

An Epidemiological and Demographic Study of Transsexuals in the Netherlands

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This is an epidemiological and demographic study of 1285 transsexuals in the Netherlands. The data were collected from 1975 to the end of 1992. Over 95% of the Dutch transsexuals have been treated at the study center. Between 1975 and 1984 the annual number of female-to-male transsexuals increased, stabilizing thereafter. In the male-to-female transsexuals this trend continued up to 1989, declining slightly thereafter. Over the last 5 years on average 50 (range 38-60) male-to-female transsexuals and 21 (range 14-25) female-to-male transsexuals received surgical and/or hormonal treatment yearly. The sex ratio remained stable over this period: 3 male vs. 1 female subject. The calculated prevalence of transsexualism in The Netherlands is 1:11,900 males and 1:30,400 females. Transsexuals live predominantly in urbanized areas, but those living in nonurbanized areas show an even distribution over the country. The majority of female-to-male transsexuals apply for reassignment between the ages of 20-25, seldom in middle ages. The majority of male-to-female transsexuals do so between the ages of 25-30 and middle-aged subjects are not rare. Between 77-80% of both categories receive surgical and/or hormonal treatment. Five male-to-female transsexuals regretted sex reassignment.

KEY WORDS: transsexuals; epidemiology; demography.

INTRODUCTION

Transsexualism, the condition in which a person with an apparently normal somatic sexual differentiation has the unalterable conviction that

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he/she should actually be a member of the opposite sex, is a rare phenomenon. Few clinicians, therefore, have chances to collect sizable epidemiological and demographic data on transsexuals. This clinic had such an opportunity. It started to provide comprehensive sex reassignment treatment (psychological/psychiatric, hormonal, and surgical) in 1975. More than 95% of the Dutch transsexuals have received treatment in this clinic. Costs of sex reassignment have always been fully covered by the transsexual's medical insurance. Since 1985, transsexuals in the Netherlands can obtain a change of their legal sex by a simple court procedure. Furthermore, the Dutch societal attitudes towards transsexuals compare favorably with most other countries. The above situation creates the best possible condition to generate epidemiological and demographic data on transsexualism.

METHODS

This is a retrospective study on 1285 subjects who contacted this clinic with complaints of gender dysphoria during the period from 1975 through 1992. Gender dysphoria is defined as the state, as subjectively experienced, of incongruity between the genital anatomy and gender identity. Transsexualism is its extreme end. The population in the Netherlands was 14 million in 1975 and 15 million at the end of 1992. Treatment followed guidelines formulated in the standards of care of the Harry Benjamin International Gender Dysphoria Association (Walker *et al.*, 1985). Subjects were first evaluated by a psychologist or psychiatrist to assess the degree of gender dysphoria and their eligibility for sex reassignment treatment. If warranted, hormonal treatment followed. After a minimum of 16–24 months of hormone treatment and a successful real-life test (Money and Ambinder, 1978), the subject was eligible for sex reassignment surgery. After surgery including gonadectomy, patients are severely hypogonadal and must continue cross-sex hormone therapy; the latter is a reason for continued medical supervision. The presented data, collected from the patients' medical records, are numerical in nature.

RESULTS

From 1975 to the end of 1992, 949 males and 336 females had presented themselves to our clinic with gender dysphoria. Figures for each year of this study are given in Fig. 1 (male) and Fig. 2 (female) (intake). The numbers of subjects who received hormonal treatment only or in combination with genital surgery, are designated in Figs. 1 and 2 as reassig-

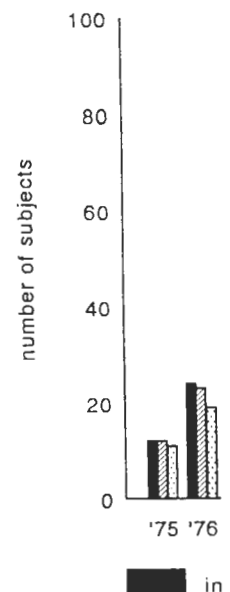


Fig. 1. Yearly number (intake), received hormonal treatment only or in combination with genital surgery, received contact with the clinic 1975–1993.

ment. The number of subjects who received hormone treatment only or in combination with genital surgery was a clear trend thereafter consulted the clinic. The number of subjects actually received hormonal treatment only or in combination with genital surgery from 1989 on. There is a clear trend in the criteria did not change over time. There was a category of transsexuals who were of subjects representing the baseline remained stable (Table I). The number of subjects who received genital surgery became a diagnostic category eventually turned out to be

