



THE INFLUENCE OF AGE AND EDUCATION ON INFERTILE WOMEN

ALINA LAURA CÂRSTEA¹, CARMEN DANIELA DOMNARIU²

¹ PhD Candidate "Lucian Blaga" University of Sibiu, ²"Lucian Blaga" University of Sibiu

Keywords: fertility, infertile women, age, education, fertility in Romania

Abstract: Globally, infertility affects millions of people. According to the World Health Organization, more than 50 million couples are affected and there are 187 million people facing infertility globally. Unfortunately, in Romania, there is no information on infertility problems and their consequences. Thus, many couples in Romania are not aware that with the postponement of pregnancy at an advanced age they will have negative consequences on future fertility. The aim of this study is to analyse whether age and education influence infertility in women. To conduct this study, we applied an online questionnaire to 162 infertile women from Romania to analyse the influence of age and education on the infertility they face. In our study it has been found that old age not only affects women's fertility, but also men's fertility. Regarding to education, it should not be seen as an impediment to the birth of children.

INTRODUCTION

Globally, infertility affects millions of people.

According to the World Health Organization, more than 50 million couples are affected and there are 187 million people facing infertility globally.(1)

Basically, infertility is the failure to get pregnant after 1 year or more after having regular unprotected sex. So infertility is actually a disease of the male or female reproductive system.

The causes of infertility are related to age, obesity, smoking, alcohol consumption, a problem of women, a problem of men, hormonal causes, environmental factors, various diseases.

Unfortunately, in Romania, there is no information on infertility problems and their consequences. Thus, many couples in Romania are not aware that with the postponement of pregnancy at an advanced age they will have negative consequences on future fertility.(2)

One study aimed to show how women perceive and adapt to infertility difficulties. Statistical analyses showed that women at the beginning of treatment had higher scores on anxiety compared to participants who resorted to repeated fertilization procedures. So, infertile women live this experience at very high levels of anxiety.(3)

One research study found that there is a strong link between high levels of education for women and low fertility rates. Basically, if a woman's level of education is increasing, she will be less likely to have children.(4)

A high level of education leads to older women giving birth to children, because women perceive it as a difficulty to balance the roles of student-mother.

Work is also another reason to postpone pregnancy, due to the fact that they want to be better paid, in other words they need higher incomes in order to raise their children.(5)

We set out to conduct this study because it was found

that in Romania, 1 in 4 couples have infertility problems.(6)

According to the National Institute of Statistics, the birth of children is steadily declining. Thus, between 1990 and 1997, the average age to have children was between 24.3-24.5 years old. But after 2002, the couples postponed their births and thus the average age reached over 26 years.(7)

AIM

The aim of this study is to analyse whether age and education influence infertility in women.

MATERIALS AND METHODS

To conduct this study, we applied an online questionnaire to infertile women to analyse the influence of age and education on the infertility they face. To find out if they were infertile, the questionnaire had a preliminary question in which I asked them whether or not they were infertile.

The questionnaire was applied on April 10-15, online on Facebook on the profile groups of Romanian women who want to get pregnant.

Thus, following the application of the questionnaire, 162 respondents participated.

The data analysis was done in SPSS.

The hypothesis we set out to test is as follows:

H1. There is a direct correlation between age and infertility.

H2. There is a direct correlation between education and infertility.

RESULTS

Following the application of the questionnaires on 162 infertile women in Romania, we analysed their age, their education, the influence of age and education on women's infertility and the duration of infertility treatment. The analyses were performed in SPSS version 26.

¹Corresponding author: Alina Laura Cârstea, B-dul. Victoriei, Nr.10, Sibiu, 550024, România, E-mail: craciun_alina2001@yahoo.com, Phone: +40740 213834

Article received on 03.04.2022 and accepted for publication on 27.05.2022

PUBLIC HEALTH AND MANAGEMENT

Table no. 1. Age on women's infertility

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------|-----------|---------|---------------|--------------------|
| Valid | 20-30 years | 26 | 16.0 | 16.0 | 16.0 |
| | 31-40 years | 79 | 48.8 | 48.8 | 64.8 |
| | 41-50 years | 57 | 35.2 | 35.2 | 100.0 |
| Total | | 162 | 100.0 | 100.0 | |

As it can be seen in table no. 1 entitled age on women's infertility, 48.8% of respondent women are between 31-40 years old, 35.2% of respondents are between 41-50 years old and 16% of respondents are between 20-30 years old.

Table no. 2. The influence of education on women's infertility

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------------|-----------|---------|---------------|--------------------|
| Valid | middle school | 68 | 42.0 | 42.0 | 42.0 |
| | secondary school | 77 | 47.5 | 47.5 | 89.5 |
| | postsecondary | 17 | 10.5 | 10.5 | 100.0 |
| | Total | 162 | 100.0 | 100.0 | |

According to table no. 2, the influence of education on women's infertility, 47.5% of respondents graduated from secondary school, 42% of respondents graduated from middle school and 10.5% of respondents graduated from middle school.

