

Is Work Disability More Common among Same-sex than Different-sex Married People?

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Abstract

Background: Research has shown that sexual minority individuals have much higher risk of somatic and psychiatric morbidity as compared to heterosexual individuals. However, less is known whether this elevated level of poor health co-occurs with higher rates of work disability. Our aim was thus to examine the association between sexual orientation and risk of work disability.

Methods: Using Sweden's nationwide registers, we used a cross-sectional design and compared prevalence of work disability, sickness absence and/or disability pension, between same-sex and different-sex married women and men for two years, 1998 and 2008, and calculated odds ratios (OR) with 95% confidence intervals (CI) while adjusting for several confounders.

Results: Higher risk of at least one day of work disability was found among same-sex married women in both 1998 (OR: 1.5, 95% CI: 1.2-1.8) and 2008 (OR: 1.3, 95% CI: 1.2-1.5), as compared to different-sex married women. Same-sex married women also had higher risk of work disability >90 days 1998 (OR: 1.6, 95% CI: 1.2-2.1) and 2008 (OR: 1.5, 95% CI: 1.3-1.7). Also, same-sex married men had higher risks, however somewhat lower in 2008, of at least one day of work disability (OR: 1.6, 95% CI: 1.5-1.8) and >90 days in 2008 (OR: 2.0, 95% CI: 1.7-2.3), as compared to different-sex married men.

Conclusion: This study provides novel results, demonstrating that the previously identified health disparity based on sexual orientation is also reflected in elevated levels of work disability among sexual minority women and men. This finding calls for research to identify the underlying mechanisms leading to this health disparity, and tailored prevention strategies both in clinical settings and on a broader societal level to remedy this health disadvantage.

Keywords: Work disability; LGB; Gay; Marriage; Sick-leave; Disability pension; Register

Introduction

Research has repeatedly shown that lesbian, gay, and bisexual (LGB) individuals experience higher risk for both somatic and psychiatric diseases, as compared to heterosexual individuals [1-7].

In addition, it has been demonstrated that LGB individuals constitute a higher-risk group for health risk behaviors such as smoking, elevated levels of alcohol consumption and substance abuse, as well as higher body-mass index among women [5,7-10].

Also, there are some results of higher disability rates among sexual minority individuals [11-14], which is consistent with pernicious effects of minority stress. However, the prior studies are based on self-reported data and their findings should hence be interpreted in the context of possible misclassifications and recall biases.

Whether these health disparities also entail a higher risk for social consequences of such morbidity in terms of work disability (Sickness Absence (SA) or Disability Pension (DP)) is, however, not investigated.

A recent American study presented disability rates by separating couples into: same-sex-female; same-sex-male, and different-sex

married, by using data from the American Community Survey (ACS) Public Use Microdata Sample (PUMS) 2009–2011.

They found same-sex-female couples had higher rates of disability compared to the other three groups. Estimates for individuals in same-sex couples also had a greater degree of uncertainty [11].

Sickness absence refers to temporary work incapacity due to health issues. Several studies have investigated risk factors for SA, usually focusing on psychosocial and work environmental factors that may contribute [15-18].

When an individual's work capacity is permanently reduced due to disease or injury, Disability Pension (DP) can be granted. The risk factors, apart from serious health impairment, for DP are similar to those for SA, i.e., high workload and high psychological stress (often leading to musculoskeletal or mental diagnoses), frequent in- and outpatient care due to mental disorders and use of antidepressants (mental diagnoses), and previous long sick leave spells [19-21].

Sickness absence and DP have also been shown to entail a higher overall mortality risk [22,23].

Even a low number of sick-leave days [23], as well as being granted DP due to diagnoses with low mortality risk [22]; have been associated with a higher risk for premature death.

Sexual orientation-related health disparities have largely been explained by exposure to stress, related to membership in a socially disadvantaged and stigmatized group [24]. Stigma can function at different levels, at the individual level, e.g., self-stigma [25] at an interpersonal level, e.g., victimization [26], and at the structural level e.g., discriminatory legislation [27].

All this combined has been suggested to explain the well documented phenomenon that LGB individuals, as compared to similar heterosexuals, are more likely to report recent psychological distress, suicide ideation, and common stress-related mental disorders such as; depression or anxiety [28-34].

