRS improves the condition for penis-vagina intercourse for M-F transsexuals compared to F-M transsexuals who usually lack a neophallus. According to Kocott and Fahrner (1988) this might depend on gender differences that can be conditioned by behavioral patterns which are partly genetic in origin and partly acquired during the development of the individual.

Hunt and Hampson (1980) assessed 17 male transsexuals on average eight years after surgery and found that 60 – 70 % had improved or remained at a high level of functioning. There were modest gains in socio-economic status and relationships, and no changes were seen regarding levels of psychopathology or in MMPI scores. The authors used the "standardized rating format for post-surgical transsexuals" and concluded that the individual's adjustment before surgery best predicted outcome and that sex change did not change personality.

Lothstein (1982) also emphasizes that even if sex reassignment surgery can give the transsexual person new genitals, it cannot bring the patient a man's or a woman's personal history or development.

In these studies, poor outcomes are often connected with atypical cases such as gender dysphoric transvestites with or without fetishism, concomitant personality disorders, lack of social and psychological support, and especially for F-M transsexuals also surgical shortcomings and complications. Wålinder et al. (1978) added that high age at onset and inappropriate physical build are risk factors for poor outcome.

Factors predicting positive outcome after sex reassignment are not fully known, but there are indications that female sex, early onset, high level of social functioning before surgery and stable personality are factors of importance. Restricted inclusion criteria and supportive programs are additional factors essential for a favorable outcome. The quality of partnerships and the ability to achieve a satisfactory sex life without functional genitalia also seem vitally

important. In summary, positive outcome depends on more factors than solely a good surgical match.

In Sweden, there is a law since 1972 institutionalizing sex reassignment for transsexualism and altogether about 200–250 individuals have undergone sex reassignment treatment. Four Swedish follow-up studies have been published providing information on about 50 of these individual cases (Hertz et al., 1961; Wålinder and Thuwe, 1975; Lundström, 1981; Lindemalm et al., 1986). The Swedish reports are in accordance with international follow-up studies. They share the same shortcomings such as too short follow-up periods, high drop-out rates, and lack of reliable assessment methods.

Despite continuous and significant advances in selection procedure and treatment methods, the sex reassignment treatment for transsexualism does not fully solve the conflict between mind and body. Incomplete results from somatic therapeutic interventions and social stigmatization might contribute to remaining difficulties. However, SRS is still the treatment of choice for transsexualism and the best available alternative for the individual and the society.

PERSONALITY AND TRANSSEXUALISM

Personality traits and disorders in general

Personality disorder is in DSM–III–R defined as: *a pattern of behavior or traits that are characteristic of the person's recent and long-term functioning, generally since adolescence or early adulthood. The constellation of behaviors or traits causes either significant impairment in social or occupational functioning or subjective distress.* The concept of personality refers to an individual's way of being, thinking, reacting and behaving and the definition underlines the fundamentals of the concept: early onset, pervasiveness, interpersonal focus, and the general criterion describing impairment in social functioning.

The separate axis II in DSM–III–R comprises personality disorders defined by diagnostic criteria. Personality disorders are organized as clinical entities. A specified number of fulfilled criteria results in a personality disorder diagnosis.

The personality disorders are organized in three clusters based on common characteristics. The division into three separate clusters has been partly supported by factor analysis (Zimmerman and Coryell, 1990; Ekselius et al., 1994). Cluster A consists of paranoid, schizoid and schizotypal personality disorders. It is defined by features such as constricted emotions, reduced range of affect, mistrust of others and social withdrawal. In cluster B, antisocial, borderline, histrionic and narcissistic personality disorders are included. The common features within this

cluster are dramatic, emotional, and impulsive traits. Cluster C includes avoidant, dependent, obsessive-compulsive, and passive-aggressive personality disorders, all characterized by features of anxiety and fearful behavior.

A controversial issue is whether personality should be regarded as a dimensional phenomenon where the personality disorder represents an extreme variant of normal personality or as separate categories, i.e. psychopathological entities that can be quantitatively discriminated from normal personality. The categorical approach is advocated by among others Gunderson (1992). On the other hand, Costa and McCrae (1990) and Trull et al. (1990) argue for the dimensional model, claiming that there is more empirical support for that approach. Personality traits can be visualized by displaying the proportion of fulfilled criteria for each personality disorder category, creating a personality profile as shown by Bodlund et al. (1993). The boundaries between normal and abnormal personality styles and between the different personality disorders are to a large extent arbitrary. There have been suggestions that personality disorders should be placed along a spectrum of pathology. For instance, the schizotypal personality disorder has been regarded as belonging to a schizophrenic spectrum, the borderline personality disorder to an affective spectrum and avoidant personality disorder to an anxiety spectrum (Widiger et al., 1988).

In several studies (Zimmerman and Coryell, 1990; Nestadt et al., 1991; Ekselius et al., 1993) the authors have not been able to demonstrate any tendency towards a bimodal distribution or point of rarity to support a categorical viewpoint. The argument for a categorical approach is mainly a "psychological" one. Clinicians tend to rely on categories in diagnosing due to tradition and since categories are more easily communicated (Widiger, 1993).

Prevalence of personality disorders

Epidemiological surveys based on clinical interviews have yielded prevalence estimates of personality disorder in the general population, varying between 0.1 % and 13 % (de Girolamo and Reich, 1993; Samuels et al., 1994). The most common estimate is around 10%. Life-time expectancy of developing a personality disorder is about 5.2 % (Helgason and Magnusson, 1989). There is also evidence that the prevalence of personality disorders varies between different age-groups, with a tendency to decrease in older ages. There are also sex differences for specific personality disorders.

The least frequent personality disorders in the general population seem to be paranoid, schizoid, narcissistic, passive aggressive, and avoidant personality disorders. Histrionic personality disorder has a reported prevalence of 1-3 %, equally distributed between men and women (Nestadt et al., 1990). Borderline personality disorder was found by Swartz et al. (1990) at a frequency of 1.8 %, significantly more frequent among women with the highest rates in the age group

of 19–34 years. In psychiatric populations, 15–25 % of the patients have a borderline personality disorder, making it the most common personality disorder (Gunderson, 1989; Kullgren, 1992). Prevalence of antisocial personality disorder in the general population is estimated at 2–3 % with a sex ratio (M:F) of 5:1 (Regier et al., 1988). Reich et al. (1989) found an overall prevalence for personality disorders in a community sample of 11.1 % when using a self-report instrument, compared to studies stating that personality disorders in a psychiatric population are as prevalent as 60–80 % (Reich, 1987; Alnaes and Torgersen, 1990). In a recent study by Bodlund et al. (1993) the prevalence of personality disorders was found to be 49.2% in a psychiatric outpatient sample. No significant sex or age differences could be demonstrated.

