Reproductive BioMedicine Online (2016) **32**, 113–120

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ARTICLE

Increasing fertility knowledge and awareness by tailored education: a randomized controlled trial

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Abstract Women of reproductive age have insufficient fertility knowledge and awareness. Reproductive lifespan and assisted reproduction are the primary areas in which awareness is lacking. Relatively simple interventions can be used to increase knowledge among university students; however, no intervention has been tested to date in a population with more varied education levels. The aim of this study was to evaluate which intervention most improved fertility knowledge in women attending a fertility centre for oocyte donation. A randomized controlled trial was conducted with three intervention groups: tailored, untailored and control. A questionnaire was administered on the day of the first consultation, and again at the oocyte retrieval. Two hundred and one women were enrolled and completed the pre-test, 109 started the cycle and 90 completed the post-test. The effect of the intervention was measured as the difference between the groups in their score from the pre-test to the post test. Only the tailored group showed a significant increase (+2.5; 95% CI [1.8, 3.3]; $P = 0.001$). Information relating to a woman's most fertile age and limits for childbearing were the most useful. Tailored oral education, therefore, increases fertility knowledge in young women, particularly in relation to their fertility lifespan. RBMOnline

KEYWORDS: age-related infertility, counselling, fertility awareness, fertility knowledge, reproductive life planning

http://dx.doi.org/10.1016/j.rbmo.2015.10.008
1472-6483/

Introduction

Fertility knowledge and awareness of infertility risk factors are modest to low in people of reproductive age in countries with different scores on the Human Development Index (Bunting et al., 2013; Chan et al., 2015; Hammarberg et al., 2013; Maeda et al., 2015; Peterson et al., 2012). What information, however, do people of reproductive age receive about fertility? Sex education programmes in schools have been initiated at varied times in European countries; compulsory sex education classes were introduced into schools in Sweden, Germany and France in 1956, 1970 and 1973, respectively, whereas, in other countries, such as Italy, they are not obligatory. In Spain, a recently enacted law regulates the incorporation of this area of knowledge into the curriculum of high school and medical science students (Law 2/2010), but it is not widely applied. Sex education has traditionally focused on the prevention of unintended pregnancies and sexually transmitted diseases, and it is neither optimal nor systematic. Hence, multiple calls to action can be found have been published (Chapman et al., 2006; Everywoman, 2013; Mazza et al., 2012; Moos et al., 2008), and further recommendations aimed at improving reproductive health are being introduced in clinical settings (Dunlop et al., 2007; Johnson et al., 2006; Johnson et al., 2012; Stern et al., 2015). These actions, however, are far from universal or compulsory. To date, young men and women are not properly informed about either contraception or preconception (Liu et al., 2015; Moos, 2003). In particular, young people are seldom, if ever, told about the risk factors for future infertility, such as ageing (Dunson et al., 2004). Accurate information about age-related infertility and the limitations of assisted reproductive techniques would be particularly valuable (Dunson et al., 2004; Leridon, 2004; Liu and Case, 2011) because possibilities with assisted reproduction techniques are commonly thought to be considerable, if not unlimited (Daniluk et al., 2012; Maheshwari et al., 2008; Sabarre et al., 2013).

Three randomized controlled trials (RCT) were conducted to evaluate the efficacy of educational interventions aimed at increasing fertility knowledge in young people through different evaluation tests. The distribution of educational online brochures about ertility to a population of psychology students at a university in Australia resulted in a significant increase in knowledge about fertility and the effectiveness of assisted reproduction techniques, and a reported lower desired age for childbearing (Wojcieszek and Thompson, 2013). The authors, however, could not evaluate the long-term effects of the intervention, as the evaluation test and the intervention were conducted on the same day. In another study (Williamson et al., 2014), a presentation on fertility was given to a population of female university psychology students in Canada, resulting in a twofold increase in the number of correct answers to the test. Again, the intervention and the test were carried out on the same day (Williamson et al., 2014). Finally, Stern et al. (2013), in the context of a university health centre in Sweden, provided participants with tailored oral and written information about family planning based on their reproductive life plans, and administered the evaluation test two months after the intervention. The tailored oral and written information provided in this study was found to have a positive effect on participants' knowledge of reproduction, even two months after the intervention. Overall, these studies showed the effectiveness of relatively simple interventions, which were also greatly appreciated by most participants. All three tests, however, were carried out among a population of university students, who might be more receptive to the intervention than less educated people.