In recent years, extensive changes have been made in Sweden to reduce legislative discrimination against sexual minorities, accompanied with a continuous increase in social acceptance of sexual minorities [35,36].

Although, a cohabitation law for same-sex couples was introduced in 1988 and legislation enabling the legal right for same-sex couples to become registered partners was established already in 1995, the greatest changes regarding legislative discrimination have happened during the past fifteen years.

Several laws protecting LGB individuals against discrimination based on sexual orientation were passed in the beginning of the 21st century, focusing on discrimination in the workplace [11], and in 2003 a new legislation against hate speech towards sexual minorities was introduced [12].

In 2009, gender neutral marriage legislation was adopted [13]. Social acceptance has also increased. For example, the European Social Survey 2002-2014 includes a question assessing public attitudes toward homosexuality [37].

Over time, the proportion of respondents in Sweden that agreed to a statement that 'Gay men and lesbians should be free to live their own life as they wish' has continuously increased during the past 15 years, from 82% in 2002 to 87% in 2008 and 92% in 2014. These levels are on a par with those observed in the two countries with the most accepting attitudes pertaining to homosexuality: the Netherlands and Denmark.

The legal differences between the two civil status categories, registered partnership and marriage are minimal. Therefore, we hereafter call both registered partnership and same-sex married "same-sex marriage".

In this study we took advantage of the extensive and high quality nationwide registers in Sweden to compare the prevalence of work disability between same-sex married women and men and different-sex married women and men at two different time points, 1998 and 2008.

The former represents a time when same-sex partnership was newly legalized and many long-term couples changed to an official status. In contrast, 2008 represents a point in time where selection factors into same-sex partnerships are presumed to be closer to achieving a steady state and attitudes toward homosexuals are likely more tolerant.

We hypothesized that same-sex married individuals would have greater risk for work disability, measured as SA and DP, as compared to different-sex married women and men, reflecting the greater risk for social adversity associated with minority sexual orientation.

We also investigated the possibility that reductions in sexual minority stigma during the past decade in Sweden may have led to a

decline in sexual orientation-based health disparities and hence in a lowered risk for work disability among sexual minorities.

Data and Methods

Study population

Sweden has invested heavily in nationwide registers of all residents in Sweden. In the present study, we used the unique personal identity number, assigned to each resident in Sweden, to link information from several population-based registers [38].

Because our study focused on work disability, SA and DP, among married individuals, only individuals in working ages 18 to 64 years were eligible for inclusion. Two time periods (1st January-31st December 1998 and 1st January-31st December 2008) were investigated.

Marriage

We included all same-sex marriage individuals and all different-sex married individuals living in Sweden as of 31 December 1998 and 31 December 2008 respectively, from the Longitudinal Integration Database for Health Insurance and Labor Market Studies (LISA), held by Statistics Sweden.

SA and DP public insurance in Sweden

All residents in Sweden, aged 16-64 years, with income from work or unemployment benefits are covered by the same public sickness insurance; providing sick-leave benefits to people who have reduced work capacity due to disease or injury. Among employed individuals, sick pay is, in most cases, paid by the employer during the first 14 days of a sick-leave spell.

Absences from day 15 and onward are then covered by the National Social Insurance (SIA), with a replacement rate of about 80% of lost income up to a certain level. All individuals, also those without work income, can be granted DP if their work capacity is reduced due to disease or injury permanently or for a long time.

The DP covers approximately 65% of the lost income, up to a ceiling amount, and those without previous income get a basic amount. Both SA and DP can be granted for part-time (25, 50, or 75% of ordinary working hours) or full-time.

Outcome measures

Using information obtained from the National Social Insurance Agency's MiDAS database about SA and DP in the two years, we calculated the number of SIA reimbursed net days of SA and/or DP during each of the two years of interest (1998 and 2008 respectively).

Part-time days were then combined, e.g., two days of half-time SA or DP was counted as one net day. Two types of outcomes for work disability were used; having had at least one day of SA or DP or having had SA or DP for >90 days, during the year studied year.

