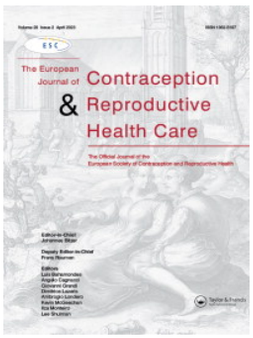

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RESEARCH ARTICLE

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Multiple induced abortions – implications for counselling and contraceptive services from a multi-centre cross-sectional study in Sweden

Cerisa Obern[a], Maria Ekstrand Ragnar[a,b], Tanja Tydén[a], Margareta Larsson[a], Jenny Niemeyer Hultstrand[a], Kristina Gemzell-Danielsson[c,d], Inger Sundström-Poromaa[a] and Marlene Makenzius[c,e,f]

[a]Department of Women's and Children's Health, Uppsala University, Uppsala, Sweden; [b]Department of Health Sciences, Lund University, Lund, Sweden; [c]Department of Women's and Children's Health, Karolinska Institutet, Stockholm, Sweden; [d]WHO centre, Karolinska University Hospital, Stockholm, Sweden; [e]Department of Global Public Health, Karolinska Institutet, Stockholm, Sweden; [f]Department of Health Sciences, Mid Sweden University, Östersund, Sweden

ABSTRACT

Objectives: To investigate factors associated with multiple induced abortions.

Materials and methods: A multi-centre cross-sectional survey among abortion-seeking women ($n = 623$;14-47y) in Sweden, 2021. 'Multiple abortions' was defined as having had ≥2 induced abortions. This group was compared to women with a previous experience of 0-1 induced abortion. Regression analysis was conducted to determine independent factors associated with multiple abortions.

Results: 67.4% ($n = 420$) reported previous experience of 0-1 abortion, and 25.8% ($n = 161$) ≥2 abortions (42 women chose to not respond). Several factors were associated with multiple abortions, but when adjusted in the regression model, the following factors remained; parity ≥1 (OR = 2.96, 95%CI [1.63, 5.39]), low education (OR = 2.40, 95%CI [1.40, 4.09]), tobacco use (OR = 2.50, 95%CI [1.54, 4.07]) and exposure to violence over the last year (OR = 2.37, 95%CI [1.06, 5.29]). More women in the group who had 0-1 abortion ($n = 109/420$) believed they could not become pregnant at the time of conception, compared to women who had ≥2 abortions ($n = 27/161$), $p = .038$. Mood swings, as a contraceptive side-effect, were more often reported among women with ≥2 abortions ($n = 65/161$), compared to those with 0-1 abortion ($n = 131/420$), $p = .034$.

Conclusion: Multiple abortions is associated with vulnerability. Sweden provides high quality and accessible comprehensive abortion care; however, counselling must be improved both to achieve contraceptive adherence and identify and address domestic violence.

SHORT CONDENSATION

Seeking multiple abortions is common in Sweden, and is associated with parity, low education, tobacco use, and exposure to violence. Although Sweden provides high quality and accessible comprehensive abortion care, counselling must be adaptable and address specific needs in vulnerable groups.

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KEYWORDS
Comprehensive abortion care; multiple abortion; repeat abortion

Introduction

Reproductive behaviour is shifting globally, and it has become more common to delay childbearing until a later, sub-fertile period or to not have children at all. The reasons behind this shift may range from cultural- or personal values, such as religious beliefs [1] or difficulties in finding the right partner [2], to economic and career goals [2,3]. Effective contraception is required to prevent pregnancy and to postpone childbearing; however, up to 64 per 1,000 women globally will become unintendedly pregnant each year, 61% of whom will seek an abortion [4].

Varying factors influence the likelihood of having multiple abortions. Previous studies have found multiple parity and higher age as influencing factors [5,6]. Other factors associated with multiple abortions are unemployment or sick leave, low educational level [6–8], and interpersonal problems, such as lack of emotional support [8] and/or physical or sexual violence [9,10]. Tobacco use has also been shown to be associated with multiple abortions [8,11]. Although studies have suggested effective contraceptives [12,13], improved contraceptive counselling and more frequent visits [13] as the keys to lowering the risk of multiple abortions, these factors do not address the individual situation many patients find themselves in. Additionally, most women seeking care for a subsequent abortion used contraception at the time of conception, which may suggest either high fecundity or the need to personalise contraceptive counselling, offering more suitable and effective methods [6,7].

