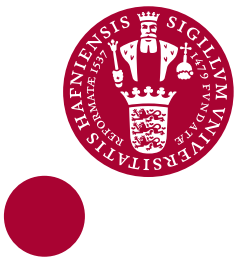

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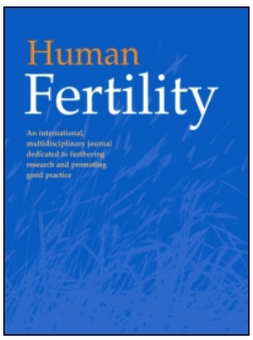

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ORIGINAL ARTICLE

Motherhood through medically assisted reproduction – characteristics and motivations of Swedish single mothers by choice

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ABSTRACT

Characteristics and motivations of single mothers by choice were assessed in this pilot study, after new legislation in 2016 allowing access to medically assisted reproduction (MAR). Single women at a university clinic in Sweden were sent a postal questionnaire to their home address ($n = 86$) and 54 (62.8%) women filled it out and returned it. The women had a mean age of 35.1 years and were well-educated. Most of them worked full-time, were permanently employed, and had a stable income. They had previously had long-term relationships, although these had not been right for having children. More women (61%) could consider embryo donation rather than adoption (50%) ($p < 0.05$). The motivations most commonly cited for choosing motherhood by MAR was that because of their age, having a child was more important than waiting for the right partner. Nevertheless, they still had hope to find a partner in the future. In conclusion, Swedish single women accepted for MAR are no different from other single mothers by choice: they are financially and socially stable, and choose motherhood by MAR due to their advanced age and not wanting to wait too long in order to meet the right partner.

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Assisted reproductive technology (ART); medically assisted reproduction (MAR); pilot study; single motherhood

Introduction

An increasing number of women from high-income countries are deciding to become single mothers by choice through the use of medically assisted reproduction (MAR) and donated semen (Golombok, 2017). In Sweden, new legislation in April 2016 made it possible for single women to be accepted for MAR, such as donor insemination (DI) and/or assisted reproductive technology (ART). Before this, single women in Sweden had to go abroad, for example to Denmark, for such treatment. In the new legislation, 'single woman' refers to any woman who is not married, or without a registered or cohabiting partner, and has no previous children. Because there has to be a genetic link associated with ART in Sweden, treatment using both donor sperm and donor eggs is not permitted (National Board of Health and Welfare, 2009; Sveriges Riksdag SoU, 2015). However, a new legislation will permit embryo donation from 2019, according to a decision by the parliament in June 2018 (Sveriges Riksdag SoU, 2017). In Sweden, the donor is non-anonymous to the prospective child, who will have access to the donor's identity from the age of 18 years. While there has been a decrease in the number of children available for adoption and many countries do not permit adoption by single women, and as norms and values have changed in Swedish society, there has been an increased acceptance of alternative parenting, such as single motherhood by MAR (Wennberg, Rodriguez-Wallberg, Milsom, & Brännström, 2016).

Women who choose single motherhood by choice are older and better educated and have full-time employment to a greater degree than women in couples with common parenthood (Jadva, Badger, Morrissette, & Golombok, 2009). Studies among childless 35+ year-old women seeking fertility counselling in the capital region of Denmark showed that these women wanted to plan and control their fertility as well as their motherhood. However, single motherhood was not their first choice (Birch Petersen et al., 2015, 2016). Single women regarded 33 years as the ideal age for having their first child and most women desired two or more children (Birch Petersen et al., 2015; Jadva et al., 2009). Most single women applying

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for MAR have not been married, but have had previous relationships (Salomon, Sylvest, Hansson, Nyboe Andersen, & Schmidt, 2015; Weissenberg & Landau, 2012). Their decision to become a single mother by choice was discussed with family members and friends (Jadva et al., 2009). Single mothers by choice self-report good mental health and support from their family and social network (De Wert et al., 2014; Jadva et al., 2009). Most hope to find a partner in the future with whom to share parenthood (Birch Petersen et al., 2016; Murray & Golombok, 2005; Salomon et al., 2015).

