

AWARENESS AND PERCEPTION OF *IN VITRO* FERTILIZATION AS AN INFERTILITY TREATMENT METHOD AMONG POLISH WOMEN: A CROSS-SECTIONAL STUDY

PATRYCJA STANKIEWICZ^{1 A-C}
• ORCID: 0000-0002-2665-960X

BARBARA NIERADKO-IWANICKA^{2 E,F}
• ORCID: 0000-0002-4839-6003

MALGORZATA WITKOWSKA-ZIMNY^{1 A,D-G}
• ORCID: 0000-0003-2167-8657

¹ Department of Human Anatomy, Medical University
of Warsaw, Poland

² Department of Hygiene and Epidemiology,
Medical University of Lublin, Poland

A – study design, **B** – data collection, **C** – statistical analysis, **D** – interpretation of data, **E** – manuscript preparation, **F** – literature review, **G** – sourcing of funding

ABSTRACT

Background: Assisted reproductive technology (ART) as an infertility therapy remains controversial, although it has been available for more than four decades, with more than five million people estimated to have received the treatment worldwide. In Poland, the legitimacy and acceptability of *in vitro* fertilization (IVF) are still debated in the public and political realms, with NaProTechnology being the recommended publicly funded method of infertility treatment.

Aim of the study: This paper presents the current perceptions and opinions of Polish women of reproductive age on infertility treatment, with particular reference to IVF.

Material and methods: The study used an original questionnaire to survey 226 women aged 18-49 on their knowledge and attitudes toward IVF.

Results: A high level of knowledge concerning IVF as a method of infertility treatment was demonstrated by 19.9% of respondents. Most women interviewed (65%) had a positive attitude toward IVF, 4.6% would use IVF regardless of the cost, and 12.4% would never use IVF. Only 5.8% of respondents thought that access to infertility treatment is guaranteed in Poland.

Conclusions: This is the first study conducted in Poland in which participants professed that their Catholic faith did not influence their lack of acceptance of IVF. Most respondents held the opinion that access to infertility treatment is not guaranteed in Poland. Given the increasing scale of the infertility problem, detailed monitoring of attitudes and acceptance of IVF is needed to support those in Poland struggling with the condition.

KEYWORDS: *in vitro* fertilization, attitudes, infertility, Poland

BACKGROUND

Estimates indicate that between 48 and 186 million people are infertile globally [1-3]. Therefore, the World Health Organization (WHO) has recognized infertility as a disease of civilization and is devot-

ing increasing attention to reproductive health and infertility treatments. The most reliable medical data from prospective randomized controlled trials (RCTs) demonstrate that assisted reproductive technologies (ART), including *in vitro* fertilization (IVF), prove most effective in infertility treatment [4]. ART

use has increased recently, primarily due to the postponement of parenthood, and there is no reason to believe this trend will change in highly developed countries. Recent estimates suggest that by 2100, 3% of the world's population will be born using ART [5]. Although ART has been available for over four decades, and more than 5 million babies have been born through its use worldwide, interventions such as IVF are still unavailable or difficult to access in many countries. The right to access safe and effective reproductive therapies is considered a vital element of reproductive healthcare.

The decision to use IVF may not only be based on clinical and economic considerations but also ethical principles, with religion still playing a critical role in IVF acceptance in many countries. Poland is a non-secular country where personal, social, and political attitudes are shaped strongly by religion and moral code [6]. Despite the availability of IVF for more than three decades, its legitimacy and acceptance are still debated in the public and political realms [7, 8, 9]. Infertility treatment is guaranteed in Poland by the Act on Infertility Treatment of 25 June 2015 [10], but a new range of treatment methods introduced in 2019, funded by the Polish state budget, includes natural reproductive technology (NaProTechnology) instead of the previously reimbursed IVF procedure [11].

NaProTechnology is a form of natural family planning using health science to monitor and maintain female reproductive and gynecological health. The principle idea of NaProTechnology is based on the Creighton Model, which tracks fertility through observations of cervical mucus [12]. However, the treatment algorithm offered within NaProTechnology is not supported by RCT data. Therefore, healthcare professionals do not think that NaProTechnology can be recommended for infertility treatment [4]. The lack of guaranteed public funding for evidence-based IVF results in unequal access for citizens. Moreover, ARTs are completely unacceptable to the Roman Catholic Church for doctrinal reasons, so the ethical aspect of IVF treatment is a common dilemma for Catholics faced with the decision of choosing a treatment in line with European recommendations and global standards [12]. In Poland, 95% of the population identifies as Catholic, though IVF acceptance is increasing steadily (from 60% in 2008 to 79% in 2012) among infertile couples despite the ethical and religious dilemmas involved [8]. Nonetheless, the acceptance rate is still well below other Western European countries [14]. Thanks to preimplantation genetic testing, IVF offers the possibility of screening embryos for genetic defects, thus reducing the risk of genetic disorders, offering the chance of healthy offspring to those with monogenic diseases, and avoiding the risks associated with an invasive diagnosis.