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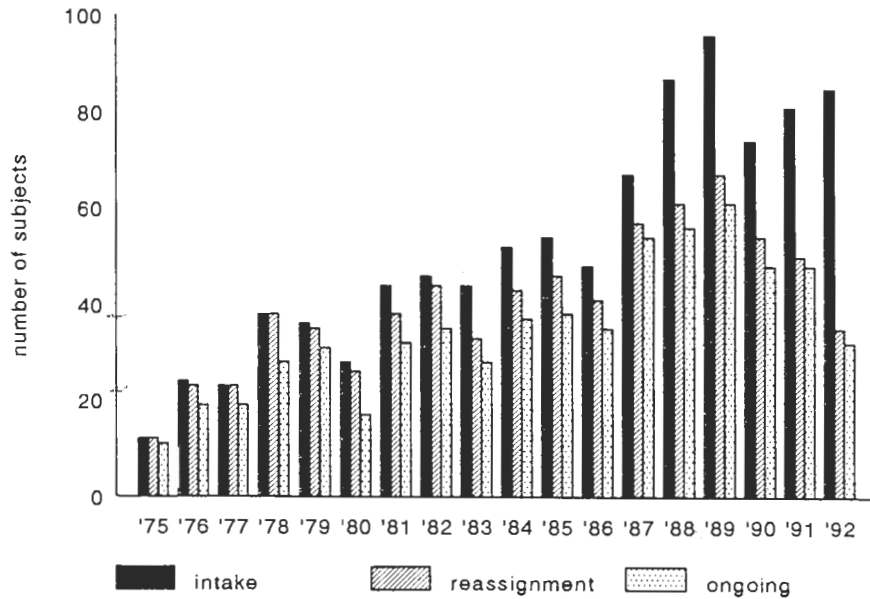


Fig. 1. Yearly number of male-to-female transsexuals who presented themselves to our clinic (intake), received hormonal treatment and/or genital surgery (reassignment) and are still in contact with the clinic for surveillance of their hormone treatment (ongoing contact); between 1975-1993.

ment. The numbers still in contact with the clinic for surveillance of their hormone treatment are designated as ongoing contact. For the males there was a clear tendency of increasing numbers over the years 1975-1989; thereafter consultations on gender dysphoria stabilized, but numbers of subjects actually receiving hormonal and surgical treatment declined from 1989 on. There is no simple explanation for this observation. Diagnostic criteria did not change. Neither do our data on age distribution show that there was a catch-up effect in the sense that relatively more older transsexuals were treated before 1989 and that from 1989 on the numbers of subjects represented only the yearly incidence of transsexualism. This inference is based on the finding that the percentages of male-to-female transsexuals below and above the age of 30 (30 as an arbitrary division line) remained stable over the study period (45-47% and 53-55% respectively, Table I). That the differences between numbers of intake and reassignment became larger from 1989 on may be in part explained by the fact that with the establishment of a gender clinic and of gender dysphoria as a diagnostic category, subjects with milder forms of gender dysphoria who eventually turn out to be not eligible for somatic treatment also came for