In psychiatric populations multiple personality disorder diagnoses are frequent as well as comorbidity between axis I and II disorders. Oldham et al. (1992) and Bodlund et al. (1993) reported around three personality disorders in every patient who had at least one. Several studies support the view that a personality disorder has a negative effect on course and response to treatment of a concomitant axis I disorder. Overall, it is clear that axis I and II disorders mutually influence each other (Hirschfeldt et al., 1983; Reich et al., 1987; Zimmerman 1994).

Diagnostic methods

Interrater reliability in clinical diagnosing of personality disorders is low. The introduction of the specific criteria sets in DSM-III-R has markedly increased reliability (Spitzer et al., 1979; Skodol and Spitzer, 1982). In addition, structured interviews have been developed such as the SCID-II. There are also self-report versions, like the SCID screen (Spitzer et al., 1987) and the Personality Diagnostic Questionnaire (PDQ) by Hyler et al. (1987).

Personality traits and disorders in transsexualism

In an alternative theoretical framework, transsexualism could be regarded as a personality disorder itself. Transsexualism fulfills the general criterion (persistence since childhood, subjective distress, and psychosocial impairment) and the etiology of transsexualism can be understood in the same way, i.e. being multifactorial with both biological, genetic and environmental factors contributing to the development of the disorder. Transsexualism and personality disorders also share features of relative persistence and resistance against psychological interventions. However, the DSM-system has chosen to label transsexualism as an axis I syndrome.

Most follow-up studies on transsexualism mention that personality factors are essential for the course and outcome of sex reassignment. However, there are few studies which systematically address this issue and the findings are not consistent.

There are good reasons to take the personality characteristics into account, since the transsexual patients' ability to cope with different major changes during the sex change process is crucial for the prognosis, i.e. objective and subjective psychosocial functioning after sex reassignment (Bodlund et al., 1991). Tsoi (1990) pointed out that the personality structure in a psychodynamic framework is neurotic in transsexuality as measured by the Rorschach test. Other authors like McDougall (1980, 1985) claimed that gender identity disorders from a theoretical point of view should be regarded as psychotic and/or borderline disturbances in personality organization. Lothstein (1984) and Murray (1985) stated that male transsexuals resemble a sub-group of a wider borderline personality category in psychological testing. Murray found that a group of male borderline patients and transsexuals did not differ on a number of Rorschach dimensions. Beatrice (1985) suggested a dimension of progressive feminization (i.e. transvestites, preoperative transsexuals and postoperative transsexuals), which he found positively related to progressive levels of psychological dysfunction on MMPI. The two transsexual groups were more disturbed than the transvestite group. Beatrice also concluded that the two transsexual groups did not differ from normal controls on a measure of self-acceptance. The patient groups also seemed to function well in society according to their income and educational level. Fleming et al.(1984) found no difference in ego functioning in F-M transsexuals nor in their partners compared to normal controls.

On a descriptive level, transsexuals reveal a rather disturbed picture when projective tests as Rorschach and DMT are used and a more normal pattern when self-ratings and measures of social functions are used (Brems et al., 1993; Lothstein, 1984).

In the literature, there is a striking diversity in findings concerning personality factors in transsexualism. However, most clinicians seem to agree, probably on the basis of common sense and clinical experience, that personality factors discriminate between different gender identity disorders and represent crucial prognostic factors for the course and outcome of sex reassignment.

AIMS OF THE STUDY

The primary aim of the thesis is to increase to the body of knowledge about transsexualism, with special reference to personality traits and disorders, self-image and psychological defense strategies. Another aim is to develop and evaluate personality inventories useful in diagnosing gender identity disorders, in predicting course and outcome, and in selecting candidates for SRS.

The more specific aims of the present studies are the following:

- To investigate concurrent psychopathology on axis I, II and V according to DSM-III-R among transsexual patients and atypical gender dysphoric patients in order to identify discriminant factors between the disorders and to contribute to improved criteria sets for selection of candidates for SRS (Papers III, IV, VI).
- To examine outcome after five years in the process of sex reassignment and to evaluate personality pathology, self-image, and psychological defenses as predictive factors for outcome (Paper VI).
- To investigate psychological defenses according to a projective test (Defense Mechanism Test, DMT) among transsexuals (Paper V).
- To evaluate a self-report questionnaire (SCID screen) as a diagnostic tool for DSM-III-R personality traits and disorders (Papers I, III, IV).
- To examine the validity and usefulness of the GAF scale and a corresponding self-report version with special reference to the assessment of transsexual patients (Papers II, III, IV, VI).

METHODS

Subjects

Patients and control groups included in the studies are described in Table 1. In studies III–VI concerning GID patients, the number of probands varies slightly as regards transsexuals. Sixteen out of the total group of 19 transsexuals are identical in all four studies. One biological female transsexual in study III was later on redefined as having a delusional syndrome and was excluded from subsequent studies. In the follow-up study (Paper VI), one male transsexual was added due to a revaluation of one patient who in adolescence was wrongly diagnosed as a fetishistic transvestite but later on proved to be a genuine transsexual. In study V only 16 transsexuals participated due to difficulties in performing the DMT.

All three control groups (SCID screen, SASB, DMT) consisted of healthy subjects who were either working or studying. Most of them were students at the nurses college or at the university.

Recruitment of patients with gender identity disorders for this study was performed by two of the authors (O.B. and T.H.) who are both responsible for assessment of all patients applying for SRS in two regions of Sweden (Umeå and Malmö–Lund, respectively). The transsexuals represent the total population of all known individuals undergoing sex reassignment in the two regions. All patients included in these studies had given informed consent to participate. The present investigation has been approved by the Ethics Committees of Umeå, Lund and Uppsala Universities.

Table 1. Description of patients and control groups in each study.