Oocyte donors seem to be a suitable target population for fertility information and reproductive health advice. On the one hand, they are women in their twenties, on average, which is an optimal time to provide information about the risks and benefits of delaying childbearing, as perceived by the participants of previous research (Maheshwari et al., 2008). On the other hand, oocyte donors are usually childless but are expecting to have a family in the future (Garcia et al., 2014). Finally, different educational levels are represented in this population (primary school, high school and university), such that the effect of an intervention can be assessed without restricting the interpretation to the educated population, which has been the focus of most published research.

The primary objective of this study was to evaluate the benefit of two educational interventions (tailored and untailored) on fertility knowledge in oocyte donors. Furthermore, the aim was to assess whether these interventions have an effect on the reported ideal age for giving birth to the first and the last child.

Materials and methods

Study population

Inclusion criteria for participation in the study were as follows: women between 18 and 35 years of age, who were candidates for oocyte donation, and who had made their first visit to a large private fertility centre between April and November 2014. The CONSORT diagram, represented in Figure 1, shows the flow of participants from the 214 women selected for the study to the 90 women who finally completed the oocyte donation cycle, and the two questionnaires required to evaluate the effect of the educational interventions. The participation rate was 93.9%.

Sample size

A sample size estimation was made (Faul et al., 2007) to detect an effect size f of 0.3 (moderate effect; critical F = 3.07) between three groups and setting error I and II at 0.05 and 0.1, respectively, resulting in a total number of 126 individuals (at a 1:1:1 scheme resulting in 32 per group). To enable a 50% response (the proportion of candidate donors that are not accepted in the donation programme after the first consultation for reasons unrelated to the study), the intention was to include 67 women per group. The estimated power of the study for the actual group's size is 89.6% accepting an alpha risk of 0.05.

Study setting and procedure

The study has a randomized controlled trial design with three groups, to which participants were randomly allocated on their

