‘Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden’: A review of Dhejne et al’s findings on criminal convictions

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Long-Term Follow-Up of Transsexual Persons Undergoing Sex Reassignment Surgery: Cohort Study in Sweden

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Background

In 2011 Dhejne et al. published a peer-reviewed academic paper setting out findings from a cohort study aimed at estimating the ‘*mortality, morbidity, and criminal rate after surgical sex reassignment of transsexual persons*’ (2011: 1). Using a range of administrative data, including hospital records, census data and criminal convictions data the study ‘*captured almost the entire population of sex-reassigned transsexual individuals in Sweden from 1973–2003*’ (2011:7). These findings are, to the best of our knowledge, unique, nor are we aware of any comparable quantitative research that rebuts the findings.

Drawing on criminal convictions data, the study showed, among other findings, that male-to-female transitioners were likely to retain the same risk of male-pattern criminality both in relation to crime generally, and to violent crime. Dhejne et al. summarize this finding in the following terms:

> ‘In this study, male-to-female individuals had a higher risk for criminal convictions compared to female controls but not compared to male controls. This suggests that the sex reassignment procedure neither increased nor decreased the risk for criminal offending in male-to-females.’ (2011: 6)

Although expressed clearly, this finding has been subsequently disputed, principally as a result of comments made by the lead author in an article published in 2015 by *The Transadvocate*,[1] where Dhejne suggested that some people had misinterpreted the results.

This disagreement surfaced in December 2020, in relation to evidence submitted to the Women and Equalities inquiry on reform of the Gender Recognition Act. Giving oral evidence, Professors Rosa Freedman and Kathleen Stock referred to the original interpretation, as noted above, and followed this up with further written evidence. Their interpretation was then disputed in a written submission by Professor Alex Sharpe, which

[1] The Transadvocate (2015) Fact Check: Study shows transition makes trans people suicidal

cited Dhjene's later interview comments, and a written submission by Professor Ruth Pearce which stated, '*This study is widely but inaccurately cited by anti-trans groups on social media as evidence that trans women retain "male patterns" of criminality, an error repeated by Profs Freedman and Stock*.' In Scotland, correspondence accessed by Freedom of Information also shows that Scottish Government officials dismissed the relevance of the results to gender recognition reform, on the basis of the Transadvocate comments, and an article published by in Medium,[2] which also referred to the interview.

Against this background, this briefing overviews the key findings as presented in the original paper. We then examine the later comments made by the lead author, and argue that these are not consistent with the original findings. The original paper is open-access and can be accessed here.

Method

Using administrative data (hospital discharge data, census records, migration data, cause of death data and criminal justice data), the study identified 324 sex-reassigned persons (191 male-to-females, 133 female-to-males) for the period 1973–2003. Criteria for inclusion meant that all the sex-reassigned persons had either applied for or had approved sex-reassignment surgery (without concomitant psychiatric diagnoses), gone through all steps in sex-reassignment and changed sex legally.

For each of the 324 sex-reassigned cases, the study randomly matched 10 cases who did not meet the above criteria. Cases were matched using year of birth and sex. The controls for sex included ten cases with the same birth sex as the transitioned group (n=3,240), and ten cases with the same reassigned sex as the transitioned group (n=3,240).

The study compared the populations across a range of outcomes, principally different causes of mortality. Using court convictions data, the study also compared the two populations for court convictions for a) any criminal offence and b) any violent offence. Violent crime was defined as '*homicide and attempted homicide, aggravated assault and assault, robbery, threatening behaviour, harassment, arson, or any sexual offense'*. Tables 1 and 2 show the key criminal convictions results.

Table 1. Risk of various outcomes in sex-reassigned subjects in Sweden compared to population controls matched for birth year *and birth sex*.

Outcome	No. of events (male-to-female/ female-to-male)	Crude hazard ratio (95% CI)			Adjusted* hazard ratio (95% CI)		
		All sex-reassignment persons (N=324)	Male-to-female only (N=191)	Female-to-male only (N=133)	All sex-reassignment persons (N=324)	Male-to-female only (N=191)	Female-to-male only (N=133)
Any crime	60 (33/27)	1.9 (1.4-2.5)	1.2 (0.8-1.7)	5.6 (3.5-9.1)	1.3 (1.0-1.8)	*0.8 (0.5-1.2)*	**4.1 (2.5-6.9)**
Violent crime	14 (8/6)	2.7 (1.5-4.9)	1.8 (0.8-3.7)	9.9 (3.2-30.7)	1.5 (0.8-3.0)	*0.8 (0.3-2.1)*	**7.2 (2.1-24.4)**

[2] Gemma Stone (9 January 2018) Do trans women 'retain male pattern violence'? Medium

Table 2. Risk of various outcomes in sex-reassigned individuals in Sweden compared to controls matched for birth year and *final sex.*