Since the new legislation giving single mothers by choice access to MAR was introduced in Sweden in 2016, characteristics such as socio-demographic background, reproductive history and social relations have not yet been investigated. Less is known about Swedish women's motivations for choosing single motherhood using assisted reproduction. Given this lack of information, the aim of this pilot study was to describe characteristics and motivations of Swedish single mothers by choice who have been accepted for MAR at one of Sweden's public fertility clinics.

Materials and methods

Study population and setting

In this pilot study, single women accepted for MAR at the Centre for Reproduction at Uppsala University Hospital, Sweden, from August 2016 to December 2017, were invited to participate. No referral is needed for women living in the county and at the time of the study, it was possible for those living outside the county to be referred to the Centre. The Centre is one of six public clinics offering single women subsidized MAR, such as six DI treatments and/or three treatments with ART, according to the national recommendations. These subsidized treatments are the same as for heterosexual and lesbian couples. There are no governmental support services for single mothers by choice than for other mothers who are single by divorce or separation, after the child is born. For single women, an inclusion criteria for MAR is an upper age of 39 years at time of treatment. The Swedish health care guarantee at public clinics states that the investigation has to start within 3 months of first contact. The Centre for Reproduction was the first public clinic in Sweden to start investigation to undergo MAR after the legislation in 2016. After investigation, there is a waiting period for MAR, according to the availability of donor sperm.

At the time of the study, not all of the six public clinics in Sweden had started offering single women MAR (Läkartidningen, 2017). Only one private fertility clinic offered ART with donor sperm, whereas DI was offered at most fertility clinics (National Quality Registry for Assisted Reproductive Technology, 2017). At private clinics, the upper age limit for MAR can be somewhat higher. At the time of this study, private clinics were only allowed to offer insemination with donor semen. A new legislation in Sweden in January 2019 will allow private clinics to offer ART with donor semen after applying for licence. Furthermore, the new legislation will also allow embryo donation (Sveriges Riksdag SoU, 2017). Thus, ART with donor semen at private clinics and embryo donation was not allowed at the time of this study.

Inclusion criteria for single mothers by choice to be accepted for MAR according to the new legislation are the same as for couples undergoing MAR. These criteria imply that her medical, psychological and social conditions have to be investigated by a doctor and a counsellor. The criteria for social conditions is the woman's ability, as a single parent, to supply for the child's needs (National Board of Health and Welfare, 2016). After this investigation, before treatment can start, a donation meeting is held at the clinic, at which the woman is or is not accepted for MAR. Single women accepted for MAR were included in this study. Single women not accepted at the donation meeting were excluded as there was no access to these women. Approximately five single women were excluded during the study period.

Study design

This pilot study was conducted using a postal questionnaire, developed in Swedish by the first author, sent to the participants' home address in December 2017. The women were asked to provide consent to participate in the study and to complete and return the questionnaire by mail in a prepaid envelope. Two reminders were sent to non-responders at 4 and 6 weeks.

Data collection

Data were collected by asking the participants to fill out a questionnaire with 48 questions. These addressed the women's socio-demographic background (such as age, educational level, employment, previous relationships, sexual preferences and social relations) and medical and reproductive history (such as previous pregnancy loss and/or legal abortion). Social relations were defined as having lived in a family including siblings and having a

network of siblings and friends with children. A question was posed about embryo donation by MAR, had it been legally possible, as this option was not possible at the time of the study. Other questions, such as 'What was the reason for not having children in your previous relationship?', had multiple-choice alternatives, with one or more possible responses. Another question such as 'What is the reason you want to undergo MAR as single woman' was assessed by ranking the statements in order of importance (from most important to least important). Finally, a ten-point visual analogue scale (VAS) of the importance (0 = least important to 10 = most important) of having a child was assessed. These questions were pilot-tested in a first version before the final version was constructed. The questionnaire was also tested for approval among the health professionals at the public fertility clinic and only a few suggested alterations were offered. Furthermore, a question was adapted with statements about 'thoughts concerning having a child as a single mother by choice' with the response alternatives 'Yes', 'No' and 'Don't know'. This question was modified from another questionnaire (Salomon et al., 2015). The study was approved by the Ethics Committee at Uppsala University, Sweden (Reference number: Dnr 2017; 402).

Statistical analyses

Continuous variables were presented as mean ± SD, median and range. Frequencies were compared using the chi square test. For the question concerning adoption and embryo donation, the response alternatives 'No' and 'Don't know' were merged. All statistical analyses were performed using SPSS version 25.0 (SPSS Inc., Chicago, IL). A p value less than 0.05 was considered significant.