Covariates

In analyses described below, we adjusted for the following individual level characteristics: sex, age (18-29, 30-39, 40-49, 50-59, 60-64), country of birth (Sweden, other Nordic countries, European Union (EU 25) without the Nordic countries, rest of the world), type of place

of residency (based on the H-classification scheme [39] collapsed into the following three categories: larger cities including suburbs (H1-H2), medium sized municipalities including suburbs (H3-H4), or smaller municipalities (H5-H6)), highest attained educational level (compulsory school or less i.e., 9 years or less; senior high school i.e., 10-12 years; college/university i.e., 13 years or more), individual disposable household income, categorized into quartiles, and whether or not the individual was living with children under the age of 18. These variables were extracted from LISA.

We also adjusted for HIV-infection as it has been shown that gay and bisexual men experience higher prevalence of HIV infection than heterosexual men and this may contribute to higher work disability rates, apart from the harmful effects of minority stress.

HIV-infection status was obtained from the National Patient Register if it appeared as a main or contributing diagnosis in 1997 or 1998 and in 2007 or 2008, respectively (ICD-10: B20-B24).

This register is held by the National Board of Health and Welfare and includes all individuals admitted to any psychiatric or general hospital since 1973 and has almost complete coverage [40].

From 2001 and onwards, specialized out-patient care is also recorded in this register and hence included when we extracted information on HIV in 2007 and 2008. In Sweden, health care is publicly funded and accessible to all residents for a low fee, resulting in a low financial barrier to seeking medical care.

Statistical Analysis

We compared same-sex married individuals and different-sex married individuals, in 1998 and in 2008, respectively, for the prevalence of having had at least one day with work disability (SA and/or DP) as well as having had that for more than 90 days.

To do so, we performed logistic regression analyses calculating odds ratios (OR) with 95% confidence intervals (CI) for work disability during 1998 and 2008, respectively.

We adjusted for potential confounders in three sequential models: Model 1) Age, country of birth, Model 2) Confounders adjusted for in model 1 with additional adjustment for: type of place of residency, educational level, net income, and living with children, and, for men only, Model 3) Adjustment for confounders in Model 2 with additional adjustment for HIV-infection.

Although formal test of effect modification by sex did not show a significant difference between women and men, separate analyses for women and men were motivated by extensive previous research showing sex differences in risk exposure, such as health-risk behaviors, among sexual minority individuals compared to heterosexuals [41-43].

Results

We identified 1,287 same-sex married individuals between ages 18 and 64 (whereof 34% women) in 1998 and 4,984 same-sex married individuals (whereof 51% women) in 2008 (Tables 1a and 1b).

	Women		Men	
	Same-sex married	Different-sex married	Same-sex married	Different-sex married
	n (%)	n (%)	n (%)	n (%)
N	441 (34)	1,243,977 (52)	846 (66)	1,156,240 (48)
Age in years				
-29	46 (10)	85,428 (7)	62 (7)	43,658 (4)
30-39	193 (44)	290,116 (23)	280 (33)	242,864 (21)
40-49	138 (31)	354,186 (29)	255 (30)	338,885 (29)
50-59	63 (14)	377,784 (30)	210 (25)	387,702 (34)
60-64	1(0)	136,022 (11)	39 (5)	142,285 (12)
Country of birth				
Sweden	364 (83)	1,039,758 (84)	640 (76)	975,100 (84)
Other Nordic country	29 (7)	58,175 (5)	63 (7)	42,672 (4)
EU25 except Northern Europe	12 (3)	33,267 (3)	40 (5)	31,126 (3)
Rest of the world	34 (8)	111,474 (9)	101 (12)	105,507 (9)
Missing	2 (1)	862 (0)	2 (0)	989 (0)
Type of place of residency				
Larger cities	258 (59)	421,846 (34)	630 (75)	396,377 (34)
Medium sized municipalities	115 (26)	445,196 (36)	154 (18)	414,406 (36)

Smaller municipalities	68 (15)	376,494 (30)	62 (7)	344,611 (30)
Educational level				
Low ≤9 years	62 (14)	292,185 (24)	119 (14)	303,755 (26)
Medium 10-12 years	180 (41)	558,810 (45)	320 (38)	502,399 (44)
High ≥13 years	194 (44)	372,245 (30)	385 (46)	334,032 (29)
Missing	5 (1)	20,296 (2)	22 (3)	15,208 (1)
Income				
Mean net annual income ^a	256 (109)	315 (1,193)	288 (141)	320 (1238)
1 st quartile (%)	42	26	33	23,8
2 nd quartile (%)	26.8	24.8	20.7	25.2
3 rd quartile (%)	21,3	24.6	21.9	25.5
4 th quartile (%)	10	24.5	24.5	25.5
Living with children <18 years of age				
No	358 (81)	473,204 (38)	840 (99)	413,477 (36)
Yes	83 (19)	770,329 (62)	6 (1)	741,913 (64)
HIV-infection^b				
No			840 (99)	1,155,353 (100)
Yes			6 (1)	41 (0)

Table 1a: Demographic characteristics, by sex and sexual orientation in 1998. ^akSek with standard deviations within parenthesis; ^bOnly men.