Reproductive rights and the ability to decide one's reproductive choices are contingent on access to antenatal, maternity, abortion care and effective contraception. For nearly five decades, Sweden has protected and prioritised women's access to the above-mentioned in law. Abortion became legal in 1974 and is permitted until gestational

CONTACT Marlene Makenzius marlene.makenzius@miun.se The Department of Health Sciences, Kunskapens väg 8, Östersund, 83145, Sweden

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week 21 plus 6 days. New legislation passed in 2017 guarantees free contraception for all women under 21 years of age [14], and in addition, many regions provide subsidised contraception until 26 years of age [15]. Prescription of long-acting reversible contraceptives (LARC), including intrauterine devices (IUD) and implants, has increased in Sweden [16], allowing women to have more effective control over their reproductive choices. Contraceptive counselling is included in the pre-abortion consultation. If an LARC method is chosen, national guidelines advise immediate insertion of the implant or, alternatively, insertion of an IUD within a week post-abortion. Yet, due to a shortage of health care personnel, lack of time and outdated routines, fewer than half of the clinics in Sweden adhere to these guidelines [17].

Sweden has the highest abortion rate in the Nordic countries, but also the most liberal abortion law and highest fertility rate [16]. In 2021, 33,770 abortions were performed in Sweden, corresponding to 18 abortions per 1,000 women. Although this number has steadily decreased over the years, the number of women who seek care for multiple abortions has grown reaching 46% of abortions in 2021 [14]. Overall, between 30 to 38% of the abortions in Northern Europe are not a first abortion [11]. Socioeconomic data on women seeking an abortion is not officially recorded in Sweden. Consequently, there is a lack of knowledge about background characteristics and other factors associated with multiple abortions. Such knowledge could be used to adapt counselling strategies to changes in sociodemographic patterns and to the individual needs of women seeking abortion care.

Aim

The aim of this study was to investigate factors associated with multiple induced abortions.

Materials and methods

The study had a multi-centre cross-sectional design and was conducted between January and June 2021 at seven family planning clinics in different geographical regions of Sweden. The respondents, based on convenience sampling, were women seeking an induced abortion up to the end of gestational week 12. An estimated 1,029 abortion-seeking women visited the seven clinics during the study period. Among them, an estimate of 670 (65%) women were invited to participate, and 623 (93%) agreed to participate. The most common reasons for not being invited to participate were staff lack of time, that the woman did not speak Swedish or that the woman showed ambivalence to the abortion-decision. The women were asked to participate by the clinic staff, who distributed an information leaflet. Those who agreed to participate filled out an anonymous paper questionnaire and returned the questionnaire to the staff, which was regarded as informed consent.

The questionnaire was constructed in 1999 by Larsson et al. [18] and revised 2009 by Makenzius et al. [8] and contained 39 questions. Additional questions regarding aspects of Covid-19 and women's experiences in relation to the abortion were added in 2020: This data is presented elsewhere [19,20]. The main outcome for the current sub-study was to identify factors associated with multiple induced abortions (Tables 1 and 2).

Statistical analysis

The group 'multiple abortions' was defined as women who had had ≥2 induced abortions. This group was compared with women with previous experience of 0-1 induced abortion. Univariate and multivariate analysis were conducted, using one sample T-test and $\chi 2$ two-tailed tests. Self-rated well-being before finding out about the pregnancy was measured by using a 4-pointed Likert scale: 'very good' = 1, 'neither good, nor poor' = 2, 'sort of poor' = 3, or 'very poor' = 4. These were dichotomised into: 'good' (scored 1–2) and 'poor' (scored 3–4). Multiple logistic regression analysis (Table 2) was performed to identify independent factors associated with multiple abortions. For this analysis, we included the significant variables revealed by univariate analysis (Table 1). Further, for the multiple logistic regression analysis ($n = 398$), an age filter ≥25 was used as some variables were highly correlated with age (parity and education level). A p-value $< .05$ was considered significant for all analysis, and odds ratios (OR) and 95% confidence intervals (CI) were calculated for the multivariate analysis, using IBM SPSS Statistics 27.

Women received oral and written information that participation was voluntary. The questionnaire did not include any personal data, and therefore the Swedish Ethical Review Authority declared that no formal ethical approval was needed (2020–05951).