Developing medicines is accompanied by discussions on the ethical, legal, and social issues of the innovations introduced, but therapeutic regimens formulated using scientific evidence and international recommendations should ensure acceptance and accessibility of medical technologies for all patients. However, the issue of IVF is particularly delicate, as it not only involves people struggling with infertility and wishing to have offspring but also a new life in the prenatal and preimplantation stages of development. It is not uncommon for false or scientifically unconfirmed information to be disseminated within the public debate on the techniques or medical procedures associated with IVF in the broadest sense, as well as the alleged developmental defects and morphological characteristics of children born by this method. The risks of possible health complications and monitoring of adverse effects of IVF are also rarely discussed.

AIM OF THE STUDY

This paper presents the current perceptions and opinions of Polish women of reproductive age on infertility treatment, with a particular emphasis on IVF.

MATERIAL AND METHODS

Design and data collection

Data were collected using a self-completed original questionnaire developed based on a literature review and focused discussions among the authors. An electronic version of the survey was posted on a social network (Facebook), in a public and private forum, and was available from December 2021 to March 2022. Facebook was chosen as a platform because it held almost 78 percent of the social media market share in Poland in 2021. The survey was conducted online to ensure anonymity and provide greater convenience to respondents, and also because the coronavirus disease-19 (COVID-19) pandemic limited in-person meetings. An anonymous questionnaire was initially piloted on 12 women to assess the adequacy of the study tool, the clarity of questions, the time required, and the availability of data sought. The results obtained were not taken into consideration for the current study. To ensure a confidence level of 95%, the minimal sample size was determined as 196 participants, assuming that 15% of the population of reproductive age in Poland declared a problem with fertility.

The following inclusion criteria were applied: Polish females aged 18 to 49 and consent to partici-

pate in the study. Incomplete survey responses or lack of response were the exclusion criteria. A total of 226 completed questionnaires were collected and analyzed. The questionnaires were anonymous and coded. The survey consisted of two parts (Supplementary Material), with the first part collecting social and demographic data, such as age, place of residence, religion, education, marital status, number of children, number of pregnancies, experiences with becoming pregnant, and infertility treatment. In the second part, subjects were asked about their knowledge of and attitudes toward IVF as an infertility treatment. The questionnaire also contained ten questions exploring participant awareness of various issues linked to infertility treatment. For each single-choice question (questions: 11, 12, 14, 19, 20, 21, 23, 24, 25), the respondent could obtain 1 point for a correct answer, resulting in a total of 9 points. For the compound question (question 13), it was possible to obtain several points corresponding to the number of correct answers indicated, up to a maximum of 7 points. Thus, the highest score possible was 16. A score of 7 points or less was classified as a low level of knowledge, and a score of 12 or more points as a high level of knowledge.

Ethical considerations

Ethical review and approval were not required for the study with human participants in accordance with institutional requirements and national laws. Subjects provided informed consent to participate and were informed of the purpose of the study before giving their responses.

Data analysis

The study population was characterized using descriptive statistics. Categorical variables were expressed as numbers (n) and proportions (%), and quantitative variables as measures of central tendency – mean (M) and median (Me), standard deviation (SD), and minimum and maximum values. Depending on the type of dependent variable, groups were compared using a chi-squared test. The Shapiro-Wilk test assessed the distribution of the quantitative data. After determining the data distribution (inconsistent with a normal distribution), the Mann-Whitney U test (UMW, Z) compared two groups, and the Kruskal-Wallis test (KW, H) assessed three or more groups. Spearman's correlation (R) evaluated relationships. The statistical significance level was defined as $p < 0.05$. All statistical calculations employed Statistica software version 13.1 (StatSoft Poland, Krakow, Poland).

RESULTS

Participant characteristics

A total of 226 women aged 18-49 participated in the study. The largest group was aged 18-26 (60.6%; $n=137$), had a university education (68.1%; $n=154$), lived in cities (63.3%; $n=143$), and were in a civil partnership (65.9%; $n=149$). A total of 175 (77.4%) respondents declared they were Catholic, 98 (43%) had a child or were pregnant at the time of the study, 100 (44.2%) had no children and were not pregnant but planned on having children in the future, and 12.4% ($n=28$) had no offspring, were not pregnant, and did not plan on having children in the future. Of those who had children or were pregnant, 91.8% ($n=90$) conceived naturally, and 8.2% ($n=8$) became pregnant through medical procedures. Meanwhile, 14.2% ($n=32$) of respondents experienced difficulties becoming pregnant, and 34.1% ($n=77$) did not face any problems. An infertility diagnosis was reported by 28 female respondents (12.4%) and 22 partners of respondents (9.7%). Table 1 presents detailed characteristics of the respondents.