Study	N	Males/ Females	Age /(range)	Diagnoses (DSM-III-R)/ Control groups
I	69	20/49	41.0 (19–70)	Psychiatric in- and outpatients: Adjustment disorder (9) Mood disorder (19) Anorexia nervosa (4) Schizophrenic disorder (10) Somatoform pain disorder (27)
II	73	27/46	32.1 (19–61)	Psychiatric outpatients: Anxiety disorder (19) Mood disorder (14) Adjustment disorder (13) Eating disorder (9) Other axis I disorders (13) Personality disorder (5)
III	19	9/10	33.4 (19–54)	Transsexualism
	133	52/81	31.0 (19–54)	Healthy controls (SCID screen)
IV	18	9/9	35.0 (19–54)	Transsexualism
	11	9/2	33.0 (23–51)	GIDAANT
	52	24/28	33.0 (20–56)	Healthy controls (SASB)
	133	52/81	31.0 (19–54)	Healthy controls (SCID screen)
V	16	8/8	35.3 (19–54)	Transsexualism
	9	6/3	28.3 (21–38)	Borderline personality disorder
	16	8/8	24.0 (20–26)	Healthy controls (DMT)
VI	19	10/9	33.4 (19–54)	Transsexualism

Instruments

Clinical diagnoses on axis I and II were made in all studies by the authors according to DSM-III-R. Diagnoses were based on all available information such as diagnostic interviews and clinical records. In Papers II, III, and IV, clinical diagnoses were, in order to improve reliability, organized in 4–5 groups: adjustment, affective, anxiety, psychotic and other axis I diagnoses such as eating disorder or substance abuse. Axis II diagnoses were for similar reasons in studies II, III, IV and VI classified as cluster A, B, C or atypical personality disorder.

Clinical diagnoses were made by the researchers independently from the patients' self reports.

Axis V assessments according to DSM-III-R in studies II, III, IV, and VI were made according to the **GAF scale**. The GAF score is a global measure indicating the social and occupational functioning level and the degree of subjective distress. In study II a **self-report version of the GAF scale** was used. The GAF self-report version was developed by the authors and consists of the original 0–90 points scale but with fewer defining characteristics than in the original version. GAF evaluations were made in accordance with the original instruction for axis V.

SCID Screen Questionnaire was used in all studies except study V (Table 2). The SCID screen is a self report questionnaire (Spitzer et al., 1987) translated into Swedish by Herlofson. The questionnaire was originally designed for use as a screening instrument to form a basis for the SCID-II interview by identifying areas to be further explored in the subsequent interview.

The original SCID screen does not include items regarding adult antisocial personality disorder. In a modification made by von Knorring (Paper I), questions concerning adult antisocial personality disorder were included based on the questions in the SCID-II interview. The modified version of the SCID screen includes 124 yes or no questions, reflecting 103 corresponding axis II criteria in the SCID-II interview. However, in DSM-III-R some criteria are common to several personality disorders and thus, in fact, more than 103 criteria are covered. Criteria related to observed behavior (included in schizoid, schizotypal, and histrionic personality disorders) are not covered by the SCID screen and accordingly these criteria have to be omitted. Consequently, the frequency of personality disorders with observation criteria may be expected to be underestimated when the self-report questionnaire is used as a single diagnostic tool.

All patients who completed the SCID screen questionnaire were instructed to answer the questions focusing on the last years – i.e. not only their present state. The SCID screen was used for categorical diagnosis as well as dimensional scoring of personality traits. The percentage of fulfilled axis II criteria for each personality disorder was used to create personality profiles for the individual and for different groups. The total load of fulfilled criteria in SCID screen is called GBI (Global Index).

The Structured Clinical Interview for DSM-III-R Personality Disorders (SCID-II) was developed by Spitzer et al. (1987) and has been translated into Swedish by Herlofson. The interview covers the eleven axis II disorders plus self-defeating personality disorder from the appendix to DSM-III-R. It starts with a set of overview questions and then systematically covers each criterion of the personality disorders in turn. The interviewer is instructed to ask additional questions to clarify ambiguous responses from the patient, although clarifying questions are not specified. Based on the patients' answers, the interviewer makes a clinical rating of each personality criterion. The scoring categories are: 1 = the criterion is absent, 2 = the criterion is doubtful (subthreshold), 3 = the criterion is present (threshold or true) and ? = inadequate information is obtained. In the SCID-II interview, criteria related to observed behavior are included for schizoid, schizotypal and histrionic personality disorders.

SCID-II has been widely used in research and clinical practice for assessments of axis II diagnoses either categorically or dimensionally.

SCID-II interview was used in study I.

Structural Analysis of Social Behavior (SASB) was used in study IV and VI to illustrate transsexuals' and GIDAANT patients' self-image.

The SASB is a model developed by Benjamin (1993) to describe self-image from a person's ratings based on the idea that the self develops in interaction with others and that the basic dimensions for that interaction are affiliation and interdependence. Theoretically, the test is based on the idea that all experiences are filtered through the self. The questionnaire consists of 36 statements about the proband's attitudes towards himself. The proband agrees or disagrees to these statements on a scale from 0–100. Eight different clusters formed from the statements are extracted. Each cluster expresses different aspects of the proband's self-image. For instance, cluster 2 questions all express self-love and spontaneity, cluster 3 and 4 also indicate positive self-image. Negative self-image is expressed in cluster 6 – 8 including self-blame, self-hate, and self-neglect, respectively.

In accordance with psychodynamic theory, a normal self-image should be consistent and characterized by self-love and self-control and by low conflict in either of these dimensions. Results using SASB for different diagnostic groups and controls confirmed this assumption (Öhman and Armelius, 1990; Benjamin, 1993).

Defense Mechanism Test (DMT) was used in study V and VI. The DMT is a percept-genetic test developed by Kragh (1955) and was used in this study to illustrate psychological defenses and personality organization among transsexuals.

The DMT is based on psychoanalytical theory and was developed in Sweden in the 50's. It was primarily constructed for selecting people for stress-related tasks. During the last decade the test has been an established instrument in screening processes for selecting e.g. pilots and deep-sea divers (Olff, 1991; Waernes, 1982).

The test has been used in many studies in Scandinavia and is closely related to the international tradition based on subliminal perception. From a clinical point of view, the DMT represents an alternative to the Rorschach test.

The DMT consists of a TAT-like picture with a hero to identify with and a threatening older person in the background (peripheral person). The picture is presented tachistoscopically with exposure times from 5ms up to 2s. The scoring is based on reported deviations from the stimulus picture and is recorded according to a manual. The deviations are assumed to represent attempts by the patients to manage, in terms of psychological defenses, the anxiety provoked by the pictures. The patterns of distortions in perception are diagnostic for different psychopathologies (Sundbom and Kullgren, 1992). In the past few years interest has grown in developing the test as a clinical tool and results show that probands' defense mechanisms are intimately associated with the degree of internalized self- and object representations. According to Sundbom (1992) the test should be regarded as an object relation test rather than merely a defense mechanism test. Results also indicate the possibility to distinguish different psychiatric diagnostic groups by using pattern-analysis of the distortions on the DMT.

In study V a complete analysis was made of the DMT results concerning transsexuals and in study VI some crucial DMT variables were selected in order to analyze their prognostic value in SRS.