Results

The internal non-response rate varied between 1–3%, except for the question about previous experience of induced abortion, which had an internal non-response of 6.7% ($n = 42$). Among the women ($n = 581/623$) who responded to the question regarding the number of previous induced abortions, 51.8% ($n = 302/581$) had had at least one previous abortion (range 1-8), and the overall mean was 1.03 and median 1.0 (Figure 1).

The overall median age was 29, 27.5 years among the women with experience of 0-1 induced abortion, and 31 years among the women with experience of ≥2 induced abortions. The characteristics of the women are shown in Table 1.

More women in the group who had 0-1 abortion ($n = 109/420$) believed they could not become pregnant at the time of conception, compared to women who had ≥2 abortions ($n = 27/161$), $p = .038$. Reporting mood swings from hormonal contraceptive use was more common among the women with ≥2 abortions ($n = 65/161$), compared to those with 0-1 abortion ($n = 131/420$), $p = .034$.

Table 2 shows the OR (CI 95%) for factors associated with multiple abortions (≥2). These factors were parity ≥1 (OR = 2.96), elementary or upper secondary education (OR = 2.40), tobacco use (OR = 2.50), and exposure of physical, psychological and/or sexual violence over the last 12 months (OR = 2.37).

Discussion

The aim of this study was to investigate factors associated with multiple abortions. Independent factors associated with multiple abortions were parity, lower educational level, use of tobacco, and experience of physical, psychological, and/or sexual violence during the past 12 months.

Table 1. Characteristics of the abortion-seeking women.

Characteristics (self-reported)	Total $N = 623$ n (%)	Previous induced abortions 0-1 $n = 420$ n (%)	Previous induced abortions ≥2 $n = 161$ n (%)	P-value
Age $n = 618$ (range 14-47 years)				
Mean ± SD	29.9 ± 6.0	28.1 ± 6.8	30.8 ± 5.7	< .001[a]
14–19	46 (7.4)	43 (10.2)	2 (1.2)	
20–24	128 (20.7)	98 (23.3)	24 (14.9)	
25–29	152 (24.6)	105 (25.0)	35 (21.7)	
30–34	164 (26.5)	96 (22.8)	60 (37.3)	
≥35	128 (20.7)	78 (18.6)	40 (24.8)	
In a steady relationship $n = 614$				
Yes	477 (77.7)	326 (77.6)	124 (77.0)	.764[b]
No	137 (22.3)	91 (21.7)	37 (23.0)	
Country of birth $n = 613$				
Sweden	526 (85.8)	358 (85.2)	138 (85.7)	.945[b]
Other Nordic countries	6 (1.0)	4 (-)	2 (-)	
Outside the Nordic countries	81 (13.2)	54 (12.8)	20 (12.4)	
Previous children $n = 623$				
0	271 (43.5)	231 (55.0)	40 (24.8)	<.001[b]
1	92 (14.8)	62 (14.8)	30 (18.6)	
2	152 (24.4)	88 (21.0)	60 (37.3)	
3/+	108 (17.3)	39 (9.3)	27 (16.8)	
Had a previous induced abortion due to the Covid pandemic $n = 527$				
Yes	19 (3.6)	7 (1.7)	10 (6.2)	.009[c]
No	508 (96.4)	354 (84.3)	126 (78.3)	
Educational level $n = 616$				
Elementary school	75 (12.2)	45 (10.7)	27 (16.8)	.077[b]
Upper secondary school	364 (59.1)	247 (58.8)	96 (60.0)	
Post-secondary school or university	177 (28.7)	126 (30.0)	38 (23.6)	
Occupation $n = 618$				
Student	128 (20.7)	95 (22.6)	27 (16.8)	.112[c]
Employed	398 (64.4)	271 (64.5)	103 (60.0)	
Unemployed	39 (6.3)	21 (5.0)	15 (9.3)	
Housewife/maternity leave/other	53 (7.0)	33 (7.8)	16 (9.9)	
Poor economy (self-reported) $n = 614$				
Yes	166 (27.0)	128 (30.5)	35 (21.7)	.039[c]
No	448 (73.0)	289 (68.8)	125 (78.0)	
Tobacco use $n = 613$				
Smokes daily or sometimes	179 (29.2)	106 (25.2)	57 (35.4)	.044[b]
Snuff use daily or sometimes	132 (21.5)	74 (17.6)	39 (24.2)	.022[b]
Smokes and/or snuff use daily or sometimes	262 (42.7)	155 (36.9)	96 (60.0)	<.001[b]
Wellbeing $n = 623$				
Poor physical wellbeing before finding out about the pregnancy	72 (11.6)	38 (9.0)	13 (8.1)	.005[b]
Poor mental wellbeing before finding out about the pregnancy	99 (15.9)	57 (13.6)	23 (14.3)	.023[b]
Consent to sex at the time of conception $n = 597$				
No	28 (4.7)	12 (2.8)	11 (6.8)	.003[b]
Do not remember	14 (2.3)	7 (1.7)	3 (1.9)	
Yes	555 (93)	392 (93.3)	135 (83.8)	
Experience of violence the last year				
Experience of physical violence during the previous 12 months, $n = 579$	20 (3.5)	11 (2.6)	7 (4.3)	.215[b] .273[c]
Experience of psychological violence during the previous 12 months, $n = 589$	46 (7.8)	24 (5.7)	17 (10.5)	.027[b] .042[c]
Experience of sexual violence during the previous 12 months, $n = 584$	22 (3.8)	15 (3.6)	5 (3.1)	.895[b] 1.00[c]
Experience of either physical, psychological and/or sexual violence during the previous 12 months, $n = 594$	53 (8.9)	32 (7.6)	21 (13.0)	.023[b] .032[c]