For both women and men, being in a same-sex marriage was associated with several individual characteristics. Among married women, this included being younger ($p < 0.001$), living in larger cities ($p < 0.001$), having more years of education ($p < 0.001$), having less mean annual income ($p < 0.001$), and being less likely to live with children ($p < 0.001$).

Among men, same-sex married men, as compared to different-sex married men, were more likely to be younger ($p < 0.001$), born outside of Sweden ($p < 0.001$), live in larger cities ($p < 0.001$), have more years of education ($p < 0.001$), have less mean annual income ($p < 0.001$), be less likely to live with children ($p < 0.001$), and be more likely to have HIV-infection ($p < 0.001$).

	Women		Men	
	Same-sex married	Different-sex married	Same-sex married	Different-sex married
	n (%)	n (%)	n (%)	n (%)
N	2,566 (51)	1,195,309 (52)	2,418 (49)	1,108,265 (48)
Age in years				
-29	331 (13)	80,740 (7)	134 (6)	43,766 (4)
30-39	997 (39)	269,062 (23)	552 (23)	225,560 (20)
40-49	787 (31)	322,275 (27)	876 (36)	313,130 (28)
50-59	361 (14)	332,970 (28)	623 (26)	327,526 (30)
60-64	90 (4)	190,262 (16)	233 (10)	198,283 (18)
Country of birth				
Sweden	2,152 (84)	936,165 (78)	1,706 (71)	880,601 (80)

Other Nordic country	135 (5)	43,821 (4)	196 (8)	32,411 (3)
EU25 except Northern Europe	97 (4)	36,200 (3)	143 (6)	33,749 (3)
Rest of the world	178 (7)	177, 870 (15)	369 (15)	160,100 (14)
Missing	4 (0)	1,253 (0)	4 (0)	1,404 (0)
Type of place of residency				
Larger cities	1,500 (59)	443,147 (37)	1,641 (68)	416,132 (38)
Medium sized municipalities	722 (28)	423,149 (35)	516 (21)	392,375 (35)
Smaller municipalities	344 (13)	329,013 (28)	261 (11)	299, 758 (27)
Educational level				
Low ≤9 years	170 (7)	162,898 (14)	221 (9)	191,472 (17)
Medium 10-12 years	836 (33)	522,559 (44)	892 (37)	500,095 (45)
High ≥13 years	1,538 (60)	493,728 (41)	1,249 (52)	402,737 (36)
Missing	22 (1)	18,690 (2)	56 (2)	16,379 (2)
Income				
Mean net annual income ^a	446 (681)	512 (1,886)	483 (340)	517 (2,009)
1st quartile (%)	35.3	25.7	32.1	24.2
2nd quartile (%)	29	25	21.8	25
3rd quartile (%)	21.7	24.7	20.6	25.4
4th quartile (%)	14	24.6	25.5	25.4
Living with children <18 years of age				
No	1,562 (61)	460,781 (39)	2,347 (97)	402,214 (36)
Yes	1,004 (39)	734,526 (62)	71 (3)	706,048 (64)
HIV-infection^b				
No			2,236 (93)	1, 107818 (100)
Yes			182 (8)	447 (0)

Table 1b: Demographic characteristics, by sex and sexual orientation in 2008. ^akSek with standard deviations within parenthesis; ^bOnly men.

Among married women in 1998, same-sex married women had higher risk of having at least one day of work disability (OR: 1.48, 95% CI: 1.19-1.84), as compared to different-sex married women (Table 2a).

They were also at greater risk of being work disabled for more than 90 days (OR: 1.59, 95% CI: 1.19-2.13), as compared to different-sex married women. Similar differences were found among men. Same-sex married men, as compared to different-sex married men, had higher

risk for having had at least one day of work disability (OR: 1.97, 95% CI: 1.65-2.36) as well as for being work disabled for more than 90 days (OR: 2.61, 95% CI: 2.09-3.26).