Results

A total of 86 single women were eligible for the pilot study. Of these, 54 (62.8%) filled out the questionnaire. At the time of the study, 16 women (29.6%) had started MAR. The total waiting period for MAR was approximately 12.5 ± 6.1 months, including the waiting period for the investigation. A total of nine out of 16 (56.2%) women stated they had had a positive pregnancy test after MAR and one woman had had a live birth at the time of the study (Table 1).

The mean age of the single women was 35.1 ± 2.8 years and most of them had been born in Sweden (94.4%). Most women had a university degree of more than 3 years, were in full-time work, and had permanent employment. Most of them had a stable income and half of them (57.4%) owned their home. The majority had lived with both parents (81.1%) and had siblings (98.1%). Most reported that their siblings (77.4%) and friends (67.9%) had children. Less than a third (30.2%) of the women had a chronic disease, with the most common being asthma/allergy, and thyroidal and gynaecological disease such as endometriosis. A female infertility factor was found among six (13.6%) of the women during the investigation. Almost half (45.3%) stated that they had previously had anxiety and/or depressive symptoms. Half of the women considered their current mental health to be

Table 1. Socio-demographic and medical data of the 54 single women who responded to the questionnaire.

	n (%)
Started treatment/MAR	
Yes	16 (30)
Pregnancy after MAR	
Yes	9/16 (56.2)
Waiting-time (months) before MAR (mean ± SD)	12.5 ± 6.1
Age, years (mean ± SD)	35.1 ± 2.8
Range	27–39
Educational level	
High school	10 (18.5)
University < 3 years	5 (9.2)
University = 3 years	5 (9.2)
University > 3 years	34 (63.0)
Employment status	
Full time	48 (88.9)
Part time	4 (7.4)
Student	1 (1.9)
Sick-leave	1 (1.9)
Permanent employment	
Yes	52 (96.3)
Average monthly income (before tax) in SEK (mean ± SD)	33.289 ± 8375.1
Median	31.500
Range	20.000–55.800
Living situation	–
Rented apartment	23 (42.6)
Co-operative apartment	31 (57.5)
Growing up with both parents	
Yes	43 (79.6)
Parents currently living together	
Yes	28 (51.9)
Having siblings	
Yes	52 (98.1)
Siblings have children	
Yes	41 (75.9)
Friends have children	
Yes, all	5 (9.4)
Yes, most	36 (67.9)
Yes, some	12 (22.6)
No	–
Having a chronic disease	
Yes	16 (30.2)
Diagnosed infertility factor	
Female factor	6 (13.6)
No infertility factor	26 (59.1)
Do not know	12 (27.3)
Previous anxiety/depressive symptoms	
Yes	24 (45.3)
Current Mental health*	
Very good	27 (50.9)
Good	26 (49.1)
Less good	–

*Anxiety and/or depressive symptoms.

good (49.1%) or very good (50.9%). None of them reported the alternative 'less good'. The socio-demographic and medical data are shown in Table 1.

The majority of the women were heterosexual (81.5%) and one out of three (33.3%) had had more than 20 sexual partners. Most of the women (81.5%) had previously had long-term (more than 6 months) relationships after the age of 20 and almost two-thirds (61.1%) had been married or in a partnership for an average of 4.8 ± 4.0 years. Fewer than one out of four women (22.6%) had tried to become pregnant in a previous relationship. Fourteen women (25.9%) had previously been pregnant and had had a miscarriage and/or a legal abortion. The average duration of being single after the age of 20 was 9.2 ± 4.1 years and before applying for MAR the women had been single for an average of 4.2 ± 3.6 years. The mean point at which the women wanted to have a child by MAR was at age 31.4 ± 4.1, or within a mean time of 3.7 ± 2.9 years. Most of the women wanted to have two children and every fifth woman more than two children. Most of the women (82.7%) wanted a non-anonymous donor even if they had the possibility to choose. More single women (61.1%) could consider having an embryo donation rather than adoption (50%) ($p < 0.05$), if the option had been legal. Eight women (15.1%) had previously had MAR in another country (Denmark) before the Swedish legislation was introduced in 2016. All of the women had told people around them, mostly family or friends that they were planning to undergo MAR. Socio-demographic and reproductive data are shown in Table 2.