[a]Two sample t-test.
[b]Pearson's $\chi 2$.
[c]Fisher exact two-sided test.

A selected group of women who seek care for multiple abortions during a lifetime are particularly vulnerable. Although only 53 women reported being the victim of sexual, psychological, or physical violence, scaled to the national population's level (more than 1% of the population), this number constitutes a public health issue [21]. Previous studies have also found a link between having multiple abortions and sexual, physical, and/or psychological violence [9,10,22]. Leeners et al. [2017] suggest these relational problems, such as being a victim of abuse, may even affect contraceptive usage. Providing services beyond basic medical routines is a pillar of inclusive sexual and reproductive health and rights (SRHR). Therefore, questions regarding violence should be mandatory in abortion counselling, and routines should be in place when domestic violence is disclosed. It should also be mentioned that women who have had multiple abortions demonstrate similar characteristics to men who have partners who have had multiple abortions. Independent factors associated with multiple abortions for these men were being a victim of physical, psychological, or sexual violence or abuse over the past year, unemployment or sick leave and parity [23].

Although an abortion should always be the woman's choice, men play an important role in pregnancy prevention

Table 2. Odds of having had multiple abortions (≥2), among the women aged 25–47 years ($n = 398$).

				CI 95%	
Independent variables	B	Sig.	OR	Lower	Upper
Age: 30–34 Ref: 25–29	.41	.176	1.50	.83	2.73
Age: ≥35 Ref: 25–29	.42	.213	1.52	.78	2.94
Parity ≥1 Ref: 0	1.08	<.001	2.96	1.63	5.39
Elementary or upper secondary school Ref: Post-secondary school or university	.87	.001	2.40	1.40	4.09
Tobacco use (smoke and/or snuff). Ref: No	.91	<.001	2.50	1.54	4.07
Poor physical and/or mental wellbeing before pregnant Ref: Good	.24	.460	1.27	.66	2.44
Experience of physical, psychological and/or sexual violence in the last 12 months Ref: No	.86	.034	2.37	1.06	5.29

[a]The model summary; Cox and Snell's R2= .164, Nagelkerke's R2= .237, and Hosmer–Lemeshow $\chi 2 = 6.313$ (df = 8), $p = .633$.