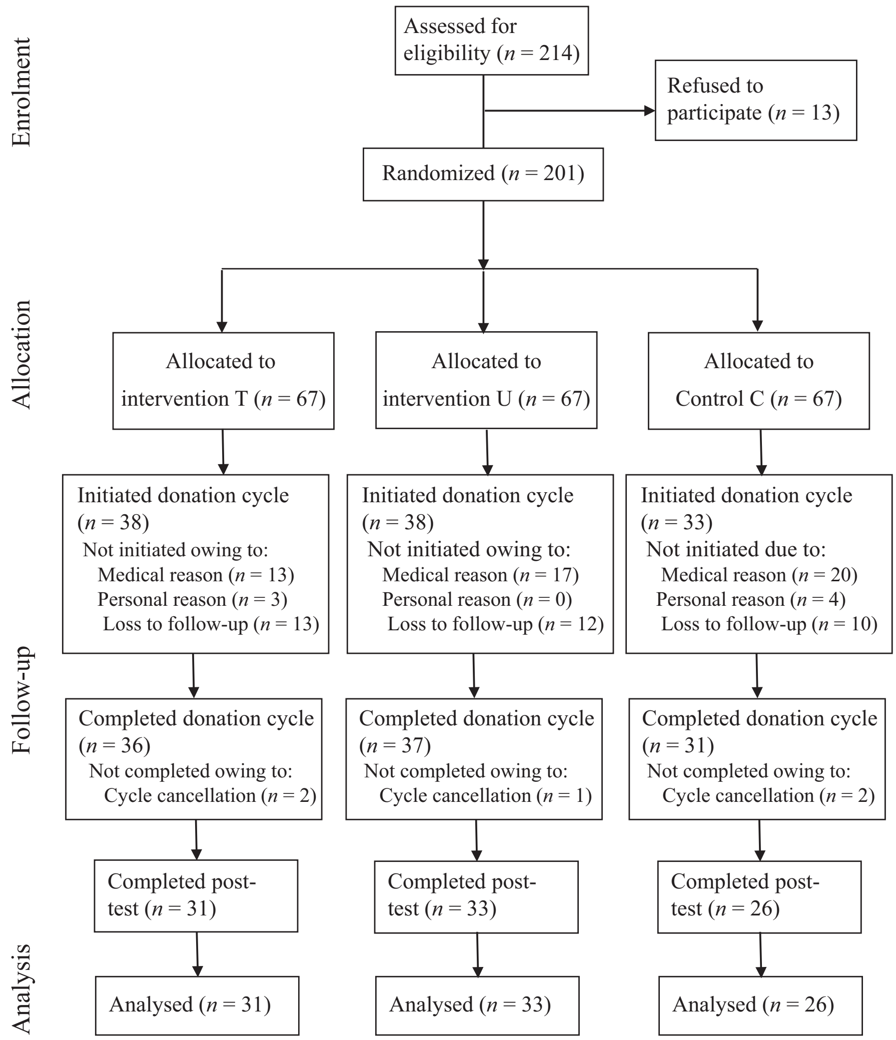

Figure 1 CONSORT flowchart for randomized controlled trials.

first visit. The three study groups were: T, 'tailored information', U, 'untailored information' and C, 'control group'.

In the T group, participants were provided with both a written brochure with general information about female fertility and also personalized oral information, depending on the incorrect answers given in the pre-test. This intervention was carried out by healthcare workers with extensive experience interacting with young women. In the U group, only the written brochure was provided. In the C group, neither tailored nor untailored information was provided on the first visit; however, the written brochure was provided at the end of the study after the post-test to provide these women with the opportunity to benefit from the educational intervention, as well. The main investigator (DG) explained to the healthcare workers the procedure for providing the brochures, scoring the questionnaires, and giving feedback to the women.

The randomization list was computer-generated online using GraphPad QuickCalcs (http://www.graphpad.com/quickcalcs/), and allocation was computerized and password protected.

The effect of the intervention was measured by a self-report questionnaire administered twice: once on the first visit to the clinic (pre-test) before any intervention was undertaken and again on the day of the oocytes retrieval (post-test). The questionnaires were completed by the participants individually.

Questionnaire

The questionnaire consisted of 10 items derived from previously published research (Bunting and Boivin, 2008; Garcia et al., 2014; Lampic et al., 2006; Sedlecky et al., 2011; Virtala et al., 2011), and five additional demographic items (age, country of origin, level of education, number of children), which were not scored. The 10 questions scored covered the following topics: the fertile window within the menstrual cycle, the woman's fertility lifespan, infertility risk factors, when to consult a fertility specialist and oocyte donation indications. The wording of the questionnaire and possible or correct answers are shown in Figure 2 (English translation).

Brochure and oral information

The written brochure covered the same topics as the questionnaire, in the same order, and in accessible language, so

About you…

1. How old are you? I am ______ years old
2. Where are you from? I am from ____________ (country)
3. What is your education level? (although not completed yet)
   - ❒ Primary school
   - ❒ High school
   - ❒ University or further education
4. How many children do you have? I have ______ children
5. In your opinion, what age is ideal for childbearing?

   Ideal age for having the first child: ______ years
   Ideal age for having the last child: ______ years

About fertility…

6. At which moment in a woman's cycle it is most likely to become pregnant? **(Q1)**
   - ❒ Just before the period
   - ❒ Just after the period
   - ❒ **Halfway between two periods**
   - ❒ The moment doesn't matter
   - ❒ I don't know
7. At what age it is easier to become pregnant? **(Q2)**
   - ❒ **Before 25 years old**
   - ❒ Between 25 and 35 years old
   - ❒ After 35 years old
   - ❒ Age doesn't matter
   - ❒ I don't know
8. At what age is there a slight decrease in women's ability to become pregnant? **(Q3)**
   - ❒ **At 25 years**
   - ❒ At 30 years
   - ❒ At 35 years
   - ❒ At 40 years
   - ❒ I don't know
9. At what age is there a marked decrease in women's ability to become pregnant? **(Q4)**
   - ❒ At 25 years
   - ❒ At 30 years
   - ❒ **At 35 years**
   - ❒ At 40 years
   - ❒ I don't know
10. Which of these factors can increase fertility? **(Q5)**
    - ❒ Eating five portions of fruit and vegetables a day
    - ❒ Living in the countryside and not in the city
    - ❒ Lying down for 10 minutes after sex
    - ❒ **None of the above**