The answers to 'What was the reason for not having children in your previous relationship' were ranked as follows: 'The relationship wasn't right' (51.9%), 'It wasn't the right time' (41.5%), and 'My partner didn't want a child' (25.9%). The answers to 'What are the reasons you want to undergo MAR as a single woman' were ranked as follows: 'I want a child' (93.9%), 'My age; I don't want to wait too long' (57.1%), and 'I haven't met the right partner' (34.7%). The importance of having a child was ranked an average of 9.2 ± 1.5 on the ten-point VAS scale (data not shown). The most common answer to the question about 'reasons for choosing to become a single mother' was 'I want a partner in the future' (88.7%). The results are shown in Table 3.

Table 2. Socio-demographic and reproductive data of the 54 single women who responded to the questionnaire.

	n (%)
Sexual orientation	
Heterosexual	44 (81.5)
Bisexual	6 (11.1)
Homosexual	4 (7.4)
Number of sexual partners	
<2	5 (9.3)
2–9	15 (27.8)
10–19	12 (22.2)
20–29	12 (22.2)
30 or more	6 (11.1)
Do not know	4 (7.4)
Long-term relationship (>6 months) after age 20	
Yes	44 (81.5)
Number of long-term relationship after age 20 (mean ± SD)	2.1 ± 1.0
1	11 (29.7)
2–4	25 (67.5)
5	5 (2.7)
Previous married/co-habiting	
Yes	33 (61.1)
Previous married/co-habiting number of years (mean ± SD)	4.8 ± 4.0
Range	1–16
Have you tried to become pregnant in a previous relationship?	
Yes	12 (22.6)
Have you previously been pregnant?	
Yes	14 (25.9)
If pregnant; have you had miscarriage and/or legal abortion	
Miscarriage	7 (12.9)
Legal abortion	10 (18.5)
How many years single after age 20 (mean ± SD)	9.2 ± 4.1
How many years single before MAR (mean ± SD)	4.2 ± 3.6
Since what age wanted to have a child by MAR (mean ± SD)	31.4 ± 4.1
How long time wanting to have a child by MAR (mean number of years ± SD)	3.7 ± 2.9
How many children do you want (mean ± SD)	2.0 ± 0.6
Range	1–4
How important is for you to have children (scale 0–10) (mean ± SD)	9.1 ± 1.5
Range	2–10
If you could choose, do you want an anonymous donator	
Yes	1 (1.9)
No	43 (82.7)
Do not know	8 (15.4)
Could you consider adoption as single mother	
Yes	27 (50.0)
No	8 (14.8)
Do not know	19 (35.2)
Could you consider embryo donation as single (if it was legal)	
Yes	33 (61.1)
No	4 (4.7)
Do not know	17 (19.8)
Have you had treatment/MAR previously as private-payer	
Yes	8 (15.1)
If MAR; insemination and/or IVF	
Insemination	7
IVF	2
Have told about applying for MAR	
Yes	54 (100.0)
Have told the following about MAR;	
Family (parents/siblings)	45 (83.3)
Friends	49 (90.7)
Relatives	13 (24.0)
Colleagues	19 (35.1)

Discussion

This is the first study to describe characteristics of Swedish single women accepted for MAR at a public fertility clinic and to explore these women's

Table 3. Thoughts of the 54 single women about the decision to become a single mother by choice.

	n (%)
I would rather have a child with a partner	
Yes	45 (83.3)
I had a partner with whom I wanted to have a child	
Yes	28 (51.9)
I am soon too old and have not time to find a partner to have a child with	
Yes	41 (75.9)
I would rather live without a partner than without a child	
Yes	45 (83.3)
I want a partner in the future	
Yes	47 (88.7)

motivations for choosing single motherhood by assisted reproduction. One out of four women had started MAR at the time of the study and the total waiting period was approximately 1 year.