Statistics

The statistical analyses in all studies except for study I were performed with an IBM computer and SPSS Soft Ware Package. In study I the statistics were made on a Macintosh computer by means of the Statview Package. The statistical methods used are presented in Table 2. In study V, DMT-data were analyzed by principal component analysis (PCA) and by partial least square (PLS) discriminant analysis, as described in Paper V.

Table 2. Assessment, instrument and statistics.

Study	Assessment/Instrument	Statistics
I	SCID screen SCID-II interviews	Cohen's kappa coeff. Spearman's corr. coeff. Specificity/Sensitivity
II	GAF scale, axis V GAF scale, self-report SCID screen Clinical axis I and II diagnoses (DSM-III-R)	Linear corr. coeff. (Pearson's r) Student's t -test
III	SCID screen Clinical axis I and II diagnoses (DSM-III-R) GAF scale, axis V	Chi-square test (Fisher's exact test) Linear corr. coeff. (Pearson's r) Student's t -test Specificity/Sensitivity
IV	SCID screen SASB Clinical axis I and II diagnoses (DSM-III-R) GAF scale, axis V	One-way ANOVA test Student's t -test Linear corr. coeff. (Pearson's r)
V	DMT	Principal Component Analysis (PCA) PLS discriminant analysis
VI	Clinical axis I and II diagnoses (DSM-III-R) GAF scale, axis V SCID screen SASB DMT "Outcome rating format for TS" (modified)	Student's t -test Linear corr. coeff. (Pearson's r) Relative Risk estimate

RESULTS AND COMMENTS

Evaluation of the SCID screen questionnaire

The SCID-II interview was compared with the results of the SCID screen questionnaire (Paper I) in order to evaluate the ability of the SCID screen to be used as a sole diagnostic instrument for personality diagnosing. In total, 37 (54 %) out of the 69 interviewed subjects met the criteria for a personality disorder according to the results of the SCID-II interview. The frequencies varied from 1.5 % for antisocial to 20.3 % for borderline personality disorder. According to the SCID screen, 73 % of the subjects fulfilled the demands for a personality disorder. It was obvious that the original SCID screen was overinclusive. However, when the SCID screen was used with an adjusted cut-off level by requiring one more criteria for all diagnoses, 58 % of the subjects fulfilled the criteria for a personality disorder. Avoidant, obsessive-compulsive, paranoid, narcissistic, and borderline disorders were somewhat overestimated, while dependent, schizotypal, and schizoid personality disorders were slightly underestimated. The Spearman rank correlation coefficient between the number of criteria fulfilled in SCID-II interview and SCID screen, respectively, varied from 0.51 (passive-aggressive) to 0.80 (borderline). The overall kappa coefficient of agreement between the interview and the questionnaire with adjusted cut-off was 0.78 which was quite satisfactory (Table 3). The coefficients for specific personality disorders varied from 0.81 for paranoid to 0.34 for antisocial disorder. When SCID screen was used with its ordinary cut-off criteria, it yielded a specificity of 50 % and a sensitivity of 97 % for any personality disorder. When the adjusted cut-off level was used, the specificity increased to 75 % and the sensitivity decreased to 87 %.

As an alternative to the adjusted cut-off which sharpens the demands for categorical axis II diagnoses, we evaluated in Paper III another way to minimize the overinclusiveness of the SCID screen by adding a functional criterion, a GAF score below 70, as an additional requirement to the original cut-of level to qualify for an axis II diagnosis. At the same time, the GAF<70 criterion is an attempt to incorporate the general criterion of axis II into the SCID screen.

In the raw, unmodified version of the SCID screen, the proportion of transsexual patients who fulfilled the demands for any personality disorder was 68 % compared with 37 % according to the clinical axis II evaluation. When the functional criterion (GAF<70) was added to the SCID screen, the prevalence dropped to 26 %. Two individuals who clinically presented a personality disorder were not identified by the modified SCID screen version. The sensitivity for SCID screen with the GAF<70 criterion was 67 % and the specificity was 93 % (Paper III). The correlation coefficient between the raw SCID screen version and the clinical axis II diagnosis was 0.31, which improved to 0.64 when the SCID screen was provided with the functional criterion. When the kappa coefficient was calculated, an agreement of 0.62 was found between clinical diagnoses and modified SCID screen diagnoses.

In study IV, GIDAANT patients were assessed in the same way, although with focus on personality traits rather than disorders. There was a high prevalence (about 70%) of personality disorders according to both the clinical evaluation and axis II diagnosing by SCID screen with the $GAF < 70$ criterion. When GIDAANT and transsexual patients were analyzed together, with respect to concordance between the two ways of evaluating axis II disorders, the Spearman rank correlation coefficient was as high as 0.79 and the kappa value was 0.77 (Table 3).

The agreement between diagnoses according to SCID screen with adjusted cut-off and SCID-II interview was surprisingly high, but at least two types of problems emerged. Firstly, among those disorders which also require additional observational criteria, the frequency was underestimated according to SCID screen. Secondly, the general criterion was not taken into account. When a functional criterion (GAF score below 70) was used alternatively as an additional requirement to obtain an axis II diagnosis, an equally high concordance was yielded in comparison with clinical axis II evaluation. This method of sharpening the screening instrument seems to be an appropriate alternative. The prevalence of personality disorders estimated by the SCID-II interview and modified versions of the SCID screen is in accordance with previous studies on psychiatric out-patients (Bodlund et al., 1993), also indicating the usefulness of the SCID screen as a single diagnostic tool provided that the cut-off criteria are modified. In its original form, the SCID screen qualifies as a good screening instrument.

In addition, the SCID screen has the capacity to illustrate the dimensionality of the personality concept. By displaying the proportion of fulfilled axis II criteria for every single personality dimension, as seen in Papers III and IV, personality traits and thereby also subthreshold personality pathology can be demonstrated. Personality traits measured in this way exist naturally in normal subjects and become more pronounced in patients with personality pathology. The pattern of personality traits also seems to differentiate various conditions (Paper IV). On the other hand, a strict dimensional model could be cumbersome and inefficient in clinical practice.

Table 3. Comparison between SCID screen questionnaire, SCID-II interview and clinical axis II diagnoses. Frequencies of personality disorders (PD) and statistical analyses.

	Frequency of PD	Specificity	Sensitivity	Kappa coeff. (any PD)
Study I:				
SCID screen with adjusted cut-off	58%	75%	87%	0.78
SCID II interview	54%			
Study III+IV:				
SCID screen with GAF < 70	26% (TS) 64% (GIDAANT)	100%	75%	0.77
Clinical diagnoses	37% (TS) 73% (GIDAANT)			

Study I = Psychiatric in- and out-patients.
Study III = Transsexuals. Study IV = GIDAANT.