About infertility…

11. Which of these factors is the highest infertility risk factor? **(Q6)**
    - ❒ **Being over 35 years old**
    - ❒ To be under a lot of stress
    - ❒ Smoking more than 10 cigarettes per day
    - ❒ Having more than 2 alcoholic drinks per day
12. Which of these factors is NOT an infertility risk factor? **(Q7)**
    - ❒ Suffering from diabetes
    - ❒ Having received chemotherapy to treat a cancer
    - ❒ Having had a sexually transmitted infection
    - ❒ **Taking the birth control pill**
13. When does a woman attempting to become pregnant have to consult a fertility specialist if she is aged less than 35 years? **(Q8)**
    - ❒ After 3 months of unprotected sex without becoming pregnant
    - ❒ After 6 months of unprotected sex without becoming pregnant
    - ❒ **After 1 year of unprotected sex without becoming pregnant**
    - ❒ After 2 years of unprotected sex without becoming pregnant
14. When does a woman attempting to become pregnant have to consult a fertility specialist if she is aged more than 35 years? **(Q9)**
    - ❒ After 3 months of unprotected sex without becoming pregnant
    - ❒ **After 6 months of unprotected sex without becoming pregnant**
    - ❒ After 1 year of unprotected sex without becoming pregnant
    - ❒ After 2 years of unprotected sex without becoming pregnant
15. A 50-year-old woman has become pregnant. Which is the most likely option? **(Q10)**
    - ❒ Spontaneous natural pregnancy
    - ❒ Natural pregnancy with a healthy diet and exercise
    - ❒ Pregnancy following assisted reproduction with her own oocytes
    - ❒ **Pregnancy following assisted reproduction with the oocytes of a donor**

Figure 2 Questionnaire translated into English. Correct answers in bold.

that, after being read, one could readily answer all the questions. The readability of the questionnaire and the brochure were calculated using the adaptation of the Flesch degree formula for the Spanish language devised by Fernández Huerta (Blanco Pérez and Gutiérrez Couto, 2002; Flesch, 1948), reaching a readability grade level of 95.0 (very easy) for the questionnaire and 82.0 (easy) for the brochure, which indicates that they were appropriate for adult readers.

Statistical analysis

Changes in the questionnaire total scores (on a 0–10 scale) the pre-test to the post-test were compared among the groups by an omnibus univariate analysis (one-way analysis of variance). When this was significant, paired t-tests were applied to compare the groups.

The percentage of correct answers for each item at the post-test between the intervention groups was analysed by Pearson's chi-square test. It should be noted that two correct answers were accepted for Q8: fertility starts to slightly decrease "at 25" and "at 30", which is consistent with the interval 25–29 years used in previous research (Lampic et al., 2006).

The effect of educational level on the baseline fertility knowledge was analysed by comparing the pre-test total score between university and non-university educated participants using Student's *t*-test.

The Statistical Package for Social Sciences (SPSS version 20.0, IBM Inc., USA) was used for the statistical analyses. $P < 0.05$ was considered to be statistically significant for all analyses.

Ethical approval

Ethical approval for the implementation of this study was obtained from the Ethics Committee of Clínica EUGIN (CEIC EUGIN) on 21 January 2014. All participants in the study agreed to be enrolled and signed the informed consent form before their inclusion. This study is registered at ClinicalTrials.gov under the identifier: NCT02364739.

Results

Demographic characteristics

Participants were 25.3 years of age on average on the day of inclusion. Most (79.6%) were originally from Spain, 31.3% were university educated, and 64.7% were childless. Further information about the demographic characteristics of the total population and each study group is detailed in Table 1. No baseline differences were found between the groups, which reflected that the groups were balanced in these characteristics after randomization. In addition, as Table 2 shows, no significant differences were found in the baseline characteristics or previous knowledge of fertility between the participants who completed the study and those who withdrew after the first consultation.

Table 1 Demographic characteristics at pre-test, overall and by study group.