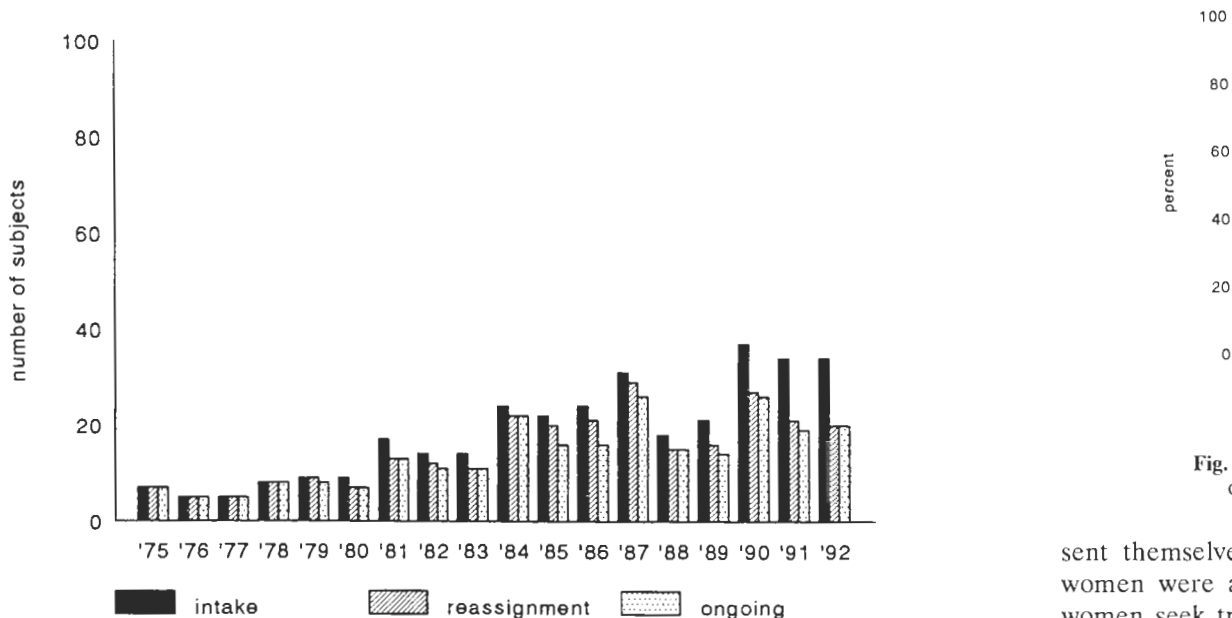


Fig. 2. Yearly number of female-to-male transsexuals who presented themselves to our clinic (intake), received hormonal treatment and/or genital surgery (reassignment) and are still in contact with the clinic for surveillance of their hormone treatment (ongoing contact); between 1975-1993.

consultation. With the female subjects, numbers increased yearly up to 1984 and then stabilized. Like the males with gender dysphoria, the average age of females at referral to the clinic hardly changed over three consecutive time periods. Over the total period 51-56% were below the age of 25 (Table I).

The sex ratio remained approximately stable throughout the study period, the male:female ratio being about 3:1 (Fig. 3).

The ages at which the first consultations on gender dysphoria took place showed somewhat different profiles in men and women. Women pre-

Table I. Age at First Attendance at Clinic

Period	Male-to-female				Female-to-male			
	<30 years		≥ 30 years		<25 years		≥ 25 years	
	n	%	n	%	n	%	n	%
1975-1981	76	47	85	53	24	56	19	44
1981-1987	134	47	154	53	61	53	54	47
1987-1993	229	45	271	55	90	51	87	49

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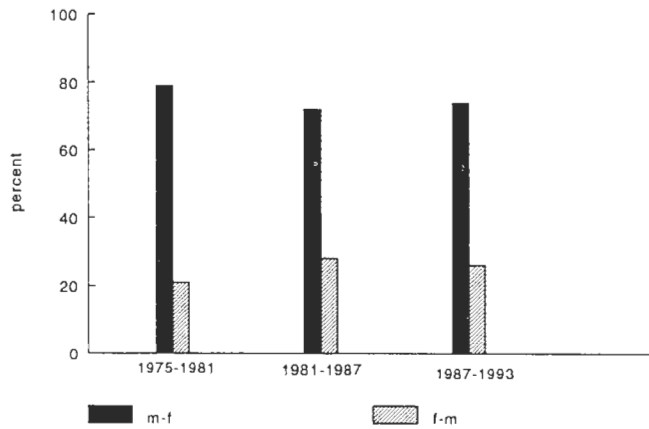


Fig. 3. Sex ratio of male-to-female : female-to-male transsexuals over time periods 1975-1981, 1981-1987, and 1987-1993.

sent themselves on average 5 years earlier than men and middle-aged women were a rare occurrence in this group (Fig. 5). The majority of women seek treatment between the ages of 20 and 25 (Fig. 5), while for men the majority is 25-30 years of age, but middle-aged men were not exceptional (Fig. 4). In other words: Most female-to-male transsexuals sought treatment before the age of 35, whereas the age of male-to-female (m-f) transsexuals is more evenly spread throughout the course of life. Over