Based on the data provided by infertile women, we made table no. 3 entitled "The influence of age and education on women's infertility".

Table no. 3. The influence of age and education on women's infertility

| Correlations | | | | |
|-----------------|---------------------|--------|-----------|-----------------|
| | | age | education | pregnant_status |
| age | Pearson Correlation | 1 | .666** | .572** |
| | Sig. (2-tailed) | | .000 | .000 |
| | N | 162 | 162 | 162 |
| education | Pearson Correlation | .666** | 1 | .826** |
| | Sig. (2-tailed) | .000 | | .000 |
| | N | 162 | 162 | 162 |
| pregnant_status | Pearson Correlation | .572** | .826** | 1 |
| | Sig. (2-tailed) | .000 | .000 | |
| | N | 162 | 162 | 162 |

** . Correlation is significant at the 0.01 level (2-tailed).

In our case, we obtained a Pearson coefficient with the value 1, which means that there is a strong correlation between the variables, the value of the coefficient being very close to one.

The Sig value shows a significant correlation coefficient.

Also, in the applied study, we found that the women did not know that they were infertile.

Table no. 4. Duration of infertility treatment

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------|-----------|---------|---------------|--------------------|
| Valid | under 1-3 years | 95 | 57.9 | 57.9 | 57.9 |
| | 4-6 years | 32 | 19.5 | 19.5 | 77.4 |
| | 7-10 years | 32 | 19.5 | 19.5 | 97.0 |
| | 11-15 years | 5 | 3.0 | 3.0 | 100.0 |
| | Total | 164 | 100.0 | 100.0 | |

As it we can see in the table no. 4, entitled duration of infertility treatment, after women found out they were infertile, the maximum duration of infertility treatment was 1-3 years for 95% of women, followed by 4-6 years and 7-10 years for 32% of women, 11-15 years was reported in 5% of women.

Also, after questioning the respondents, they were asked the main reason why they have not yet resorted to an assisted human reproduction technique: they said that: "I kept waiting to get pregnant, I was afraid to get IVF. At first, I let everything come naturally, then I resorted to all kinds of tests, small surgeries, artificial inseminations and finally IVF", the high cost makes the technique financially inaccessible, now I have reached a doctor specialist, I did not know that neither I nor my husband had fertility problems, I was not guided by the gynecologist to a clinically assisted human reproduction clinic, courage, religious beliefs, costs, but also the fact that not all counties have such clinics infertility to be at our fingertips".

DISCUSSIONS

The problems that infertility brings to a couple's life are seen differently depending on gender, age, financial stability and area of origin. But it is certain that infertility is a critical threshold in the couple's life that can lead to a number of psychological, emotional and social problems.(8)

As our results show, it seems that some women, even men as they mentioned, did not realize that they are infertile, for the simple reason that they postponed the moment too long, they did not know because no one informed them, others did not resort to a reproduction procedure due to misinformation, lack of money or reasons of faith. Thus, it is necessary for women to be educated in advance about their reproductive age. Thus, the most important factors in terms of fertility awareness are related to treatment and education.(9)

More and more women are turning to fertility centers because of old age.(10)

Fertility problems are not only found in Romania, a study showed that the decline in fertility in Finland is particularly strong, where the total fertility rate reached an all-time low of 1.41 in 2018.(11)

Old age not only affects women's fertility, but also men's fertility. This was mentioned by the respondents of our questionnaire. Thus, a woman's fertility begins to decrease with the age of 30 and begins to decrease more and more after the age of 35.

It has been found that advanced age has a significant impact on the success of conception, both in natural and assisted reproduction, and that there is a lack of knowledge about the impact of age on fertility, even for people with higher education.(12)

A study of 829 women in Romania found that more than 80% of women in the study had a bachelor's or master's degree or a doctorate, which showed that education is important and can have an effect on how women addresses infertility issues.(13)

Awareness of infertility problems should begin in adolescence when sex education is taught in schools at a more extensive level in the curriculum, in which young people realize the impact of delaying the birth of children and the optimal age of to give birth to children.

Following the questionnaire, over 70% of the subjects said that if there had been fertility information campaigns, they would have made different choices in life; they would have prioritized aspects of their lives differently. Thus, it becomes even more necessary to teach fertility lessons in sex education.

Also, teaching fertility lessons would help prevent sexually transmitted infections, as well as unwanted pregnancies among adolescents. For example, in the case of Romania, it is found that it fails to control the phenomenon of underage mothers. If we refer to Europe, Romania is in the top two in terms of the number of births, as well as the number of abortions for underage girls.(4)

The major decline in birth rates in Romania is seen as

an extremely worrying phenomenon.