Our results indicate that the characteristics of Swedish single women accepted for MAR are in accordance with those of other single mothers by choice in previous studies: they are older, are employed full-time (Jadva et al., 2009; Salomon et al., 2015), and are well-educated (Jadva et al., 2009). The mean age of 35 years is in accordance with a Danish national study covering all public fertility clinics, showing that single women's mean age (36.1 years) was significantly higher compared to that of cohabiting women (32.6 years) (Salomon et al., 2015). Accordingly, cohabiting women undergoing ART in a previous study (Volgsten, Skoog Svanberg, Ekselius, Lundkvist, & Sundström Poromaa, 2008) at the same public fertility clinic had a mean age of 32.9 years. For married or co-habiting women in Sweden, the mean age of having the first child is 29.3 years (Statistics Sweden, 2017a).

In this pilot study, conducted in a county with a university city, most of the single women (63%) had a university degree of more than 3 years. This is similar to a study in which 59% of the single women seeking treatment had a university education (Jadva et al., 2009). For cohabiting women undergoing MAR in a previous study (Volgsten et al., 2008), the university degree level was 54.5%, which is almost in agreement with this study, and higher than among women in the general population (48%) (Statistics Sweden, 2016). Our result is also in accordance to the national study from Denmark, in which a total of 65.5% of single women had a university degree of 3 years or more and no differences in educational level were found between single and cohabiting women (Salomon et al., 2015). Most of the single women in this study had a permanent job and a stable income similar to that of the general population of women in Sweden (Statistics Sweden, 2017b).

The high educational level among single mothers by choice may be due to the fact that these women are better informed about the opportunity to undergo MAR (Salomon et al., 2015). Furthermore, in Sweden, there are several websites for single women with a child-desire with information about MAR and the new legislation, as a possible alternative to access information. However, there is a need to have a stable socio-economic life to apply for MAR, in order to care for the prospective child. Women from other socio-economic groups, with no full-time work or without employment, are not to be accepted for MAR within the Swedish public health care system, according to the national recommendations (National Board of Health and Welfare, 2016).

Social relations, as having a network of siblings and friends with children, were established among most single women in this study. All of the women had told others, mostly family and friends, of their plan to undergo MAR. However, there are contrasts between single mothers by choice and those who are single mothers due to separation or divorce (Jadva et al., 2009). For instance, being a single mother due to divorce can lead to economic problems, a lack of support, and conflicts between the parents (Golombok, 2004). Furthermore, almost half of the single women in the current study had previously experienced anxiety and/or depressive symptoms, though at the time of the study they considered their mental health to be good. However, this is important information for health professionals, so they know to follow these women's mental health during and after childbirth. Studies in this area are sparse, and more research is needed; nevertheless, most single women have good psychological health and supportive social relations (De Wert et al., 2014).

Other characteristics among Swedish single women accepted for MAR included that the majority were heterosexual, one out of three had had more than 20 sexual partners, and every fourth woman had had a previous pregnancy. These results are in accordance with the Danish studies of single women seeking fertility assessment or initiating MAR treatment using donor semen (Birch Petersen et al., 2015; Salomon et al., 2015). Notably, the number of homosexual or bisexual women in this study were higher than in another study (Jadva et al., 2009) and not assessed in the Danish studies. However, as MAR is accepted for lesbian couples in Sweden since 2005, there may not be a problem to state the sexual orientation in the questionnaires among the single women in this study. Most of the single women had previously had long-

term relationships, having been married or in a partnership, which is in agreement with Jadva et al. (2009). Thus, the average time of being single after the age of 20 was 9 years and 4 years upon inclusion in the study, in accordance with Salomon et al. (2015). Most of the women wanted to have two children and one out of five more than two children, in agreement with another study of single women seeking fertility assessment (Birch Petersen et al., 2015). The majority of the women desired a non-anonymous donor, even if they had a choice. More single women could consider embryo donation rather than adoption, if this had been legal at the time of the study, in contrast to single women seeking fertility assessment (Birch Petersen et al., 2015). However, this result may indicate a belief among women who are accepted for MAR that it is important to give birth, thus possibly explaining their choice to achieve motherhood by assisted reproduction.

Single women's reasons for not having children in previous relationships were stated as the relationship not being right, it not being the right time and the partner not wanting to have a child. These statements are in accordance with previous studies (Jadva et al., 2009; Salomon et al., 2015). Furthermore, according to the Danish study, there were no differences, except for advanced age, between single and cohabiting women in regard to previous pregnancies, previous number of long-term relationships, or attitudes to motherhood; and for single women, single motherhood was not their first choice (Salomon et al., 2015).