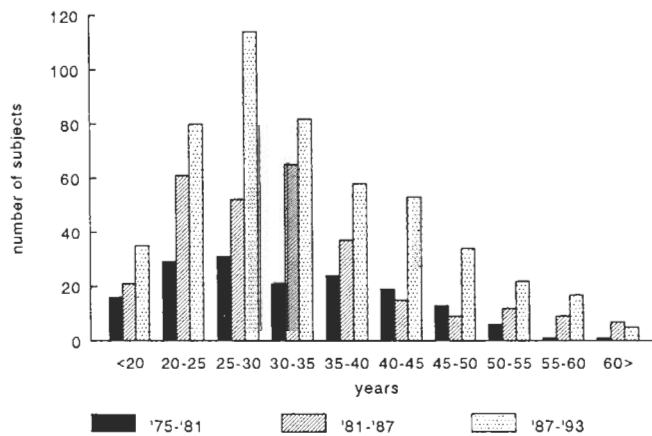
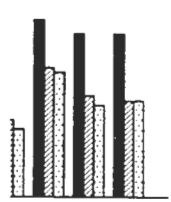


Fig. 4. Age male-to-female transsexuals at first consultation at the clinic over time periods 1975-1981, 1981-1987, and 1987-1993.



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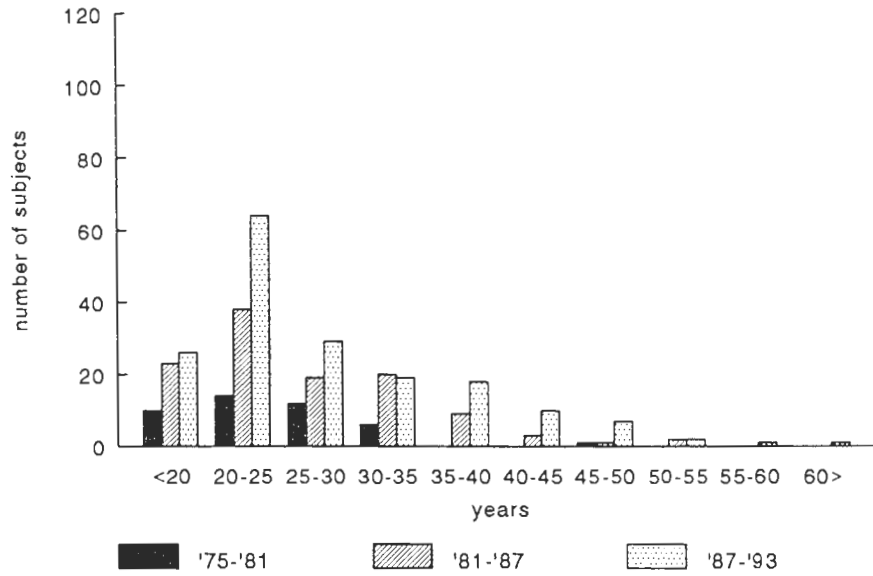


Fig. 5. Age female-to-male transsexuals at first consultation at the clinic over time periods 1975-1981, 1981-1987, and 1987-1993.

three consecutive time periods this distribution did not change either for m-f or for f-m transsexuals.

Of the 949 males seen at this clinic, 729 (77%) received hormonal treatment only or in combination with surgical treatment (Fig. 6). The reason for nonreassignment in the remaining 23% were noneligibility decided upon by the psychiatrist or psychologist (6% of total), withdrawal by the subject himself reported to the team (5% of total), or unknown (12% of total).

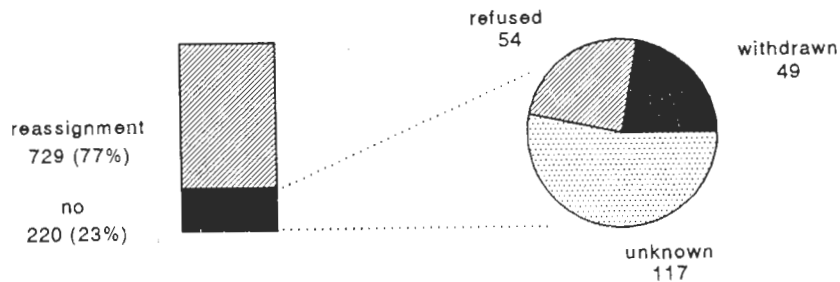


Fig. 6. Nonreassignment male-to-female transsexuals.