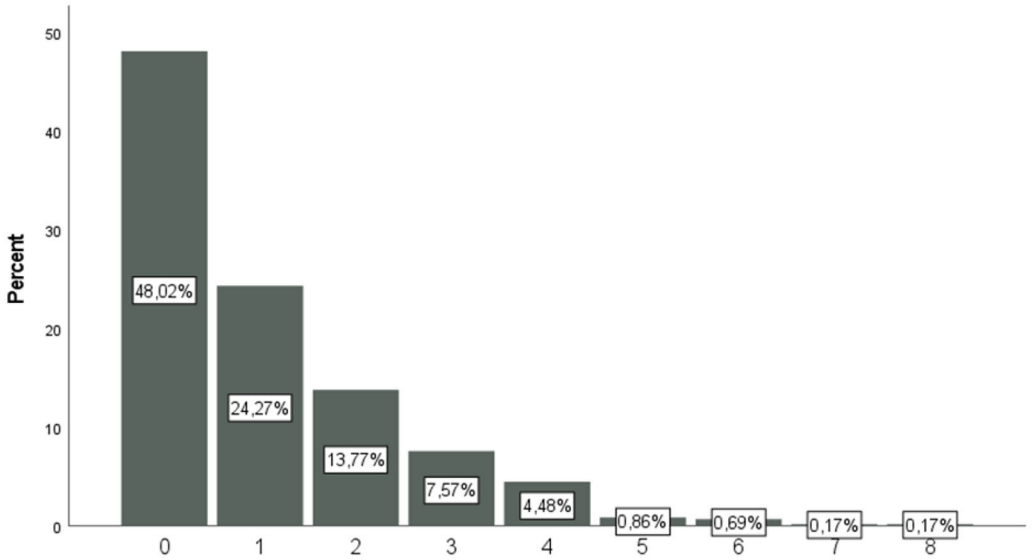

Figure 1. The distribution of previous induced abortions among the abortion-seeking women ($n = 581/623$), presented in valid percentages.

[21]. Environmental factors, such as racial discrimination, culture, socioeconomic problems, and peer pressure, can create rigid gender norms and feelings of powerlessness among men that result in risky sexual behaviours and consequently lead to an increased risk of unintended pregnancy [24]. Therefore, school-based sexuality education must include integrated discussions about gender and power to develop more equitable behaviours and healthier relationships. In fact, Sweden has recently changed its sexuality education to focus more on values and consensual sex.

Women who had multiple previous abortions often had lower levels of education, which concurs with previous research [5]. Tobacco use (both cigarette and snuff) was also associated with multiple abortions, and smoking has been previously shown to be coupled to lower levels of education [25]. Moreover, former research has pointed to lower contraceptive use in areas with lower socio-economic status [26].

Health literacy plays an important role in reproductive knowledge and may impact behaviours and outcomes [27]. Thus, improving sexual and reproductive health amongst the most disadvantaged and marginalised social groups will reduce inequities in health. Health literacy implies a level of knowledge, personal skills, and confidence to take action to improve one's health by changing lifestyles and living conditions. Although sexuality education is compulsory in Sweden, the instruction and information included varies greatly between and within schools. A previous study found that nearly one third of teenagers and young adults reported the information taught during these classes as poor, and many important topics such as abortion and emergency contraception, insufficient [28]. More women in the group with 0-1 abortion believed they could not become pregnant at the time of conception. This finding could be interpreted as lack of fertility awareness or poor health literacy. High quality school-based sexuality education as well as services for adolescents are essential to ensure they can access, understand, and apply SRHR knowledge to decision-making to benefit their own health and make informed reproductive choices.

The ability to make reproductive choices depends on affordable, effective, and safe contraceptives. Although implants and IUDs are very effective, narratives that herald LARC as the most effective way to decrease abortions may contribute to myopic communication during contraceptive counselling. In one study, women receiving contraceptive counselling after an abortion at times felt pressured or coerced to choose an LARC method or to decide quickly. This pressure may result in women not following through with their contraceptive of choice [29]. It is important to address the unmet contraceptive need by providing more nuanced counselling with sufficient time to discuss side

effects and other contraceptive options. Indeed, previous research has shown that women who have sought care for multiple abortions require individually tailored, respectful counselling from a skilled health practitioner willing to clearly explain health benefits and various methods at the patient's pace [30].

Providing individually tailored contraceptive counselling can be challenging and time-consuming and managing side effects from contraceptive usage can be problematic. This study found that mood swings were associated with the experience of multiple abortions. Mood swings are a commonly reported side effect of contraceptive usage [31], and the number of women who experience changes in their mental and emotional state while using contraceptives is increasing. Lindh et al. [2016] found that the number of women who ceased to use combined oral contraceptives due to mental side effects increased from 15 percent to 55 percent over a 30-year period. However, mental health effects may be attributed to previous psychiatric/psychological symptoms/disorders as opposed to a causal relationship with the contraceptive [32]. Fear of hormones' side effects has increased in recent years, the clinical impact of which was seen in a study where induced abortions were twice as common among those expressing concerns about hormones [33].