When additional adjustment was made for HIV-infection, the estimates were only slightly attenuated for same-sex married men (OR: 1.94, 95% CI: 1.62-2.32) for at least one day of work disability and (OR: 2.55, 95% CI: 2.04-3.19) for being work disabled for more than 90 days.

	n (%)	Model 1*	Model 2**	Model 3***
WOMEN				
Any SA/DP				
Different-sex married	187,180 (15)	1 (ref)	1 (ref)	

Same-sex married	92 (21)	1.6 (1.28-1.97)	1.5 (1.19-1.84)	
SA/DP >90 days				
Different-sex married	56,526 (5)	1 (ref)	1 (ref)	
Same-sex married	29 (7)	1.7 (1.31-2.33)	1.6 (1.19-2.13)	
MEN				
Any SA/DP				
Different-sex married	111,446 (10)	1 (ref)	1 (ref)	1 (ref)
Same-sex married	107 (13)	1.7 (1.42-2.01)	2.0 (1.65-2.36)	2.0 (1.62-2.32)
SA/DP >90 days				
Different -sex married	35,170 (3)	1 (ref)	1 (ref)	1 (ref)
Same-sex married	43 (5)	2.2 (1.75-2.71)	2.6 (2.09-3.26)	2.6 (2.04-3.19)

Table 2a: Prevalence of sickness absence (SA) and disability pension (DP) among same-sex married individuals in 1998, as compared to different-sex married individuals, expressed as odds ratios (ORs) with 95% confidence intervals (CI), by sex. * Model 1: Crude, adjusted for age, country of birth. **Model 2: Additional adjustments for: Place of residency, educational level, net income, and living with children. ***Model 3: Additional adjustment for: HIV-infection (men only).

Ten years later, in 2008, the work disability prevalence was somewhat lower among married persons in Sweden. Nevertheless, same-sex married women remained at greater risk than different-sex married women for at least one day of work disability (OR: 1.30, 95% CI: 1.15-1.47) and for being work disabled for more than 90 days (OR: 1.48, 95% CI: 1.31-1.66) (Table 2b).

	n (%)	Model 1*	Model 2**	Model 3***
WOMEN				
Any SA/DP				
Different-sex married	153,897 (13)	1 (ref)	1 (ref)	
Same-sex married	403 (16)	1.3 (1.19-1.43)	1.3 (1.15-1.47)	
SA/DP >90 days				
Different-sex married	47,596 (4)	1 (ref)	1 (ref)	
Same-sex married	111 (4)	1.3 (1.15-1.47)	1.5 (1.31-1.66)	
MEN				
Any SA/DP				
Different-sex married	89,829 (8)	1 (ref)	1 (ref)	1 (ref)
Same-sex married	208 (9)	1.4 (1.25-1.56)	1.6 (1.45-1.83)	1.5 (1.31-1.66)
SA/DP >90 days				
Different-sex married	27,869 (3)	1 (ref)	1 (ref)	1 (ref)
Same-sex married	75 (3)	1.7 (1.48-1.92)	2.0 (1.74-2.28)	1.8 (1.52-2.02)

Table 2b: Prevalence of sickness absence (SA) and disability pension (DP) among same-sex married individuals in 2008, as compared to different-sex married individuals, expressed as odds ratios (ORs) with 95% confidence intervals (CI), by sex. * Model 1: Crude, adjusted for age, country of birth. **Model 2: Additional adjustments for: Place of residency, educational level, net income, and living with children. ***Model 3: Additional adjustment for: HIV-infection (men only).

Again, a similar pattern was observed among men where same-sex married men revealed elevated risks for at least one day of work disability (OR: 1.63, 95% CI: 1.45-1.83).

As well as for being work disabled for more than 90 days (OR: 1.99, 95% CI: 1.74-2.28), as compared to different-sex married men. When additional adjustment was made for HIV-infection (men only) the estimates were only slightly attenuated.

Discussion

Although there is a myriad of studies linking health disadvantages to minority sexual orientation [1,3,4,6], it is still not clear to what extent these health disadvantages and disabilities have psychosocial consequences in terms of work disability. The few prior studies have solely studied “disability” and not work disability, and they have relied upon self-reported data, entailing risk of recall bias and misclassifications [11,14].