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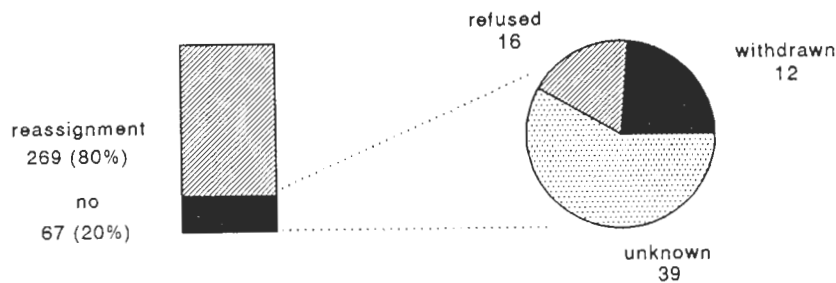


Fig. 7. Nonreassignment female-to-male transsexuals.

Among the latter are those who broke off contact with the clinic without giving a reason. Reasons for failure to continue attendance at the clinic probably varied; some may have felt after the first interview that they were not true transsexuals, others may have disagreed with the treatment approach. The statistics for the females are roughly the same (Fig. 7). Eighty percent received treatment. Of the remaining 20%, 4% of the total were noneligible, 5% withdrew themselves, and of 12% reasons were not clear.

Person and Ovesey (1974a, 1974b) have distinguished primary from secondary transsexuals. In the first group gender dysphoria has been existent from early childhood on (early onset), while secondary transsexuals have been gravitating from transvestism or homosexuality to transsexualism throughout their life history and gender dysphoria manifested only after puberty (late onset). Using the age of 12 as a more or less arbitrary division line, 67% of the males and 78% of the females could be considered as early onset transsexuals (Fig. 8 and 9). Of the males, fewer subjects with late onset gender dysphoria received somatic treatment, in particular surgical reassignment, in comparison to early onset transsexuals.

Some clinicians feel that transsexuals are a drifting patient population. But of the males who commenced hormone treatment, 87% could be followed up. The reasons for no ongoing contact (Fig. 10) were advice to

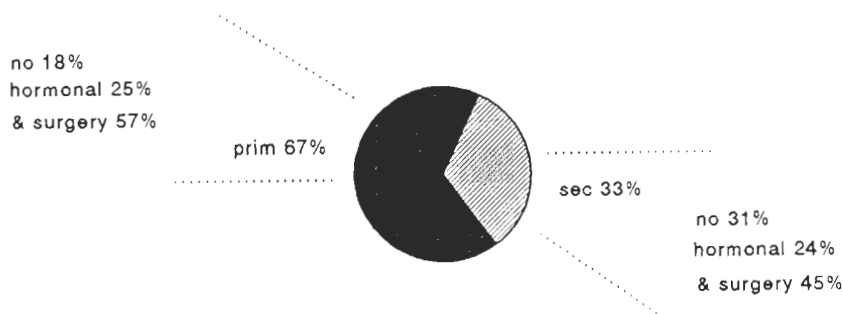


Fig. 8. Primary and secondary male-to-female transsexuals and outcome of further treatment.

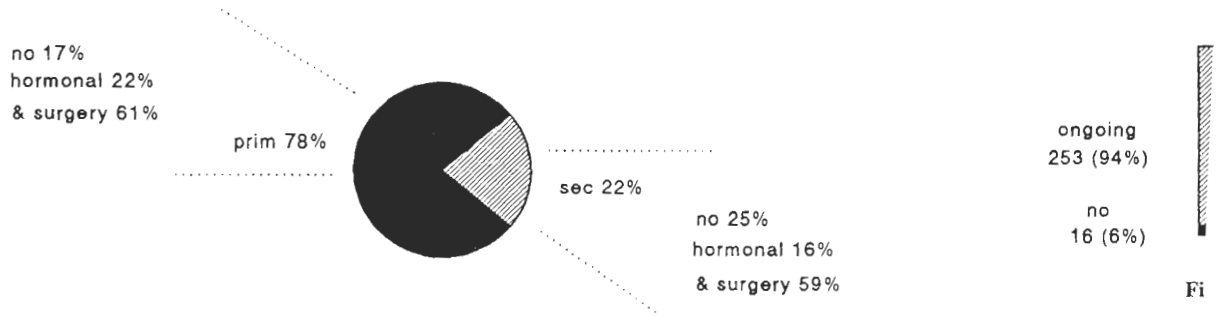


Fig. 9. Primary and secondary female-to-male transsexuals and outcome of further treatment.

discontinue hormone treatment (3), self-withdrawal (28); and 30 were lost for follow-up for unknown reasons.

