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Cross-cultural approaches to transsexualism

A COMPARISON BETWEEN SWEDEN AND AUSTRALIA

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Several hypotheses with regard to the influence of societal factors including the rigidity of the society with regard to sex roles, sexual equality and homosexual behaviour were tested comparing prevalence, incidence and sex ratio of transsexualism between Sweden and Australia, two societies which differ with respect to these factors while otherwise remaining comparable as Western democratic societies of about the same size and level of technological development. Significant differences were found between the two countries in both frequency and sex ratio of transsexualism. These findings are discussed and it is concluded that societal influences seem to have an influence on the number of transsexuals presenting as patients. Further research is needed to assess whether these factors also influence aetiology and development of transsexualism.

Key words: Transsexualism: incidence – prevalence – sex ratio – societal influences – cross-cultural differences.

As in many other areas of human behaviour, the so-called nature-nurture controversy has been introduced into the realm of homosexuality, transvestism and transsexualism. In the case of the transsexual the biological school has suggested that hormonal imbalance, probably prenatal, causes neural pathways to develop in a way characteristic of the opposite sex, thus providing a predisposition towards opposite sex role behaviour and gender identity (*Money & Erhardt* (1972), *Money* (1974), *Money & Tucker* (1975), *Money & Daléry* (1976)). Factors which may include pathology of the central nervous system have also been suggested (*Wålinder* (1967), *Lundberg et al.* (1975), *Hoenig & Kenna* (1979)).

In contrast, the social school has tended to play down any biological basis and argued that the transsexual phenomenon is a product of social factors *(Ross et al.* (1978)). While in fact both schools of thought accept that causation is multifactorial, the two approaches can be characterized by these postulates of essential differences in causation.

Money (1974) sees transsexualism as an extreme case of cross-gender identification, with transvestism as a less extreme case and homosexuality even further down the continuum, with all three having their roots in hormonal imbalance at some period of development. Contrasting with such a view, *Ross et al.* (1978) have suggested that *Money's* scheme be reversed and that transsexuals are homo-

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sexuals with such a high degree of sex role conservatism and acceptance of conventional anti-homosexual attitudes that in order to validate their wish to have sex with members of their own sex they must change to the opposite sex in behaviour and, in more extreme cases, anatomy. The psychoanalytic viewpoint (*Alanko & Achté* (1971), *Kando* (1974), *Townes et al.* (1976)) also sees transsexuals as basically homosexual individuals. Similarly, *West* (1977) has noted that transsexualism might be considered an opportunity for a person to live as a homosexual without being branded one, a view given credence by the findings of *Pauly & Lindgren* (1976). Related to this, the social perspective also suggests that homosexuals may exhibit sex role behaviour typical of the opposite sex, not as a function of deviant gender identification but as a function of the strength of the societal differentiation of male and female roles. Such an approach to transsexualism cross-culturally would fit in with early anthropological findings (*Devereux* (1963)). *Devereux* noted that societies which had rigid sex-role differentiation, such as the Mojaves and Chuckchee, also supported transsexualism as an acceptable social role.

While these approaches may fit in with findings of a number of studies of transsexuals, *Bentler* (1976) found that transsexuals fitted into three groups, the first of which (effeminate homosexuals) would correspond with the social theory. The second group was composed of asexual individuals who gave wanting to have sex with a male as a major reason for requesting surgery. These could also probably be predicted by the social model. The third group, heterosexual and often ageing transvestites, cannot easily be fitted into the model proposed by *Ross et al.* (1978) unless they are seen as transvestites rather than transsexuals. However, *Buhrich & McConaghy* (1977) reviewed 12 similar cases and felt that they should be classified as transsexuals, having shifted from their original transvestism to requesting surgery. Thus, as with all general models, with both the social and biological models there will be cases which cannot be adequately explained without further research and modification of theoretical structures. Nevertheless, such theories provide a framework within which research can be carried out in that they set up empirically testable hypotheses which provide further information on the transsexual.