In 2018, the Ministry of Health financed 685 procedures through the in vitro fertilization and embryo transfer subprogramme, while in 2019-2021 it financed over 1,000 procedures.(14)

Thus, the Romanian state reimburses only a part of the costs of the proceedings in the amount of 10,000 lei.

So the recommendation for Romanian women is to go to screening checks every year.

CONCLUSIONS

Following the study, we found that women did not realize that they were infertile, because they were not prepared, they waited for it to come naturally. But all this is due to the lack of informing couples in advance about the problems that infertility brings at the psychological and social level. We can see that women in Romania do not go to the gynecological examination regularly or do not communicate openly with the gynecologist and hence the lack of information. Basically, couples should be informed through family doctors, gynecologists, national awareness campaigns on the risks they are exposed to.

Also, couples postpone the time until they have a child because they want financial stability in the first place, they want their income to increase, as a result they invest in their education and they attend more schools so that they are satisfied with the salary level. However, what couples are not aware of is that these things will lead to a lack of childbirth.

Education should not be seen as an impediment to the birth of children. There are solutions for couples to be helped in raising and educating the child.

We note that the hypothesis we set out to test:

H1. There is a direct correlation between age and infertility. - it is accepted.

H2. There is a direct correlation between education and infertility. - it is accepted.

REFERENCES

1. World Health Organization. Infertility. [Internet]. Available from: https://www.who.int/health-topics/infertility#tab=tab_1. Accessed on 14.03.2022.
2. Margan R, Margan MM, Fira-Mladinescu C, Putnoky S, Tuta-Sas I, Bagiu R, Popa ZL, Bernad E, Ciuca IM, Bratosin F, Miloicov-Bacean OC, Vlaicu B, Dobrescu A. Impact of Stress and Financials on Romanian Infertile Women Accessing Assisted Reproductive Treatment. *Int J Environ Res.* 2022;19(6):3256.
3. Iordăchescu DA, Paica CI, Boca AE, Gică C, Panaitescu AM, Peltecu G, Veduță A, Gică N. Anxiety, Difficulties, and Coping of Infertile Women. *Healthcare.* 2021;9(4):466.
4. Alam S, Ahmed MH, Butt, MS. The dynamics of fertility, family planning and female education in Pakistan. *J Asian Econ.* 2003;14(3):447-463.
5. Mills M, Rindfuss RR, McDonald P, te Velde E. Why do people postpone parenthood? Reasons and social policy incentives. *Hum Reprod Update.* 2011;17(6):848-860.
6. Asociația pentru Reproducere Umană. Primul studiu de analiză a problemelor de infertilitate din România. [Internet]. Available from: <https://www.arur.ro/2018/06/18/855/>. Accessed on 21.04.2022.
7. INSSE. Evoluția natalității și fertilității în România. [Internet]. Available from: https://insse.ro/cms/files/publicatii/Evolutia%20natalitatii%20si%20fertilitatii%20in%20Romania_n.pdf. Accessed on 03.03.2022.
8. Hasanpoor-Azghdy SB, Simbar M, Vedadhir A. The emotional-psychological consequences of infertility among infertile women seeking treatment: Results of a qualitative study. *Iran J Reprod Med.* 2014;12(2):131-138.
9. Swift BE, Liu, KE. The Effect of Age, Ethnicity, and Level of Education on Fertility Awareness and Duration of Infertility. *JOGC.* 2014;36(11):990-996.
10. Saumet J, Petropanagos A, Buzaglo K, McMahon E, Warraich G, Mahutte N. No. 356-Egg Freezing for Age-Related Fertility Decline. *JOGC.* 2018;40(3):356-368.
11. Hellstrand J, Nisén J, Myrskylä, M. All-time low period fertility in Finland: Demographic drivers, tempo effects, and cohort implications. *Popul Stud.* 2020;74(3):315-329.
12. Delbaere I, Verbiest S, Tydén T. Knowledge about the impact of age on fertility: a brief review. *Ups J Med Sci.* 2020;125(2):167-174.
13. UNICEF Romania. Sarcinile la adolescente, un fenomen ciclic, care se repetă de la o generație la alta în aceleași familii. [Internet]. Available from: <https://www.unicef.org/romania/ro/comunicate-de-pres%C4%83/sarcinile-la-adolescente-un-fenomen-ciclic-care-se-repet%C4%83-de-la-o-genera%C8%9Bie-la>. Accessed on 22.04.2022.
14. Ministerul Sănătății. Comunicat de presă. Reorganizare subprogram de fertilizare in vitro și embriotransfer. [Internet]. Available from: <https://www.ms.ro/2020/01/17/reorganizare-subprogram-de-fertilizare-in-vitro-si-embriotransfer/>. Accessed on 22.04.2022.