Motivations for choosing single motherhood by MAR among the Swedish women in this pilot study included that having a child is more important, due to their age, than waiting for the right partner; nevertheless, they still had hope they would find a partner in the future. In other studies, this result is referred to as the 'Plan B' for achieving motherhood (Birch Petersen et al., 2016; Engholm Frederiksen, Christensen, Tjørnhøj-Thomsen, & Schmidt, 2011; Salomon et al., 2015). However, in studies among women already assessing single motherhood by choice (Jadva et al., 2009; Weissenberg & Landau, 2012), most of the women are single or plan to remain single.

A strength of this study was an acceptably high response rate, making external validity feasible for other public fertility clinics with similar settings. However, as the study was only conducted at one public clinic, multiple-centre studies will be needed to confirm the findings. Given that the option of MAR treatment and upper age limits differ between public and private clinics, this also needs to be taken into account. A limitation of the study was that there was no information given for single women who were not accepted at the donation meeting, as they had to be excluded. Another limitation was that there was no questionnaire validated for this study group of single mothers by choice who had been accepted for MAR and no comparison group with cohabiting women was used. Furthermore, there could have been more questions about social relations, as social support was not assessed. Another question not posed in this study, was the importance for motherhood to give birth to a biological child. However, these are questions for an ongoing study of the same cohort with a more qualitative approach, by collecting data with individual face-to-face interviews.

A clinical implication for health professionals meeting this patient group is to have the knowledge and awareness of the characteristics and motivations of single women choosing motherhood by assisted reproduction. These single mothers by choice are well-established in society, both socio-economically and through social relations. This result suggests that they will have good prospects for future single motherhood.

In conclusion, Swedish single women accepted for MAR are no different from other single mothers by choice; they are financially and socially stable and choose single motherhood by assisted reproduction due to their advanced age, not wanting to wait too long and not yet having met the right partner. However, most of these single mothers by choice hope to find a partner later in life.

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Disclosure statement

The authors declare no conflicts of interest.

References

Birch Petersen, K., Hvidman, H.W., Sylvest, R., Pinborg, A., Larsen, E.C., Macklon, K.T., … Schmidt, L. (2015). Family intentions and personal considerations on postponing childbearing in childless cohabiting and single women aged 35–43 seeking fertility assessment and counselling. *Human Reproduction*, *30*, 2563–2574. doi: 10.1093/humrep/dev237.

Birch Petersen, K., Sylvest, R., Nyboe Andersen, A., Pinborg, A., Westring Hvidman, H., & Schmidt, L. (2016). Attitudes

towards family formation in cohabiting and single childless women in their mid- to late thirties. *Human Fertility*, *19*, 48–55. doi: 10.3109/14647273.2016.1156171.

De Wert, G., Dondorp, W., Shenfield, F., Barri, P., Devroey, P., Diedrich, K., … Pennings, G. (2014). ESHRE Task Force on Ethics and Law 23: Medically assisted reproduction in singles, lesbian and gay couples, and transsexual people. *Human Reproduction*, *29*, 1859–1865. doi: 10.1093/humrep/deu183.

Engholm Frederiksen, M., Christensen, U., Tjørnhøj-Thomsen, T., & Schmidt, L. (2011). Solo mother by donor – the plan B of motherhood. A perspective on person-centred reproductive medicine. *The International Journal of Person Centered Medicine*, *1*, 800–807.

Golombok, S. (2004). Solo mothers: Quality of parenting and child development. *International Congress Series*, *1266*, 256–263. doi: 10.1016/j.ics.2004.01.095.

Golombok, S. (2017). Parenting in new family forms. *Current Opinion in Psychology*, *15*, 76–80. doi: 10.1016/j.copsyc.2017.02.004.

Jadva, V., Badger, S., Morrissette, M., Golombok, S. (2009). 'Mom by choice, single by life's circumstance' … Findings from a large scale survey of the experiences of single mothers by choice. *Human Fertility*, *12*, 175–184. doi: 10.3109/14647270903373867.

Läkartidningen. (2017). *Långa väntetider till assisterad befruktning för ensamstående* [Long waiting times for assisted fertilization for single persons]. Läkartidningen. 2017; 114: ESIW Lakartidningen.se 2017-08-07. Retrieved from http://lakartidningen.se/Aktuellt/Nyheter/2017/08/Langa-vantetider-till-assisterad-befruktning-for-ensamstaende/.