	Overall (n = 201)	*Tailored information* (n = 67)	*Untailored information* (n = 67)	*Control* (n = 67)
Age, mean (SD)	25.3 (4.7)	25.2 (4.9)	24.8 (4.4)	25.9 (4.7)
Spanish, *n* (%)	160 (79.6)	53 (79.1)	50 (74.6)	57 (85.1)
No children, *n* (%)	130 (64.7)	43 (64.2.)	49 (73.1)	38 (56.7)
University education, *n* (%)	63 (31.3)	22 (32.8)	25 (37.3)	16 (23.9)
Pre-test total score; mean (SD)	3.7 (1.6)	3.8 (1.7)	3.6 (1.5)	3.6 (1.6)
Ideal age for first child at pre-test, mean (SD)	25.8 (3.0)	25.8 (3.1)	25.9 (2.9)	25.6 (3.2)
Ideal age for last child at pre-test, mean (SD)	34.4 (4.0)	34.7 (4.0)	34.3 (3.7)	34.3 (4.2)

Table 2 Demographic characteristics at pre-test, overall and by participant's status.[a]

	Overall (n = 201)	*Completed* (n = 90)	*Withdrawn* (n = 111)
Age, mean (SD)	24.8 (4.7)	25.07 (5.0)	24.6 (4.5)
Spanish, *n* (%)	160 (79.6)	71 (78.9)	89 (80.2)
No children, *n* (%)	130 (64.7)	56 (62.2)	74 (66.7)
University education, *n* (%)	63 (31.3)	25 (27.8)	38 (34.2)
Pre-test total score, mean (SD)	3.7 (1.6)	3.84 (1.4)	3.54 (1.8)
Ideal age for first child at pre-test, mean (SD)	25.8 (3.0)	25.4 (3.0)	26.1 (3.0)
Ideal age for last child at pre-test, mean (SD)	34.4 (4.0)	34.0 (4.1)	34.7 (3.8)

[a] $P < 0.1$ is considered as statistically significant for baseline differences between groups no statistically significant differences were found using Student *t*-test or Pearson's chi-square test, as appropriate.

Pre-test evaluation

The pre-test score was 3.7 out of 10 on average. The reported ideal ages for having the first and last child were 25.8 and 34.4 years, respectively. The detailed results for the pre-test overall and by study group are presented in Table 1, showing no differences among the groups before the intervention.

It is worth noting that 37 (18.4%) of the participants answered that "age does not matter" in regard to getting pregnant (Q2) and 36 (17.9%) thought that a 50-year-old pregnant woman was more likely to have become pregnant naturally than if she had undergone assisted reproductive techniques (Q10).

The analysis of the pre-test scores by level of education showed that university-educated participants had higher fertility knowledge scores than non-university educated participants (4.0 points, 95% confidence interval (CI) [3.6, 4.5] versus 3.5 points, 95% CI [3.3, 3.8], $P = 0.043$). Just one question, however (Q1, fertile window within menstrual cycle), was answered correctly by significantly more university-educated participants (54.0% versus 31.2%; $P = 0.006$). Age, being of Spanish origin and having children did not have an effect on the pre-test scores.

Post-test results

The intervention increased the average post-test score in all groups compared with the pre-test (T = +2.5, 95% CI [1.8, 3.3]; U = +1.3, 95% CI [0.5, 2.1]; C = +0.42, 95% CI [−0.2, 1.1]), with a marked trend ($p_{trend} < 0.001$) towards increasing change across the control, untailored and tailored groups. In the paired comparisons, however, the increase was significant in the T versus C ($P = 0.001$) and in the T versus U ($P = 0.022$), but not in the U versus C. A reduction was observed in the ideal age for having the last child after the intervention in the T group, although it did not reach statistical significance (−2.1 years, 95% CI [−3.6, −0.5]). The mean differences in the changes in total score and ideal ages for having the first and the last child are detailed in Table 3.

Overall, the question best answered at the post-test in all the three groups was Q10 (pregnancy at 50 years old) (86.4%), followed by Q7 (infertility risk factors) (64.8%). The T intervention resulted in a significantly greater percentage of correct answers for three items compared with the C group, all of which were related to fertility decreasing with age: Q2 (best age for childbearing; $P = 0.042$), Q4 (marked fertility decrease; $P = 0.023$), and Q6 (>35 years old as strong infertility risk; $P < 0.001$). The U intervention resulted in a greater percentage of correct answers that were higher than the C intervention, although this was not statistically significant. The percentages of correct answers for each question at post-test, overall and by study group are presented in Table 4.