The validity and reliability of a self-report version of the GAF-scale.

In study II, the GAF-scale and a self-report version of it were evaluated with respect to the scales' validity and reliability. In a sample of 73 psychiatric out-patients, the mean GAF score according to expert evaluation was 67 with a range between 48–86. High complexity and severity of disorders plus a high number of fulfilled axis II criteria were significantly associated with low GAF scores. In the self-report version where the patients themselves judged their global social and psychological functioning during the past years, they in general scored themselves slightly lower than the experts did. Patients with depressive symptoms as a part of an adjustment disorder or mood disorder were most prone to underestimating themselves. Females also tended to score themselves lower than the experts did. When independent expert ratings on GAF were compared to ratings according to the self-report, the over-all Pearson correlation coefficient was 0.62.

The lowest GAF-scores were seen among patients with personality disorders within cluster A and B and among patients with both an axis I diagnosis and a personality disorder. The highest GAF-scores were seen among patients with eating disorder and adjustment disorder. It should be mentioned that psychotic patients, a group who probably should have had the lowest GAF-scores, were not included in this study. Patients rated themselves on GAF on average 4.4 points lower than the experts did. Furthermore, there was a negative correlation between the proportion of fulfilled axis-II criteria according to SCID screen and the GAF-score. The most extreme underestimators were 8 women, and two men with personality disorders were the most extreme overestimators. Sixty-five percent of the out-patients underestimated themselves to various degrees on the GAF-scale.

The validity of the GAF-scale gained support in the sense that higher severity and complexity of axis I or II disorders among patients resulted in lower GAF-scores. When axis II pathology was analyzed in a dimensional way by the proportion of fulfilled criteria according to SCID screen, there was an inverse relationship between the number of fulfilled criteria and GAF-scores. The self-report version was found to be reliable and as shown in studies III and IV also useful as "the general criterion" in axis II diagnosing. In this selected population of psychiatric out-patients, the functional level was in general fairly high. The mean GAF-score was 67 compared to 83 in a control group (study III). Mean GAF-score among transsexuals was 70 and among atypical GID patients 62. In summary, the GAF level corresponds well to the degree of overall psychopathology.

There are two main advantages with a self-report version of the GAF-scale. Firstly, it is economical and easy to handle in large-scale studies, and secondly, it provides information about the patients' own opinions about the severity of their conditions and changes over time.

The study lends further support to the validity of axis V (Goldman et al., 1992) and demonstrates a high concordance between the self-report version and expert ratings of axis V. The GAF scale deserves to be used more frequently in epidemiology research and outcome studies.

Personality traits and disorders among transsexuals and GIDAANTs

In a group of 19 transsexuals representing all current patients in the two regions undergoing sex reassignment (study III) we found that 10 out of 19 also had a further axis I diagnosis, mainly less severe disorders. On axis II, the clinical assessment showed that 37 % of the transsexuals had at least one personality disorder, predominantly within cluster B.

The transsexuals reported a significantly higher proportion of fulfilled criteria in 8 of 12 personality dimensions and overall fulfilled axis II criteria was 29 % among transsexuals versus 17 % among controls. When analyzed clusterwise there were

significant intergroup differences within cluster A and B but not in C. Categorical axis II diagnosis were evaluated according to SCID screen in its original form and with a functional criteria (GAF<70) as an additional requirement for diagnosis. The prevalence of personality disorders was 26% according to SCID screen with GAF<70 criterion.

In this population there was a tendency towards more fulfilled axis II criteria among biological women, who differed significantly from men as regards histrionic, narcissistic and passive-aggressive personality traits.

In study IV, clinical assessment of axis I and II disorders among GIDAANT patients yielded frequencies as high as 82 % of additional axis I diagnoses and 73 % had a personality disorder. The majority of them had a personality disorder within cluster B. In this study SCID screen was used only in the dimensional way, showing that GIDAANT patients differed from controls in all personality dimensions and fulfilled 40 % of all axis II criteria in contrast to 29 % for transsexuals and 17 % for the control group. GIDAANTs differed significantly from transsexuals in borderline, avoidant, dependent, and obsessive-compulsive personality traits.

The SCID screen with GAF<70 criterion was clearly capable of identifying personality disorders. Specificity and sensitivity of the instrument compared to clinical axis II assessment were satisfactory.

Additional axis I and II disorders among the transsexuals were rather high despite the fact that they had passed through a long selection process. The prevalence of personality disorders (modified SCID screen) was 26 % compared to about 60 % among psychiatric out-patients. In the dimensional perspective, SCID screen displayed a surprisingly high number of fulfilled criteria in e.g. the paranoid spectrum which is interpreted as a secondary phenomenon to their GID. Marked subthreshold personality pathology was seen in cluster A and B. The sex difference, that is more axis II pathology among biological female transsexuals, can partly be explained by selection effects, but is in contrast to several earlier studies showing the opposite tendency (e.g. Kokott and Fahrner, 1988).

In comparison with GIDAANT patients, comorbidity of other axis I and II disorders among transsexuals was of a moderate degree. The degree of psychopathology among GIDAANTs was high according to both clinical assessment and the SCID screen. In the dimensional perspective, GIDAANT patients fulfilled about 40 % more axis II criteria compared to transsexuals. Axis I and II disorders among GIDAANTs were rather severe, e.g. psychotic disorders and severe personality disorders in some cases, indicating the diagnostic heterogeneity of the GIDAANT group. The composition of the group is reflected by the fact that these patients also were applying for sex reassignment and probably represent a subgroup of GIDAANTs.

Self-image according to the SASB among GID-patients

In study IV, 18 transsexuals and 11 patients diagnosed as GIDAANT were assessed according to the SASB, a self-report questionnaire describing the person's self-image. The probands represent the total population of patients applying for sex reassignment. All were assessed by the SASB, the SCID screen, and clinical evaluation of axis I, II, and V.

Among transsexual men and women there were no significant differences in their self-images compared to healthy men and women. The transsexuals had, in other words, a positive self-image with balanced self-control and spontaneous self and predominating self-love.

On the other hand, the GIDAANTs showed significantly higher ratings on SASB clusters indicating negative self-image with self-hate, self-blame and self-neglect. The GIDAANT patients also had lower ratings on positive clusters compared to both controls and transsexuals. When self-image was analyzed together with personality traits according to the SCID screen and GAF values, high proportions of fulfilled axis II criteria and low GAF-scores were significantly correlated to negative self-image. Low GAF-scores were positively associated with cluster 8 on the SASB, reflecting "neglecting and ignoring selves". In conclusion, high ratings on self-blame, self-reject and self-neglect correlated positively with overall fulfilled criteria on SCID screen and negatively with the GAF-score.