Outcome	No. of events (male-to-female/ female-to-male)	Crude hazard ratio (95% CI)			Adjusted* hazard ratio (95% CI)		
		All sex-reassignment persons (N=324)	Male-to-female only (N=191)	Female-to-male only (N=133)	All sex-reassignment persons (N=324)	Male-to-female only (N=191)	Female-to-male only (N=133)
Any crime	60 (33/27)	2.1 (1.6-2.8)	7.4 (4.7-11.7)	1.1 (0.8-1.7)	1.6 (1.2-2.2)	**6.6 (4.1-10.8)**	*0.7 (0.5-1.1)*
Violent crime	14 (8/6)	2.3 (1.3-4.1)	20.0 (6.0-66.4)	1.1 (0.5-2.4)	1.7 (0.9-3.1)	**18.1 (5.4-61.2)**	*0.6 (0.2-1.6)*

Reading the results

The 'hazard ratio' measures how likely something is to be found in the transitioned group, compared to the matched control group. The 'adjusted hazard ratio' is intended to control for differences between the groups that might be due to other factors: different histories of 'severe psychiatric morbidity' and immigrant status. The crude and adjusted sets of results are, however, similar.

A score lower than 1 would mean that the incidence is lower in the transitioned group, compared to the matched control group. A score higher than 1 mean that the incidence is higher in the transitioned group, compared to the matched control group.

The bracketed figures are the confidence intervals: these are also important. These indicate the range within which the 'true' result can be predicted to lie with 95% confidence. This allows for the possibility that a different sample of comparator non-trans people might give a different result. The confidence interval is very wide in some cases, where the event being examined is rare in all groups (such as violent offending). Where the confidence interval has a range which includes the value of one, or 'crosses' the threshold of one (for example, 0.5-1.1) the difference between the two groups is deemed not to be statistically significant: that is, it could just have occurred by chance.

Key findings

Table 1 compares the respective transitioned groups with birth sex control groups: that is, the male-to-female transitioned group with the male control group, and the female-to-male transitioned group with the female control group.

These results show that for the male-to-female transitioned group, there is no statistically significant difference in either general criminal or violent convictions, compared to the male control group. There is however a significantly higher risk of criminality among the female-to-male transitioned group, compared to the female control group, both for all crime, which is 4.1 times higher (CI 2.5-6.9), and for violent crime, which is 7.2 times higher (CI 2.1-24.4).

The results in Table 2 compares the respective transitioned groups with their assigned sex control groups: that is, male-to-female transitioners with a female control group, and female-to-males transitioners with a male control group.

These results show that for the male-to-female transitioned group, there is a statistically significant and substantially higher conviction rate, compared to the female control group, both for general crime, which is 6.6 times higher (CI 4.1-10.8), and particularly for violent crimes, which is 18.1 times higher (CI 5.4-61.2).

For the females-to-male transitioned group, there is no statistically significant difference, when compared to the male control group. Taken overall, these findings indicate that:

- male-to-female transitioners are likely to retain the same risk of male pattern criminality, both for general crime, and for violent crime.
- female-to-male transitioners are likely to adopt male pattern offending. The scale of difference from the female group, is however smaller than that of the male-to-female transitioner group for all convictions, and for violent offending.

The authors describe the findings in the following terms:

> '*regarding any crime, male-to-females had a significantly increased risk for crime compared to female controls (aHR 6.6; 95% CI 4.1–10.8) but not compared to males (aHR 0.8; 95% CI 0.5–1.2). This indicates that they retained a male pattern regarding criminality. The same was true regarding violent crime. By contrast, female-to-males had higher crime rates than female controls (aHR 4.1; 95% CI 2.5–6.9) but did not differ from male controls. This indicates a shift to a male pattern regarding criminality and that sex reassignment is coupled to increased crime rate in female-to-males. The same was true regarding violent crime*.'

Dhejne's 2015 comments

In an interview published by The Transadvocate in 2015, the lead author made a series of comments, which appeared to refute the original findings on the persistence of male-pattern criminality (the interviewers questions are shown in the endnotes).[i] As noted earlier, these comments have subsequently been drawn on to dispute that the data shows male pattern offending among male-to-female transitioners. The interview answers cannot, however, be reconciled with the published data and provide no basis to reject the published findings. Below, we set out the 2015 interview in full, along with our comments.

Dhejne's 2017 comments

In a further exchange on reddit in 2017, with the same interviewer, Dhejne made the following comments in relation to the findings on criminality, which supports our reading of the study:

"*Regarding criminality there are only results from either both trans women and trans men and displayed for the whole period 1973-2003 and for the periods of 1973-1988 and the 1989-2003. If one is only interested in transwomen data is only available for the whole period*."

2015 interview with Cecilia Dhejne, by Cristan Williams

The Transadvocate, 2 November 2015

Dhejne: "*The individual in the image who is making claims about trans criminality, specifically rape likelihood, is misrepresenting the study findings*."

MBM: The interview considered a particular graphic in circulation at the time which purported to represent the study findings. The findings do not include specific results for any form of sexual assault. Any such offences would be included within the violent crime figure.