Assessment of women's knowledge of *in vitro* fertilization as an infertility treatment method

A low level of knowledge on IVF as a method of infertility treatment (less than 50% of correct answers) was revealed for 35.8% ($n=81$) of respondents, a medium level of knowledge for 44.2% ($n=100$), and a high level (more than 75% of correct answers) for 19.9% ($n=45$). The lowest knowledge level score of 4 points was recorded for 12 respondents (9.7%), and two respondents (0.9%) attained the highest score of 15 points. The larger the place of residence of those surveyed, in terms of population, the significantly higher their knowledge (positive correlation coefficient $Rho=0.21$, $p < 0.002$). Meanwhile, those living in rural areas appeared to have the poorest knowledge (Table 2), and respondents with a higher education level ($Rho=0.33$, $p < 0.0001$), particularly in a medical or biological field, had a significantly higher level of IVF knowledge (mean correct answers of: 65.3% vs. 45.1%, $p < 0.0001$). Women who had experienced difficulties becoming pregnant (60.1% vs. no difficulties: 49.3%; $p < 0.04$) and those with positive attitudes toward the IVF procedure (57.1% vs. 53.7% and 45.1%; $p < 0.0001$) also had significantly better knowledge of IVF as an infertility treatment method.

Respondents were most familiar with infertility treatments such as IVF (87.2%; $n=197$), diet and lifestyle changes (76.5%; $n=173$), ovulation stimulation (73.9%; $n=167$), intrauterine insemination (58.8%; $n=133$), spermatogenesis stimulation (40.7%; $n=92$), surgical treatment (36.7%; $n=83$), and NaProTechnology (27.4%; $n=62$). Among respondents who indi-

Table 1. Characteristics of the study group

Variable		Frequency	
		N	%
Age	18-26 years	137	60.6
	27-34 years	45	19.9
	35-40 years	22	9.7
	41-49 years	22	9.7
Place of residence	countryside	83	36.7
	town < 50,000	34	15.0
	town 50-150,000	38	16.8
	town >150,000	71	31.4
Religion	Catholicism	175	77.4
	Orthodox Christianity	1	0.4
	Jehovah's Witness	0	0.0
	other	9	4.0
	Non-believer	41	18.1
Education	primary	1	0.4
	vocational	7	3.1
	secondary	64	28.3
	tertiary	154	68.1
Education profile	medical/biological	88	38.9
	non-medical/non-biological	138	61.1
Marital status	single	69	30.5
	married	100	44.2
	civil partnership	49	21.7
	divorced	8	3.5
Children	I have children / I am pregnant	98	43.4
	I do not have children / I plan to have children	100	44.2
	I do not have children and I do not want to / do not plan to have children	28	12.4
Pregnancy as a result of natural conception	yes	90	91.8
	no	8	8.2
Difficulty getting pregnant	yes	32	14.2
	no	77	34.1
	difficult to say	89	39.4
Infertility diagnosis started in the participant	yes	28	12.4
	no	198	87.6
Infertility diagnosis started in the participant's partner	yes	22	9.7
	no	204	90.3
Total		226	100.0

cated that there were effective infertility treatments (72.6%; n=164), those with a vocational education were statistically dominant (87.5% vs. secondary and higher education: 60.9% and 76.6%, $p < 0.03$). The group of respondents with a vocational education was significantly more likely than those with a higher or secondary education to indicate the possibility of using egg banks for IVF procedures in Poland (62.5% vs. 43.5% and 26.6%, $p < 0.02$). A small proportion of

respondents (5.8%; n=13) indicated that access to infertility treatment is guaranteed in Poland, while most (65.5%; n=148) stated that infertility treatment was only available privately, and 28.8% (n=65) felt that it was difficult to access.