When self-image, personality traits and axis I and II disorders are compared among patients with different types of GID, marked differences emerged between transsexuals and GIDAANT patients. The latter group showed overall more psychopathology on axis I, II and V and in addition differed significantly from both controls and transsexuals in terms of higher scores on self-neglect, self-oppression and self-blame. A surprising finding was that the transsexuals reported normal self-images despite their complicated identity disorder. Their self-images were dominated by self-love, self-nursing, and self-control. In summary, the study clearly shows that positive self-image, high level of functioning, and low degree of personality pathology covariate.

Psychological defenses among transsexuals according to DMT

The aim of study V was to discern discriminating patterns in the perceptual responses according to the Defense Mechanism Test (DMT), a projective percept-genetic method, among 41 subjects comprising the diagnoses transsexualism (TS), borderline personality disorder (BPD) and a non-patient group (NP). The overall results showed, by means of a pattern analysis of 130 DMT variables and partial least squares (PLS) discriminant analysis, that it is possible to separate these diagnostic groups. A two-dimensional model was shown to be most powerful. In discriminating these conditions the quality and the complexity of the representations

should be considered both from a structural/reality-oriented perspective and from an affective perspective. The most characteristic properties of the TS group were high threshold values for perception, lack of emotional investment in the object relationship, denial of the threat in the stimulus picture, and some introjection and projection responses. Among BPD patients, a discontinuity of the two-person relationship in the stimulus-picture as well as emotional expressions emerged as discriminating features. The NP group was distinguished by very few DMT distortions, overall indicating good reality orientation. Briefly, the TS group displayed poorer reality orientation and greater boundary disturbances than the borderlines. Furthermore, the BPD patients seemed to form their representations affectively which the transsexuals did not.

Of the three diagnostic groups, the TS group seemed to be most distant from a correct perception of the picture. The BPD group comes next, while the NP group was defined by fewer and milder forms of distortions. Unlike the NP and BPD groups, the TS group lacks emotional investment in the displayed relationships. However, in comparison with the NP group, the TS and BPD groups seemed to share a common perceptual constellation centered around "pregenital" pathology, characterized by the relatively inconsistent and unstable quality of the representations typical of the BPD group and the difficulty of the TS group in perceiving the major part of the picture and especially the threat.

A more detailed scrutiny of the TS group showed that there were no obvious systematic differences of the individual positions on the PLS-plot between those who had undergone surgery and those who had not. Furthermore, no sex differences were found between male and female transsexuals, which also contrasts with many other descriptive studies which concluded that biological male transsexuals were characterized by more psychopathology and a poorer outcome compared with female transsexuals (Lothstein, 1980, 1984; Kockott and Fahrner, 1988).

In summary, the pattern analysis identified discriminating defensive maneuvers for the groups TS, BPD and NP. In addition, significant perceptual difficulties were revealed, supporting the psychodynamic model for the understanding of the phenomenon of transsexualism. A possible interpretation is that a change of gender is an effective psychological defense against conflicts/arrests of the individual. However, this is contrary to results from numerous clinical and empirical descriptions of genuine transsexuals who usually show mild to moderate psychopathology. As mentioned previously in studies III and IV concerning personality traits and self image, respectively, we found moderate prevalence of axis I- and II disorders but significantly higher subthreshold values of personality pathology. The self-image of these transsexuals was identical with what is found in a healthy control group. One possible explanation of the disagreement between assessments based on the DMT and assessments based on other data sources is that this projective method captures underlying psychodynamic problems not obvious in self-report inventories and interviews.

Course and outcome among transsexuals in the process of changing sex

The nineteen genuine transsexuals approved for sex reassignment were followed-up after five years by the authors. Outcome was evaluated as changes in seven different areas of functioning. At baseline the transsexuals were evaluated according to axis I, II and V, SCID screen, SASB and DMT (Papers III–V). The transsexuals had been judged as core transsexuals with early debut and fulfillment of DSM–III–R criteria.

At follow-up all but one were treated with contrary sex hormones and 12 of the 19 transsexuals had completed sex reassignment surgery. One male transsexual regretted the decision to change sex and had quit the process. Two more transsexuals had not undergone any surgery yet, due to high age and ambivalence, respectively. A modified version of "standardized rating format for transsexuals" (Hunt & Hampson, 1980) was used as outcome measure. Surgical results and sexual adjustment were not assessed. In addition, the GAF difference between base-line and follow-up assessments plus the patients' subjective opinions about the outcome were taken into account. Global improvement after five years was defined as improvement in at least two of the seven areas of functioning and no decline in any area of functioning. Overall, thirteen (68%) had improved after five years in the process of sex reassignment. Three transsexuals were judged as unchanged and another three (16 %) experienced a worse situation. One of those regarded the sex change as a failure. F–M transsexuals showed a tendency towards slightly better outcome, especially concerning the quality and the persistence of partnerships and improvement in socio-economic status.

When different baseline factors were analyzed as predictors for positive or negative outcome, it emerged that absence of clinical personality disorders and categorical axis II diagnoses according to the SCID screen (with GAF<70 criterion) and a positive self-image were significantly associated with positive outcome. Consequently, the most pronounced risk factor for negative outcome was the presence of categorical axis II diagnosis according to the modified SCID screen (especially high proportion of fulfilled axis II criteria-threshold and subthreshold-in cluster A). Other negative predictors were high scores on negative self-image, lack of partner at baseline and male biological sex. However, DMT-variables were not significantly correlated with outcome scores.

This study evaluated the outcome for transsexuals being in different phases of the sex-changing process and not exclusively the outcome of SRS. In accordance with earlier reports, the five year outcome was fairly positive with about 70 % of the transsexuals as improved after five years. Three of them had an unsatisfactory outcome and only one case regretted the decision to change sex.

At baseline, all transsexuals in the study showed moderate psychopathology on axis I and II and a rather high level of social functioning according to GAF. This is representative for transsexuals approved for SRS in Sweden and probably a consequence of strict inclusion criteria and treatment measures according to "the standards of care for transsexuals". In previous studies on transsexuals (Papers III

and IV) we hypothesized that personality traits, self-image, and psychological defenses should be important prognostic factors. The two first hypotheses were verified by a strong correlation between negative outcome and negative self-image and high proportion of fulfilled axis II criteria according to SCID screen, respectively. Female sex and a stable partnership also emerged as positive prognostic factors in accordance with previous research.