Four such empirical tests with regard to biological or social hypotheses concerning transsexualism would suggest that, *first,* if the phenomenon were a function of differentiation of sex roles, there would be a lower proportion of transsexuals in a society with a high degree of sexual equality and lower sex role differentiation than in one with low equality and high differentiation of roles. *Second,* if the biological explanation has some validity, then a trend would be expected to find the same proportions of individuals with transsexual orientations across similar societies. *Third,* in terms of cross-cultural differences, the ratio of male:female presenting for reassignment surgery would be expected to be constantly higher in the male direction if, as has been suggested by *Money & Erhardt* (1972), biologically there is more likelihood of problems occurring in males. If cross-cultural differences in ratio are apparent, then the social perspective would tend to be supported. *Fourth,* if as this perspective suggests, anti-homosexual attitudes in a society do produce a higher number of transsexuals,

then this would be indicated by a higher proportion of transsexuals in the anti-homosexual society together with a higher ratio of males to females presenting for reassignment surgery, as a function of legal pressures in most Western societies being directed more against males than females. Such findings, of course, need not be mutually exclusive of the other hypotheses.

However, it must be emphasized that such hypotheses could not provide a definitive test of one approach against the other: three factors must be considered in this regard. *First,* it is generally agreed that any causative influences are not simple but multifactorial: the biological approach suggests that biological factors may only provide a predisposition which social factors, including family situation, may or may not reinforce. *Second,* the differences in computation of statistics from one researcher to another must be made equivalent or recomputed on an identical basis if valid comparisons are to be made (see *Wålinder* (1967, 1968, 1971), *Pauly* (1968)). *Third,* societies compared must be equivalent in all other aspects other than those relevant to a test of the hypotheses (sex role differentiation and attitudes towards equality between the sexes, and attitudes and laws relating to homosexuality) if differences or similarities are to be attributed to these factors.

Such a series of comparisons can be made between Sweden, a country with relatively low sex role differentiation by world standards and with a history of legal support for equality between the sexes, and Australia, in almost all respects a similar Western democracy in terms of educational standards, living standards and cultural background. Comparisons of the two countries on political characteristics indicate that they are highly similar. *Banks & Gregg* (1965) found on their most important political dimension that Australia and Sweden had factor loadings within 0.001 of each other (0.918 vs 0.917), and *Sidanius et al.* (1979) computed the political similarity between the two countries at 0.972, expressed as a correlation of factor loadings across factors on the S5 conservatism scale. The exception is that Australia has relatively high sex role differentiation compared with Sweden and little legal support for equality between the sexes (*Dixson* (1976)). Both countries also differ markedly in the attitudes of their legal codes towards male homosexuals, with Sweden providing equality with heterosexuals under the law and all Australian states with only one exception providing penalties including up to 12 years imprisonment. In terms of statistics, equivalence could also be produced in that there are complete statistics and ample evidence for the transsexual phenomenon in Sweden (*Wålinder* (1967, 1968, 1971), *Wålinder & Thuwe* (1976)) whereas in Australia, statistics have not previously been computed and can be done on a similar basis to the Swedish ones. *Wålinder* (1967, 1968) calculated prevalence by circularising all psychiatrists in Sweden with a brief definition of transsexualism and a request for the number of any such cases they had dealt with, and computing both male:female ratio and prevalence from the number of such cases reported to him at a fixed census date. As a population the number of people over 15 years of age in Sweden was used. *Wålinder's* (1971) figures on incidence were calculated from the number of individuals applying to the government for reassignment. Following the passage of a law defining the process of reassignment in

Sweden (see *Wålinder & Thuwe* (1976)), the first preoperative stage of reassignment involves the commencement of hormone replacement therapy and change of name. Population estimates again involved only the total population over 15 years of age.

While such a comparison would not provide conclusive evidence for one approach over the other, results could be indicative of the relative strength of factors in the social sphere and provide a contribution in terms of both information and method to the transsexual phenomenon, particularly in view of the concentration of the bulk of previous studies on personality and biological aspects.