Murray, C., & Golombok, S. (2005). Going it alone: Solo mothers and their infants conceived by donor insemination. *American Journal of Orthopsychiatry*, *75*, 242–253. doi: 10.1037/0002-9432.75.2.242.

National Board of Health and Welfare. (2009). *Senaste version av Socialstyrelsens föreskrifter och allmänna råd (SOSFS 2009:32) om användning av vävnader och celler i hälso- och sjukvården och vid klinisk forskning* [Latest version of the National Board of Health and Welfare's regulations and general advice (SOSFS 2009: 32) on the use of tissues and cells in health care and in clinical research]. Retrieved from http://www.socialstyrelsen.se/sosfs/2009-32.

National Board of Health and Welfare. (2016). *Assisterad befruktning med donerade könsceller* [Assisted fertilization with donated germ cells]. Retrieved from http://www.socialstyrelsen.se/Lists/Artikelkatalog/Attachments/20451/2016-12-36.pdf.

National Quality Registry for Assisted Reproductive Technology. (2017). *Q-IVF 2017 IVF-kliniker i Sverige* [IVF clinics in Sweden]. Retrieved from https://www.medscinet.com/qivf/ivf-kliniker-i-sverige.aspx.

Salomon, M., Sylvest, R., Hansson, H., Nyboe Andersen, A., & Schmidt, L. (2015). Sociodemographic characteristics and attitudes towards motherhood among single women compared with cohabiting women treated with donor semen – a Danish multicenter study. *Acta Obstetricia et Gynecologica Scandinavica*, *94*, 473–481. doi: 10.1111/aogs.12619.

Statistics Sweden. (2016). *Utbildningsnivån i Sverige* [Education level in Sweden]. Retrieved from https://www.scb.se/hitta-statistik/sverige-i-siffror/utbildning-jobb-och-pengar/utbildningsnivan-i-sverige/.

Statistics Sweden. (2017a). *Föräldrars ålder i Sverige* [Parents age in Sweden]. Retrieved from https://www.scb.se/hitta-statistik/sverige-i-siffror/manniskorna-i-sverige/foraldrars-alder-i-sverige/.

Statistics Sweden. (2017b). Genomsnittlig månadslön efter yrke, 2017 [Average monthly salary by occupation, 2017]. Retrieved from https://www.scb.se/hitta-statistik/statistik-efter-amne/arbetsmarknad/loner-och-arbetskostnader/lonestrukturstatistik-landstingskommunal-sektor/pong/tabell-och-diagram/genomsnittlig-manadslon-efter-yrke/.

Sveriges Riksdag SoU. (2015). *Assisterad befruktning för ensamstående kvinnor Socialutskottets betänkande 2015/16: SoU3* [Assisted fertilization for single women Social Committee report 2015/16: SoU3]. Retrieved from http://www.riksdagen.se/sv/dokument-lagar/arende/betankande/assisterad-befruktning-for-ensamstaende-kvinnor_H301SoU3.

Sveriges Riksdag SoU. (2017). *Modernare regler om assisterad befruktning och föräldraskap* [More modern rules on assisted fertilization and parenting]. Retrieved from http://www.riksdagen.se/sv/dokument-lagar/arende/betankande/_H501SoU20.

Volgsten, H., Skoog Svanberg, A., Ekselius, L., Lundkvist, O., & Sundström Poromaa, I. (2008). Prevalence of psychiatric disorders in infertile women and men undergoing in vitro fertilization treatment. *Human Reproduction*, *23*, 2056–2063. doi: 10.1093/humrep/den154.

Weissenberg, R., & Landau, R. (2012). Are two a family? Older single mothers assisted by sperm donation and their children revisited. *American Journal of Orthopsychiatry*, *82*, 523–528. doi: 10.1111/j.1939-0025.2012.01187.x.

Wennberg, A.L., Rodriguez-Wallberg, K.A., Milsom, I., & Brännström, M. (2016). Attitudes towards new assisted reproductive technologies in Sweden: A survey in women 30–39 years of age. *Acta Obstetricia et Gynecologica Scandinavica*, *95*, 38–44. doi: 10.1111/aogs.12781.