In conclusion, the results from the present study strengthen the impression from previous investigations that outcome among transsexuals undergoing sex reassignment is generally positive. The SCID screen, the SASB, and even the DMT emerge as most valuable in diagnosing Gender Identity Disorders. These instruments also provide important prognostic information which can improve the set of criteria for selection of SRS-candidates. Furthermore, the use of these instruments might facilitate communication between researchers and clinicians within this field.

CASE ILLUSTRATION

Patient # 2 (Paper VI) is a biological female who was brought up under ordinary circumstances. Her family was not afflicted with any specific medical or psychiatric morbidity. She has a four years younger brother, with no psychiatric symptoms. Since the age of five, she increasingly felt discomfort with her assigned sex, leading to cross-gender behavior and dressing. She was teased because of this and developed low self confidence and shyness. During puberty, gender identity problems were magnified and led to her first contact with a child psychiatric clinic. At that time she was able to verbalize her wish to change sex. She and her parents were offered psychiatric counseling during the subsequent years. At the age of 22 , she was judged as a true transsexual but with immature traits and easily evoked anxiety. She was treated with contrary sex hormones, which was interrupted after one year. Further hormone and surgical treatment was postponed because of her immaturity and sociophobia. Five years later, after a new psychiatric examination, she was approved for SRS.

At the time for baseline assessment (Paper VI) she/he had changed first name and was living completely in a male sex role. Mastectomy, sterilization/castration had been performed and he had been on testosterone medication for the past four years. However, the final phalloplasty remained, because of ambivalence and fear of surgery. He had recently moved to his girlfriend, a heterosexual woman with two teenage children from a previous relationship.

Findings from baseline assessment:

- DSM-III-R criteria for (core) transsexualism were fulfilled.
- Criteria for social phobia on axis I were fulfilled.
- Criteria for borderline personality disorder on axis II were fulfilled (criteria no 1, 5, 6, 7 and 8, i.e. unstable relationships, self-mutilating behavior, marked identity disturbance, feelings of emptiness, and frantic efforts to avoid abandonment).
- GAF score (axis V) was according to the expert 60 and to the patient's GAF self-report, 55.

- SCID screen revealed high proportions of fulfilled axis II criteria, predominantly within cluster B and C (Figure 1). Totally, he fulfilled 56% of all criteria (compared to 32% for female transsexuals in general and 17% among controls). Several categorical axis II diagnoses were also fulfilled according to SCID screen (with GAF<70 criterion).

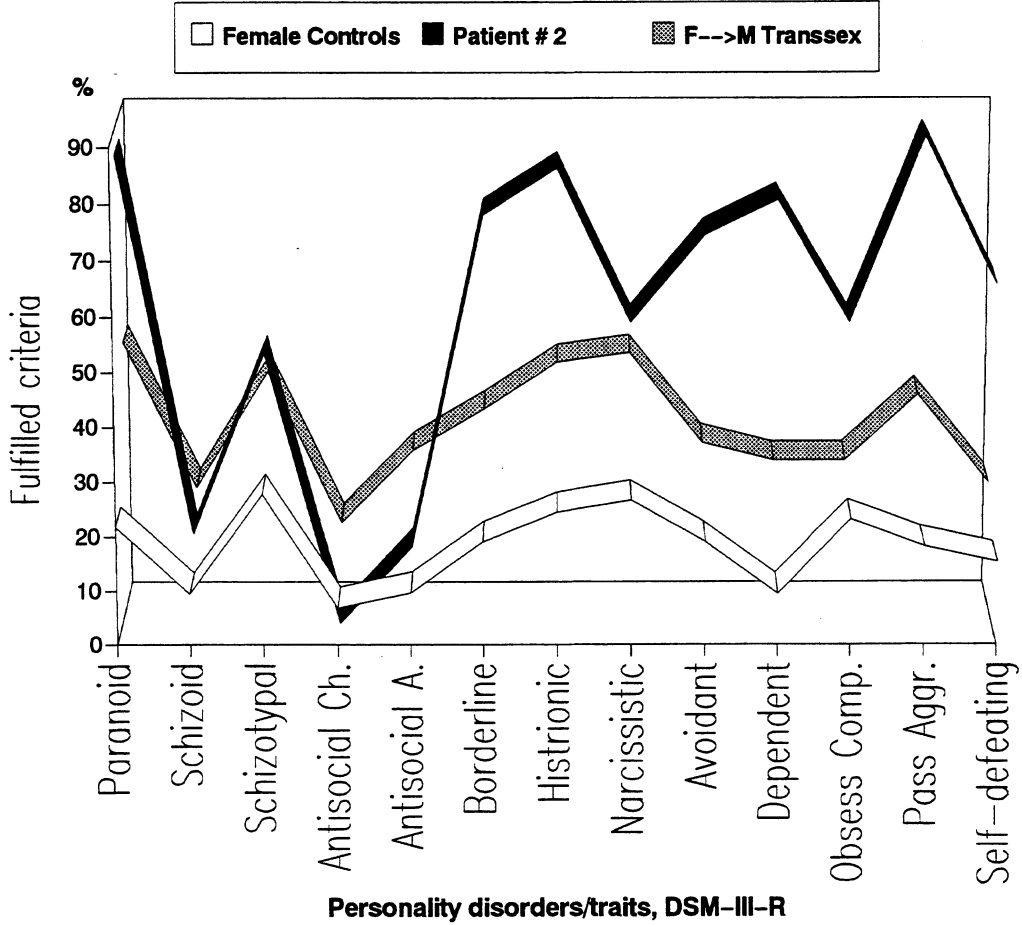


Figure 1. Personality profiles, i.e. the proportion of fulfilled axis II criteria in different personality dimensions, according to SCID screen: Patient # 2 versus female transsexuals and healthy women.

- SASB showed predominantly negative self-image with self-hate, self-neglect and especially self-blame (Figure 2). In addition, ratings were low on positive aspects, and only self-control and self-nourishing were in accordance with other transsexuals' self-image.