Five subjects regretted their surgical reassignment. With the adoption of female status they incurred so many losses (family, friends, and jobs) that they wished they had not undergone sex reassignment. Gender dysphoria had indeed been an issue in their lives, but the solution of sex reassignment had not suited them well. Twenty-three subjects died during the study period, which is slightly above the expected death rate of subjects of similar age (15.3). In 7, suicide was the cause of death. Of 8 subjects the causes were various. Of the females who started hormone treatment, 94% could be followed up. Of the remaining 6%, 10 ceased treatment by their own initiative. One subject deceased, which equals the expected death rate (1.3). There were no subjects who, to our knowledge, regretted their sex reassignment. Two were lost for follow-up (Fig. 11).

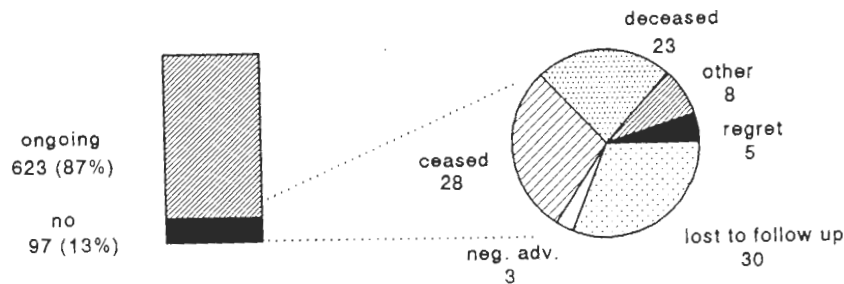


Fig. 10. Male-to-female transsexuals lost for ongoing contact.

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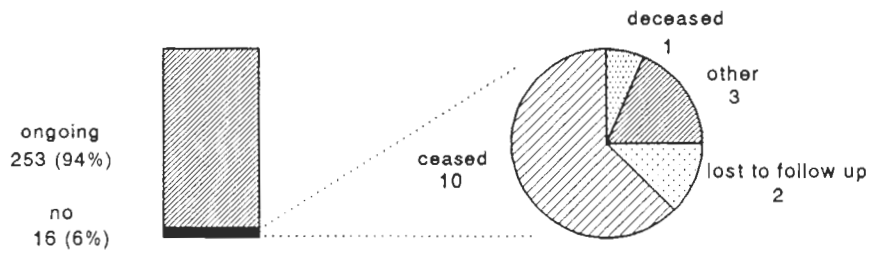


Fig. 11. Female-to-male transsexuals lost for ongoing contact.

Table II indicates the subject's province of residence in the Netherlands at the time of the first visit to the clinic. The figures for the three major cities are given separately. In the Netherlands there is an urban agglomeration in the western part of the country. Most transsexuals appeared to live there. The distribution over the nonurbanized provinces was rather even. Of the males 33% lived in nonurbanized parts of the country and of the females this was 39%. In our study there are foreign subjects, divided in EEC and non-EEC citizens. Among these subjects there were relatively fewer women (18%), possibly indicating that men with gender dysphoria are more inclined to seek sex reassignment abroad.

DISCUSSION

This study presents an overview of the population of subjects with gender dysphoria seen in this clinic between the years 1975 and 1993. On the basis of these data the prevalence of transsexualism was estimated to be 1:11,900 males and 1:30,400 females in 1991 (Bakker *et al.*, 1993). Compared to other studies (Pauly, 1967; Wälinder, 1971; Hoenig and Kenna, 1974; Ross *et al.*, 1981), this is the highest reported figure so far in the Western world, though a bit lower than figures found in Singapore (1:9,000 males and 1:27,000 females) (Tsoi, 1988).