Hoenig & Kenna (1974) have commented that overall prevalence of transsexualism is difficult to establish, as the usual methods of epidemiological research are not available. Given the difficulties involved in establishing frequency rates for one country, it becomes apparent that the study of differences between societies is even more difficult. Nevertheless, from a theoretical point of view looking at cross-cultural incidences may provide a valuable insight into societal factors operating in the area of transsexualism, although conclusions must be made with caution.

There is ample evidence as to male:female ratio, incidence and prevalence of transsexualism in Sweden. *Wålinder* (1967) calculated the male:female prevalence ratio at 2.8:1 and indicated in his incidence figures that it had fallen to 1:1 (*Wålinder* (1971)). While these figures are not directly comparable, they suggest that the earlier recorded sex difference is levelling off. This finding is substantiated by *Hoenig & Kenna* (1974) who arrived at the same incidence sex ratio of 1:1. In an earlier study *Pauly* (1968) estimating figures for the United States, suggested that the ratio was about 4:1. *Wålinder* (1971) noted a rise in annual incidence of 0.08 through 0.13 to 0.23 per 100,000 population over 15 from 1967 to 1970, and concluded that this was probably due to an increase in publicity about sex reassignment surgery. In a later study the incidence had, however, somewhat decreased (*Wålinder et al.* (1979)).

METHODS

In the present study, questionnaires were sent to all psychiatrists in Australia inside the Australian and New Zealand Journal of Psychiatry, together with a reply-paid envelope. All registered psychiatrists in Australia receive this Journal. The questionnaire asked 1) the total number of transsexuals seen in the preceding 2 years (June 1976 to June 1978), 2) total male and female transsexuals seen, 3) number referred on for further assessment and 4) whether the practitioner worked in a unit specialising in transsexual cases. A total of 904 questionnaires could be returned: those sent overseas and to New Zealand were excluded from calculations. Of these, a total of 263 (29.1 %) were returned.

RESULTS

These returns indicated that a total of 272 transsexuals (as defined by *Wålinder* (1968)) had been seen in Australia the two years preceding the study. Of these, 29 were excluded as the respondents indicated they had seen these cases as a

Table 1. *Transsexualism: prevalence and sex ratio*

	Prevalence		Male/female
Wålinder (1967) Sweden	Females:	1:103,000	2.8:1
	Males:	1: 37,000	
	Total:	1: 54,000	
Hoenig & Kenna (1974) England and Wales	Females:	1:108,000	3.2:1
	Males:	1: 34,000	
	Total:	1: 53,000	
Ross et al. (present study) Australia	Females:	1:150,000	6.1:1
	Males:	1: 24,000	
	Total:	1: 42,000	

second referral to a transsexual unit. Biological males accounted for 209, females for 34 of the responses, giving a male:female ratio of 6.1:1. 118 (43.4 %) had been referred on for further assessment. Some of those not referred on were not referred for such reasons as youth (younger than 15 years) complicating mental illness (not as part of the transsexual symptomatology) or the wish to see them further. As a proportion of Australia's population over 15 on 31 June 1978, the transsexual prevalence was 2.4 per 100,000 of population over 15. As number per head of population, these figures correspond to 1:42,000 for the total, 1:24,000 for the males and 1:150,000 for the females (figures rounded to the nearest thousand).