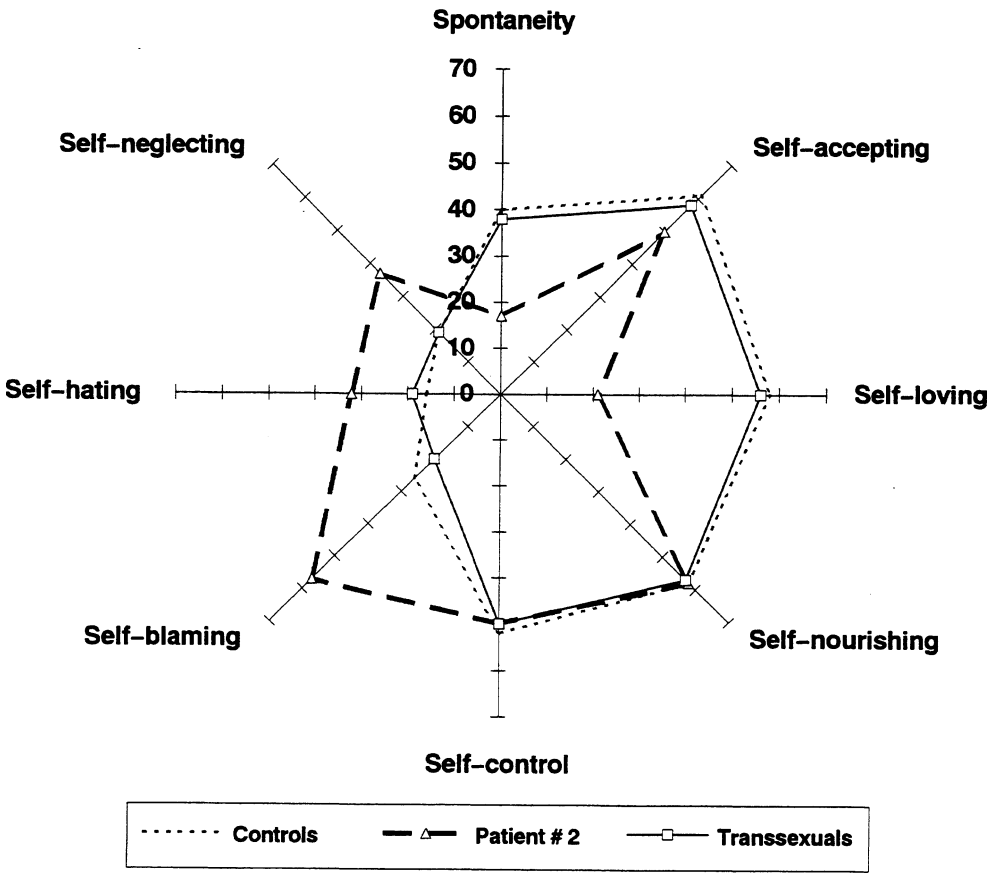


Figure 2. Self-image according to SASB. Patient # 2 versus transsexuals and healthy subjects.

- On the projective test, DMT, patient # 2's position in the plot is close to the spheres of borderline patients' and healthy subjects'. The position indicates a worse reality orientation (PLS 1) and an equal level of emotional investment in the exposed picture (PLS 2) compared with controls.

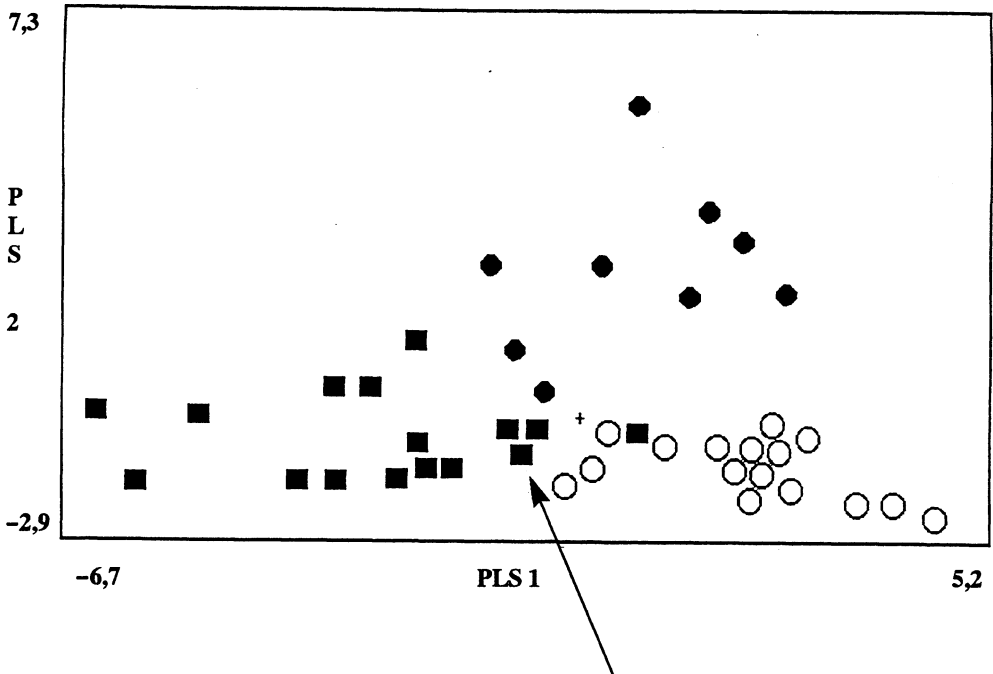


Figure 3. PLS-discriminant analysis of the DMT-results. Each individual is plotted in a two-dimensional window created by the two significant principal components differentiating the disorders. Patient # 2 is marked by the arrow. ■ = Transsexuals, ○ = Healthy subjects, ● = BPD-patients.

During the five years of study, patient # 2 cohabited with the same partner. The relationship was characterized by extreme ambivalence towards the partner and her children. He showed obvious signs of regressive dependency and immaturity in his relationships. He was on long-term sickleave and periodically suffered from a high level of anxiety, multiple phobias and psychosomatic symptoms.

At follow-up assessment, outcome was judged as unsatisfactory due to lack of improvement in any of the outcome variables and poorer work ability. He had received a disability pension, and showed at follow-up pronounced psychopathology, increased social impairment plus a need for continuous psychiatric counseling and medication. However, the patient did not regret the sex reassignment and still plans, in due time, to undergo the final surgery.

Comments and conclusion

In summary, transsexual # 2 displays signs of severe psychopathology, according to the diagnostic instruments used in the present study. This is in contrast to repeated clinical evaluations which identified psychopathology only of moderate severity. The immature traits and the social phobia were initially regarded as a consequence of the GID and viewed as transitory and age-dependent.

Given the selection criteria suggested in the present study, this patient might not have been approved for SRS. On the other hand, little is known about the consequences of a rejection from SRS. The course and outcome in this case might have been worse if not accepted for treatment.

This may serve as an illustrative example of the methodological and clinical problems this thesis focuses on and aims at evaluating. It also highlights the psychiatrist's personal dilemma in making these crucial decisions and emphasizes the need for further research.

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