Dhejne: "*The study as a whole covers the period between 1973 and 2003. If one divides the cohort into two groups, 1973 to 1988 and 1989 to 2003, one observes that for the latter group (1989 – 2003), differences in mortality, suicide attempts, and crime disappear*."

MBM: This is a finding for the whole transitioned population, considered together, regardless of direction of transition, split by time (not shown in the tables above). The comment accurately reports that in the later period 1989 to 2003, the transitioned group *as a whole* had no statistically significant difference from the population *as a whole* for general criminal convictions, in contrast to the earlier period, when the transitioned group's conviction rates were slightly higher, with statistical significance. The research specifically notes that for violent crime it could not produce any statistically robust results separated by time period, so it provides no evidence on change over time for those. Over the entire period, although violent crime levels were higher than for the general population, this difference was not statistically significant.

Dhejne: "*This means that for the 1989 to 2003 group, we did not find a male pattern of criminality*."

MBM: This is the central statement which has been taken to dismiss the findings in Tables 1 and 2 above. But it does not follow from the previous comment, which relates specifically to data is not disaggregated by sex. Further, the published sex-separated data is not separated by time period, so cannot be used separately to support Dhejne's statement. The published results therefore provide no basis for making claims about what pattern applied for male-to-female cases during 1989-2003 specifically.

For Dhejne's statement to be true – given the substantial and statistically significant higher likelihood of conviction for the male-to-female group compared to the female population over the period as a whole, its closeness to the result for the male population across the whole period, the close resemblance of the transitioned population as a whole to the general population between 1989-2003, the larger number of male-to-female cases than female-to-male cases, and the clear inference in the data that male-to-female conviction rates were higher, compared to female-to-male ones across the period – it would require a hidden unpublished effect of male-to-female cases that departed substantially from the male population over 1989-2003. Such an effect would require implausibly extraordinary assumptions about the scale of offending for male-to-female cases between 1973 and 1988 and the fall between the two periods, and about the rise for female-to-male cases, between the two periods, for the maths to work. The authors do not at any point suggest in the original article that they observed any such extraordinary effects, let alone had calculated but not published statistically robust analysis of such effects.

Dhejne's statement is therefore only true in the trivial sense that patterns of criminality were simply not examined separately by sex for each period and so no such finding could be made. It is however in contradiction with the clear finding for the only period studied for this purpose (i.e. the whole period): which is that male-to-female cases had a pattern of conviction insignificantly different from that for the male population, and substantially and significantly higher than that of the female population.

Dhejne: "*As to the criminality metric itself, we were measuring and comparing the total number of convictions, not conviction type. We were not saying that cisgender males are convicted of crimes associated with marginalization and poverty. We didn't control for that and we were certainly not saying that we found that trans women were a rape risk*."

MBM: The issue here appears to be that the types of conviction might vary between the groups examined, but the comment overlooks that the researchers did analyse violent crimes as a separate category (but not, as Dhejne notes, rape).

Dhejne: "*What we were saying was that for the 1973 to 1988 cohort group and the cisgender male group, both experienced similar rates of convictions. As I said, this pattern is not observed in the 1989 to 2003 cohort group*."

MBM: This comment is not entirely clear, but again this seems to be intended to convey that the male-to-female transitioned group ceased to have a male pattern of convictions in the later period. As discussed above, this is not what the published data show and it requires extraordinary (implausible) assumptions about the nature of any unpublished figures to infer this from what has been published. Meanwhile the article as published makes a clear, well-evidenced statement about the comparative findings for male-to-female transitioners over the period as a whole.

In the absence of any new peer-reviewed publication based on the original data which provides further results split both over time and by sex, the original published results remains the best available large scale quantitative comparative study of conviction rates by sex and transitioner type.

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[i] The interviewer asked the following five questions:

1. As to the "male pattern regarding criminality" your study reviewed, would you please speak to whether your sample is representative of the trans population as a whole?

2. Does your study support the notion that trans women, epidemiologically speaking, are likely rapists?

3. Did your study show that trans women, epidemiologically speaking, are just as likely to rape cis women as cis men?

4. In the way that your study's morbidity and mortality sample is reviewed as two chronological groups, did you use the same chronological metric for your criminality sample and, if so, what did you find?

5. Is your "male pattern regarding criminality" a simple comparison of percentages of overall conviction rates between cis males and trans women or is it a quantitative conviction category comparison between the two? In other words, trans women (who may experience around a 50% unemployment rate4 5 6) will generally bear a greater burden of convictions associated with social oppression, poverty and homelessness (squatting, loitering, panhandling, prostitution and non-violent crimes such as drug use and petty theft) than cis men. When your study looked at the "male pattern regarding criminality" between cis men and trans women, are you saying that your data shows that cis men are being convicted for crimes associated with oppression, poverty and homelessness at a rate similar to that found in the trans population?