If we regard those referred on to transsexual therapy groups for assessment and preparation for surgery as equivalent to the first official preoperative step in Sweden, the legal change of name and commencement of hormone therapy, then incidence figures can be computed on the basis of this group. In fact, with only one or two exceptions, patients being referred on for reassignment in Australia have already changed their names legally, and been on hormone replacement therapy for some time, in some cases several years. It would thus appear that referral to one of Australia's three transsexual therapy groups (although only one was still operating at the time of writing) corresponds closely to the Swedish stage of legal change of name and hormone replacement commencement. Incidence figures for Australia, based on such a sample of 118, are yearly, 0.58 per 100,000 of population over 15, and the male:female ratio 5:1 (99 males, 19 females). These figures appear to follow in ratio the trend for the prevalence figures, and are higher than the Swedish incidence figure of *Wålinder et al.* (1979) of 0.17 per 100,000 of population over 15. Obviously, in terms of the sizes of the populations on which these figures are based, statistical tests would be inappropriate and the differences between Sweden and Australia, in terms of both ratio and proportion, are clearly statistically significant. Observations of frequency and sex ratio are summarized in Tables 1 and 2.

DISCUSSION

In terms of the hypotheses proposed, one can make some tentative comments

Table 2. *Transsexualism: annual incidence and sex ratio per 100,000 inhabitants over 15 years*

	Incidence	Male/female
Hoenig & Kenna (1974)* England and Wales	0.17–0.26	1:1
Wålinder et al. (1980)** Sweden	0.17	1:1
Ross et al. (present study)*** Australia	0.58	5:1

Calculated on figures from the years: * 1966–1968; ** 1968–1978; *** 1976–1978.

about societal influences on transsexualism. There does appear to be a lower proportion of transsexuals requesting reassignment surgery in Sweden as compared with Australia. Many factors could be intertwined in producing this result. One would appear to be the one proposed by *Ross et al.* (1978) that the more rigid the lines are between the sexes in terms of sex-role differentiation, and the more anti-homosexual the attitudes in the society, the more people who in a freer society could deviate in terms of sex-role behaviour and sexual orientation feel they must change to fit within another, socially prescribed role. Because of the relatively low rate of return of the Australian data, the findings are lent greater weight. The figures here represent the *lowest* figure we can be certain of, whereas with the Swedish data we are reasonably certain that most cases have been recorded.

The reported progression of ratios in the United States, as well as in Sweden, towards 1:1 suggests that sexual equality may have an influence on transsexual sex ratios. This finding may also support the interpretation put forward in the first hypothesis above. The frequency figures are also significantly different across societies. This difference in proportion, we feel, is probably related to recent publicity given to sex-reassignment surgery, the availability of such surgery, as well as improved surgical procedures which give a more realistic result. It may also, at least to some extent, be due to a backlog of cases in Australia, where the operation has been performed only in the last 5 years.

The similarity of incidence and prevalence ratios in the present study tends to confirm previous findings that prevalence and incidence ratios do appear to show the same general patterns.

It could be argued that what data are available represent inception figures rather than figures for incidence and prevalence. This argument, of course, applies to all estimates of prevalence and incidence to a greater or lesser degree. However, as defined by *Wålinder* (1968), transsexualism involves such a strong desire to become a member of the opposite sex that surgical reassignment is essential to complete the transformation. Such reassignment requires consulting with a medical practitioner, usually a psychiatrist. While it may well be true that the threshold for making such a consultation is higher in a less liberal society, the direction and size of the difference between Sweden and Australia

are all the more significant. If inception thresholds were higher in Australia, then this would lead one to expect a *lower* estimate in Australia and a *higher* one in Sweden. Similarly, when it is taken into account that the Australian figures are based on incomplete returns, and that these figures come only from psychiatrists when a proportion of transsexuals may also have visited general practitioners or gynaecologists, it can be seen that if anything, the Australian data radically *underestimate* the magnitude of the phenomenon. The significance of the obtained differences is probably thus a conservative one.

While it is impossible to rule out conjecture when dealing with such data, it is difficult to escape the conclusion that societal pressures have some influence on the transsexual phenomenon. Undoubtedly further analysis on the basis of variations in rates over time in other countries, urban-rural comparisons, and transsexual sub-groupings will provide valuable comparative data.