In the current study we capitalized on Sweden’s nationwide registers and studied work disability prevalence, measured as SA and DP, among same-sex married women and men, as compared to different-sex married women and men, during two different time points ten years apart; 1998 and 2008.

This study revealed a substantial higher risk of work disability among same-sex married individuals both in 1998 and in 2008, as compared to different-sex married individuals. Same-sex married women had excess risk for at least one day of work disability as well as for being work disabled for more than 90 days. The same was shown for same-sex married men when compared to different-sex married men. When additional adjustment was made for HIV-infection among men, the estimates were only slightly attenuated. However, we could not establish a decrease in the excess risk among same-sex married individuals between the two time points.

As a large body of literature has shown psychological distress to be more prevalent in sexual minority individuals, the higher risk for work disability found in our study is also what we hypothesized.

A recent Swedish study showed that those with psychological stress in relation to daily activities had higher risk of DP [19]. Sexual minority individuals have repeatedly been shown to experience higher rates of everyday stress due to so called minority stress [24], which is in line with our findings of higher risk for work disability.

The concept “minority stress” was first introduced by Meyer [24], and contains prejudice events, expectations of rejection, hiding and concealing of one’s sexual identity, internalized homophobia, and ameliorative coping processes. As stress is a contributing factor in much morbidity [36], it is not a stretch to assume that the excess stress experienced by, at least some, LGB individuals contributes to their higher risk for work disability.

Extensive research has shown that marriage is protective for health and longevity [44-47]. This is theoretically explained by processes related to social selection and social causation [48]. The social selection hypothesis posits that better-adjusted, healthier individuals become and remain married. The social causation hypothesis on the other hand, suggests that something about marriage causes positive changes and/or protects against negative changes in mental or somatic health.

It has been shown that intimate relationships may be especially important for individuals who find themselves outside the norm and

often in compromised social positions [49]. One could, therefore, assume that LGB individuals would benefit more than others from being in a stable relationship. Our study contains no data on the sexual orientation of non-married individuals and can thus not test these associations. Future studies are thus warranted.

The prevalence of work disability among different-sex married women and men in Sweden was higher in 1998 than in 2008 (Tables 2a and 2b). In crude numbers the difference in prevalence between different-sex married and same-sex married was less in 2008 as compared to in 1998. In contrast to what we hypothesized, we could however not detect an actual decrease in the excess risk among same-sex married individuals between 1998 and 2008.

This despite the increased social acceptance towards sexual minority individuals observed in recent years [37].

When adjusting for all covariates additional adjustment for HIV-infection among men did not affect same-sex married men’s risk of work disability. This was witnessed both in 1998 and in 2008.

Further, our data also replicate the common finding of more elevated morbidity in terms of work disability among women than among men (Tables 2a and 2b). This holds regardless of sexual orientation of the married individuals. Similar sex differences have been reported for the general population in other studies [50].

The strengths of this study include the population-based design, that all, not a sample, were included, the large number of same-sex married individuals, and the use of high-quality and nationwide register data with high completeness and validity. Thus, no self-reported data was used, i.e., eliminating recall bias, and missing data was uncommon. We were able to control for factors related to relationship status and health in our models, particularly socioeconomic position in terms of educational level and disposable household income, but also age, country of birth, type of place of residence, whether children were living in the household, and HIV infection among men.

However, this study also has some limitations that need to be addressed. First, we only included married LGB individuals in this study our results can therefore not be generalized to all LGB people. Second, there may be other confounding factors that we did not adjust for in these analyses.

As the SA and DP data cover reimbursements from the National Social Insurance Agency, most sick-leave spells lasting less than 15 days were hence not included. However those with recurrent diseases as well as those unemployed, had benefits paid by the Social Insurance Agency from the first or second day of work disability, which means that they might have been overrepresented in the analyses.

In conclusion, this study provides new results that same-sex married women and men have higher risk for work disability as compared to different-sex married women and men. This finding calls for more research regarding the underlying mechanism leading to these observed differences based on sexual orientation, as well as for tailored prevention strategies both in clinical settings and on a broader societal level, directed at same-sex married women and men.

Ethical Approval

The project was approved by the Regional Ethical Review Board in Stockholm, Sweden.

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