The sex ratio appears to be remarkably stable over the years, approximately 3 males to 1 female, in agreement with the findings of Tsoi in Singapore and other figures in the Western world, but in strong contrast with the figures in Poland. Godlewski (1988) found a ratio of 5.5 females to 1 male. The latter study was based on small numbers, but personal communications with treatment centers in other eastern European countries have revealed the same patterns of sex ratio as in Poland. The above sources also indicate that the sex ratio seems to be changing to the Western pattern

Table II. Province of Residence

	Male-to-female	Female-to-male	Total	Population (per km ²) ^a	Prevalence ($\times 10^{-5}$)
Provinces					
Drente	12	9	21	168	4.7
Flevoland	8	4	12	165	5.2
Friesland	22	11	33	179	5.5
Gelderland	42	31	73	365	4.0
Groningen	18	13	31	236	5.6
Limburg	30	21	51	514	4.6
Noord-Brabant	97	31	128	450	5.8
Noord-Holland ^{b,d}	109	37	146	663	10.9
Overijssel	39	15	54	309	5.2
Utrecht ^d	64	37	101	763	9.7
Zeeland	17	2	19	200	5.3
Zuid-Holland ^{c,d}	99	30	129	680	8.5
Major cities					
Amsterdam	163	42	205	1687	19.0
Den Haag	48	23	71	3260	10.3
Rotterdam	58	15	73	2506	6.9
Foreign countries					
EEC	50	13	63		
Non-EEC	96	19	115		

^aAs of Jan. 1, 1992, Statistisch Jaarboek 1993, Centraal Bureau voor de Statistiek,

's Gravenhage, sdu/uitgeverij, cbs-publikaties.

^bAmsterdam excluded.

^cRotterdam and Den Haag excluded.

^dUrbanized province.

in these Eastern European countries since the downfall of communism in the late 1980s.

Our data indicate that transsexuals live predominantly in the urbanized part of this country, particularly m-f transsexuals. In spite of being a small country, there used to be remarkable differences in social and religious characteristics between the 12 provinces of the Netherlands. This apparently does not influence the occurrence and manifestation of transsexualism since transsexuals appear to be rather evenly distributed over the country.

Between 1975 and 1984 the numbers of f-m transsexuals increased yearly; this process went on till 1989 in the m-f transsexuals. The numbers of f-m transsexuals receiving somatic treatment are fairly stable since 1984, but those of m-f transsexuals seem to decline from 1989 onward, but it is too early to draw definitive conclusions. As to the incidence of transsexualism, it could be hypothesized that in those years in which the numbers

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were rising, a catching-up of older transsexuals seeking reassignment treatment once this service had become available was occurring. The figures of age distributions over the years of the study period do not support this conclusion in the sense that in the early years of the program transsexuals were not older on average than in recent years.

Both in female-to-male and male-to-female transsexuals there is a greater difference over the last years between the figures of consultations for gender dysphoria and of actual somatic treatment. This is partly explained by the fact that in some (particularly the late onset cases) the diagnostic procedures may carry on over a prolonged period. But it is our impression that presently milder forms of gender dysphoria are seen that do not qualify for somatic treatment.

Most clinicians with experience in the care of transsexuals agree that there are striking differences between the characteristics of male-to-female transsexuals. In comparison to m-f transsexuals, f-m transsexuals present themselves earlier in life, which is in agreement with findings of other authors (Dixen *et al.*, 1984; Blanchard *et al.*, 1987). Female-to-male and female-to-male transsexuals are more often primary or early onset transsexuals and more often receive sex reassignment treatment. Male-to-female transsexuals present themselves generally later in life and a larger number are secondary or late onset transsexuals. Of the latter a considerable proportion receive no somatic treatment or hormones only and no surgery.

In our study of 1285, only 5 subjects (all male-to-female transsexuals) expressed regrets over their sex reassignment. The diagnosis of gender dysphoria had not been incorrect, but the outcome of their reassignment was on balance negative to the degree that later in life they wished they had not undergone it. All were late onset transsexuals. Our finding of a very low number of subjects with regrets is difficult to compare with other studies (reviewed by Blanchard and Sheridan, 1990), in which authors base their figures on the subjects' opinion shortly after surgery. Our data are of a more numerical nature, reflect the long-term situation, and provide less insight into the backgrounds of the regrets. Mortality among the male-to-female transsexuals was slightly higher than can be expected statistically. Suicide was not rare.

Our treatment program aims to keep sex reassigned transsexuals under lifelong medical supervision for various reasons. After sex reassignment they are agonadal and must receive cross-sex sex steroid substitution treatment to prevent osteoporosis. Further it is imperative to study the long-term effects of sex reassignment on psychological and somatic well-being. Female-to-male transsexuals are more cooperative in this endeavor than male-to-female transsexuals.

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ACKNOWLEDGMENT

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