In conclusion, it would appear that societal factors may play a part in the ratios and proportion of transsexuals presenting as patients. Two factors which we have tentatively identified include the degrees of sex-role differentiation in a society, and anti-homosexual attitudes. It is, of course, difficult to separate these two as in most societies they are positively correlated. While further research will be necessary to assess whether societal factors have an influence on the aetiology and development of transsexualism or simply affect the number of those presenting as patients, it is apparent that societal factors cannot be ignored in any theoretical approach to transsexualism.

REFERENCES

Alanko, A., & K. A. Achté (1971): Transsexualism. Psychiat. Fenn., 343–358.

Banks, A. S., & P. M. Gregg (1965): Grouping political systems: Q-factor analysis of a cross-polity survey. Amer. behav. Sci. *9*, 3–6.

Bentler, P. M. (1976): A typology of transsexualism: Gender identity theory and data. Arch. sex. Behav. *5*, 567–584.

Buhrich, N., & N. McConaghy (1977): Can fetishism occur in transsexuals? Arch. sex. Behav. *6*, 223–235.

Devereux, G. (1963): Institutionalised homosexuality of the Mojave indians. In *Ruitenbeek, H. M.* (ed.): The problems of homosexuality in modern society. Dutton, New York.

Dixson, M. (1976): The real Matilda: Women in Australian history. Penguin, Harmondsworth.

Hoenig, J., & J. C. Kenna (1974): The prevalence of transsexualism in England and Wales. Brit. J. Psychiat. *124*, 181–190.

Hoenig, J., & J. C. Kenna (1979): EEG abnormalities and transsexualism. Brit. J. Psychiat. *134*, 293–300.

Kando, T. (1974): Males, females and transsexuals: A comparative study of sexual conservatism. J. Homosexuality *1*, 45–64.

Lundberg, P. O., A. Sjövall & J. Wålinder (1975): Sella turcica in male-to-female transsexuals. Arch. sex. Behav. *4*, 657–662.

Money, J. (1974): Two names, two wardrobes, two personalities. J. Homosexuality *1*, 65–70.

Money, J., & J. Daléry (1976): Iatrogenic homosexuality. J. Homosexuality *1*, 357–371.

Money, J., & A. A. Erhardt (1972): Man and woman, boy and girl. Johns Hopkins, Baltimore.

Money, J., & B. Tucker (1975): Sexual signatures. Little, Brown, Boston.

Pauly, I. B. (1968): The current status of change of sex operation. J. nerv. ment. Dis. *147*, 460–471.
Pauly, I. B., & T. W. Lindgren (1976): Body image and gender identity. J. Homosexuality *2*, 133–142.
Ross, M. W., L. J. Rogers & H. McCulloch (1978): Stigma, sex and society: A new look at gender differentiation and sexual variation. J. Homosexuality *3*, 315–330.
Sidanius, J., B. Ekehammer & M. W. Ross (1979): Comparisons of socio-political attitudes between two democratic societies. Int. J. Psychol. *14*, 225–240.
Townes, B. D., W. D. Ferguson & S. Gillam (1976): Differences in psychological sex, adjustment, and familial influences among homosexual and non-homosexual populations. J. Homosexuality *1*, 261–272.
Wålinder, J. (1967): Transsexualism: A study of forty-three cases. Scandinavian University Books, Gothenburg.
Wålinder, J. (1968): Transsexualism: Definition, prevalence and sex distribution. Acta psychiat. scand. *203*, 255–257.
Wålinder, J. (1971): Incidence and sex ratio of transsexualism in Sweden. Brit. J. Psychiat. *119*, 195–196.
Wålinder, J., & I. Thuwe (1976): A law concerning sex reassignment of transsexuals in Sweden. Arch. sex. Behav. *5*, 255–258.
Wålinder, J., B. Lundström, M. W. Ross & I. Thuwe (1979): Transsexualism: Incidence, prevalence and sex ratio. Comments on three different studies. Paper presented at the VI International Gender Dysphoria Symposium. Coronado, CA, U.S.A., February 1979. To be published.
West, D. J. (1977): Homosexuality re-examined. Duckworth, London.

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