Discussion

The primary finding of this study is that tailored oral education significantly increases fertility knowledge in oocyte donors, which is true regardless of their level of education. The increase in fertility knowledge, however, only had a modest effect reducing the reported ideal age for childbearing.

Table 3 Change in questionnaire total score change and change in ideal age at first and last child, overall and by study group.[a]

	Overall (n = 90)	Tailored information (n = 31)	Untailored information (n = 33)	Control (n = 26)	P[b]	p_{trend}[c]
Change in total score, mean (SD)	1.47 (2.2)	2.50 (2.1)	1.30 (2.3)	0.42 (1.7)	0.001[d]	<0.001
Change in ideal age at first pregnancy, mean (SD)	−0.44 (2.8)	−0.84 (2.7)	0.06 (2.4)	−0.77 (3.3)	NS	NS
Change in ideal age at last pregnancy, mean (SD)	−0.99 (4.1)	−2.06 (4.3)	−0.50 (3.6)	−0.31 (4.3)	NS	NS

[a]$P \leq 0.05$ has been set as statistically significant. NS = not statistically significant.
[b]Oneway ANOVA.
[c]Oneway ANOVA with orthogonal linear contrast.
[d]Paired *t*-test: T vs C: $P < 0.001$, U vs C: NS, T vs U: $P = 0.022$.

Table 4 Percentage of correct answers to each question after intervention (post-test), overall and by study groups.[a]

	Overall (n = 90)	Tailored information (n = 31)	Untailored information (n = 33)	Control (n = 26)	P[b]
Q1	54.5	51.6	62.5	48.0	NS
Q2	60.7	77.4	56.3	46.2	0.045
Q3	43.2	58.1	39.4	29.2	NS
Q4	33.3	48.4	33.3	15.4	0.031
Q5	57.3	66.7	54.5	50.0	NS
Q6	50.0	80.0	37.5	29.2	<0.001
Q7	64.8	77.4	56.3	60.0	NS
Q8	50.0	48.4	43.7	60.0	NS
Q9	42.5	43.3	34.4	52.0	NS
Q10	86.4	96.8	84.4	76.0	NS

NS = not statistically significant.
[a]$P \leq 0.05$ has been set as statistically significant.
[b]Pearson's chi-square test.

Fertility knowledge at the pre-test was low and increased by the post-test in the three study groups, but this increase was statistically significant only in the T group. We think that the "tailored oral education" was indeed a factor in this outcome for two reasons: one is the randomized nature of our trial, where study groups were successfully balanced at baseline. Another reason is that the information provided to participants in the two intervention groups (U and T) was the same, but the form of delivery was different. In the T group, the information was provided orally and was individualized –drawing the woman's attention to the incorrect answers that she gave, whereas in the U group, the information was given in a standard, non-customized written form. Therefore, we conclude that the observed increase was due to the manner in which the information was given. It is true that we observed a trend toward higher fertility knowledge across all groups (from no information to tailored information); the slight improvement in the no information group might be due to either the effect of how the questionnaire was completed, which might have aroused curiosity on the topic among the women, or to the fact that, during the initial gynaecological evaluation and the follicular control visits at the clinic, women might have acquired information about fertility while on the premises. The improvement observed in the U group, which was lower than in the T group, suggests that written brochures do not elicit sufficient interest if they are not accompanied by individualized information, which is more likely to be retained by the participants. Perhaps online brochures would be more attractive to young people, who could browse the aspects they are most interested in, which might result in significantly increased fertility knowledge (Daniluk and Koert, 2015; Wantland et al., 2004; Wojcieszek and Thompson, 2013). On the whole, the increase in fertility knowledge after the educational interventions observed in previous studies (Daniluk and Koert, 2015; Stern et al., 2013; Wojcieszek and Thompson, 2013) could be explained by the high educational level of the participants. In our study, we have found that having a university education had a significant effect on basal fertility knowledge, but this effect was not found for the difference in scores after the intervention. Therefore, our data do not support the hypothesis that there is a stronger benefit of the intervention in more educated participants, but we recognize that the study was not designed to detect this difference.