Limitations

This was a cross-sectional study, which is a limitation as the temporal link between the outcome and the exposure cannot be determined because both factors are examined at the same time. This uncertainty is amplified by the fact that a third of the women were not asked to participate due to staff's lack of time, and women showing ambivalence about the abortion decision. In addition, 42 women did not respond to the question regarding the number of previous induced abortions, which is higher when compared to other questions in the questionnaire. Even if the abortion law in Sweden is liberal, abortion is still a sensitive topic and some women may not want to provide information about their abortion history, as has been previously discussed [5]. Why abortion may be a sensitive topic can be explained by fundamental views of life and death, existential thoughts, or cultural and religious beliefs, even in a highly secularised country such as Sweden [34]. Thus, it can be assumed that the number of multiple abortions reported in the current study is likely to be under-reported, and the data showing a history of multiple abortions is therefore not exaggerated.

It should also be mentioned that non-Swedish women were excluded by default of the survey only being provided in Swedish. The exclusion of women who did not speak Swedish may have introduced a selection bias. Lastly, as this study was conducted *via* survey, it could not encompass the breadth of experience each woman has had, and the findings are limited to what was asked in the questionnaire.

Implications

The findings from this study adds further nuance to the circumstances and independent factors associated with seeking care for multiple abortions. Many of the predictors are difficult to alter, both for the women themselves and for health professionals. Health professionals have previously emphasised the challenging nature of providing contraceptive counselling to women with vulnerabilities [35]. Kilander et al. [2016] concluded that contraceptive counselling pre-abortion is further complicated by the logistics of planning for the insertion of IUDs post-abortion, time constraints, and the need to improve their counselling to prevent repeat unintended pregnancies. Therefore, health officials and politicians must ensure that all facets of society, particularly those with low socioeconomic status, have access to updated sexual health and contraceptive information to allow for informed health decisions. Furthermore, health care providers must have updated information on contraceptives, enough time to tailor their counselling to vulnerable patients, and the availability to plan for the insertion of IUDs or implants post-abortion without issues.

Conclusion

Seeking care for multiple induced abortions is common in Sweden and is associated with vulnerability. Having multiple abortions is associated with experience of violence in the last year. To further improve abortion care in Sweden, counselling must be adaptable and address specific needs in vulnerable groups. Providing services above and beyond basic medical routines should be a pillar of inclusive SRHR.

Author contributions

TT, ML, MER, ISP and MM contributed to the design of the study and data collection. Statistical analysis was performed by MM and CO, and drafting of the paper was conducted by CO and MM, with constructive feedback from all authors. All authors have read and approved the final manuscript.

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Disclosure statement

KG-D has received consulting fees and/or payment or honoraria from Bayer, MSD, Gedeon Richter, Mithra, Exeltis, MedinCell, Cirqle, Natural Cycles, Exelgyn, Campus Pharma and HRA-Pharma. KG-D has been involved in advisory boards of Gedeon Richter, Organon, and Bayer. KG-D is a member of the FIGO council, a former member of STAG, and current Director of a collaborating centre, WHO HRP/SRH, Geneva. KG-D is emeritus member of the ICCR, Population council, past president of the European Society for Contraception and Reproductive Health, and FIAPAC, and is an honorary Fellow of FSRH/RCOG (UK) honorary professor at HKU. IS-P has served occasionally on advisory boards or acted as an invited speaker at scientific meetings for Asarina Pharma, Bayer Health Care, Gedeon Richter, Peptonics, Shire/Takeda and Sandoz. No conflicts of interest are reported by any other authors.

ORCID

Cerisa Obern http://orcid.org/0000-0003-0731-7169
Maria Ekstrand Ragnar http://orcid.org/0000-0003-4735-6162
Tanja Tydén http://orcid.org/0000-0002-2172-6527
Margareta Larsson http://orcid.org/0000-0001-8050-621X
Jenny Niemeyer Hultstrand http://orcid.org/0000-0002-2304-2006
Kristina Gemzell-Danielsson http://orcid.org/0000-0001-6516-1444
Inger Sundström-Poromaa http://orcid.org/0000-0002-2491-2042
Marlene Makenzius http://orcid.org/0000-0001-6014-6296

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