The question that was answered best in all three groups on the pre-test and at post-test was related to the treatment option of oocyte donation for age-related infertility. It was expected that this question would be correctly answered among these women who were candidates for oocyte donation. Similarly, oral contraceptives were correctly identified not to be a risk factor for infertility by more than one-half of the participants at the pre-test, as well as at the post-test, possibly owing to the extensive information about contraceptive methods currently available and to their frequent use among women of this age range (35% of oral contraceptives users in our previous research) (Garcia et al., 2014). On the other hand, all participants were expected to be more knowledgeable about the fertile window within the menstrual cycle than they in fact were. As previously observed (Garcia et al., 2014), the percentage of correct answers to this question was (the only one) closely related to university education. Questions about age-related fertility limits (best age for childbearing, marked fertility decrease at 35 years of age and being 35 years old and upwards as an infertility risk), which were the linchpin of the intervention, presented the main improvement after intervention T. This finding could be observed for two reasons: first, the content of the information given was especially focused on the effect of age on fertility (five out of 10 questions), and therefore might have been better retained overall. Second, all people are affected by age, but non-smokers, for instance, might not pay attention to information about the effect of smoking on fertility.

We observed inconsistencies in the answers of certain participants. First, a number of participants answered that "age does not matter" for getting pregnant, whereas they recognized a decrease in fertility after the age of 40 years. These answers could be interpreted as "age would not matter while a woman menstruates", as mentioned by one participant in the study of Littleton with teenage girls (Littleton, 2014). Therefore, the relationship between menopause, age, and fertility should not be forgotten in further interventions. Second, we observed a misconception of when fertility "slightly" decreases (before the age of 30 years) and when it "markedly" decreases (from the age of 35 years) because certain participants answered that there was a marked decrease in fertility at a younger age, rather than when the slight decrease in fact occurs. This has not been reported in other studies where the question was posed (Lampic et al., 2006; Peterson et al., 2012; Tyden et al., 2006), although it is agreed that the terms are rather subjective (Skoog Svanberg et al., 2006). The third misconception is that certain women think that women aged over 35 years have to wait longer than women aged less than 35 years before attending an assisted reproduction specialist, possibly because they understand that getting pregnant takes more time for an older women and therefore are more likely to attend a fertility centre later. When it is necessary to consult a fertility specialist after attempting to conceive unsuccessfully, the woman is likely to need more attention in future interventions because it does not seem clear for participants at either the pre-test or post-test.

We recognize several limitations to the present study. First, the post-test evaluation could not be obtained from one-half of the participants because they were not enrolled in the donation programme. The lack of differences in baseline characteristics or in the knowledge of fertility between those who completed the study and those who withdrew makes a selection bias unlikely. Second, although our aim was to measure the effect of education on fertility knowledge among young women of different levels of education, and not only in university-educated women, as has been undertaken in previous studies, our sample might not be representative of the general population. Nevertheless, what our sample does offer is a perspective on young women's fertility knowledge beyond the group of university students, which has been the sole focus of much of the published research.

In conclusion, this study demonstrates that educational interventions are more effective when they are interesting for the intended audience and tailored to individuals. First, it is necessary to identify which aspects of fertility are matters of concern in the target population. Second, a degree of individualization could be achieved by measuring individual knowledge (through the calculation of a total score or the identification of knowledge gaps), and the translation of the received information into individual risk (how the information can be applied to the individual). Tailored oral information accompanying a written brochure provided in a healthcare centre has been demonstrated to be useful for increasing fertility knowledge in women of reproductive age. Interventions in settings other than at fertility clinics, e.g. interventions aimed at young men, how to improve sex education at school, the promotion of reproductive health campaigns, will be needed to bring about a decrease in childbearing age in the current and future generations or at least to help young women and men have realistic expectations regarding their reproductive life plans.

Acknowledgements

The authors wish to thank the oocyte donation team of Clinica EUGIN for recruiting participants and providing information, and Francesc Figueras for statistical support.

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Declaration: The authors report no financial or commercial conflicts of interest.

Received 10 July 2015; refereed 13 October 2015; accepted 14 October 2015.