The majority of women interviewed (65%; n=147) had a positive attitude toward the IVF procedure, 31% (n=70) were neutral, and 4% (n=9) had a negative attitude. It should be emphasized that the opinions

Table 2. Knowledge about in vitro fertilization as a method of infertility treatment in the study group based on the percentage of answers

Variable		M	SD	Me	Min	Max	Statistics	
							Test/value	p
Total		52.6	19.6	56.3	12.5	93.8	—	—
Age	18-26 years	54.2	19.2	56.3	12.5	93.8	R=-0.09	0.171
	27-34 years	57.3	19.2	56.3	12.5	87.5		
	35-40 years	50.2	20.6	53.1	18.8	87.5		
	41-49 years	44.0	19.3	46.9	12.5	87.5		
Place of residence	village	49.3	19.3	50.0	12.5	87.5	R=0.21	0.002
	town <50.000	51.0	19.2	56.3	18.8	81.3		
	town 50.000-150.000	52.1	20.2	53.1	18.8	87.5		
	town >150.000	59.7	18.6	62.5	12.5	93.8		
Denomination	Catholic	53.8	20.0	56.3	12.5	93.8	H=1.97	0.357
	other	45.0	18.4	40.6	18.8	75.0		
	non-believer	54.4	18.2	56.3	12.5	93.8		
Education	vocational	46.5	11.6	50.0	25.0	62.5	R=0.33	0.000
	secondary	43.4	17.5	43.8	12.5	81.3		
	tertiary	57.7	19.1	62.5	12.5	93.8		
Medical/biological education	yes	65.3	16.8	68.8	12.5	93.8	Z=-7.63	0.000
	no	45.1	17.0	43.8	12.5	87.5		
Marital status	single	52.8	20.6	56.3	12.5	93.8	H=6.27	0.124
	married	53.7	19.1	56.3	12.5	87.5		
	civil partnership	55.8	19.2	56.3	18.8	93.8		
	divorced	38.2	14.3	40.6	18.8	56.3		
Children	I have a child/I am pregnant	51.7	19.4	50.0	12.5	87.5	H=1.36	0.509
	I do not want to have children/I do not plan to have children	54.3	21.1	56.3	12.5	93.8		
	I do not have children and I do not want to/I do not plan to have children	55.2	14.1	56.3	18.8	81.3		
Natural conception	yes	50.6	19.3	50.0	12.5	87.5	Z=-1.74	0.076
	no	61.4	19.9	62.5	18.8	87.5		
Difficulty getting pregnant	yes	60.1	18.3	62.5	18.8	87.5	H=6.41	0.041
	no	49.3	20.3	50.0	12.5	87.5		
	hard to say	52.7	20.4	56.3	12.5	93.8		
Attitude toward IVF	positive	57.1	18.1	56.3	18.8	93.8	H=15.89	0.000
	negative	53.7	15.6	50.0	37.5	81.3		
	neutral	45.1	20.8	43.8	12.5	93.8		

* M – mean value; SD – standard deviation; Me – median; Min-Max – minimum-maximum.

and knowledge regarding IVF were not influenced by the religious denomination of the respondent. Nearly half of the women surveyed (48.2%; n=109) held neutral attitudes towards sperm banks/egg banks, with positive attitudes held by 45.6% (n=103) and negative attitudes held by 6.2% (n=14). Almost half of the respondents would use an *in vitro* procedure regardless of the cost (49.6%; n=112), 27.9% (n=63) would only use the procedure if it was free or subsidized,

10.2% (n=23) would use it with ethical reservations, and 12.4% (n=28) would never use IVF.

Residents of large cities (more than 150,000 inhabitants) were significantly more likely to declare that they would not use an *in vitro* method of infertility treatment regardless of the possibility of funding. Irrespective of the cost, people with a vocational education were significantly more likely to undergo IVF procedures than those with a secondary or ter-

tiary education. Less than half of the respondents (38.9%; n=88) believed that child adoption could be an alternative to infertility treatment, including IVF. On the contrary, 23.9% (n=54) of the respondents believed the opposite, with the remaining 37.2% (n=84) answering "difficult to say." Most women surveyed (68.6%; n=155) were not concerned that the IVF method might result in a higher risk of genetic defects/mutations in the child. Women who wanted to have children in the future (23%; n=23), as well as childless women without plans to have children in the future (17.9%; n=5), were significantly more likely than women who had children or were pregnant, to believe that children born through IVF may have a higher risk of genetic defects/mutations ($\chi^2=11.6$, $p=0.020$).

Discussion

Education, prevention, and treatment of diseases, including infertility, should always use current scientific knowledge and be based on the principles of evidence-based medicine (EBM). IVF is recognized as the most important and effective ART treatment for infertility and is often applied when there is no therapeutic alternative [4]. Despite the 40-year history of this method, awarded the Nobel Prize in 2010, it still arouses much controversy due to ethical and legal concerns, often shaped by religious and philosophical convictions. In many countries, these reservations are no longer related to whether IVF is ethically justified per se but to particular aspects of it, such as the upper age limit of the patient, the morality of embryo storage, IVF in single women and same-sex couples, preimplantation genetic testing, and gamete and embryo sharing [15-19].

Wdowiak et al. reported a lower quality of life for patients treated for infertility in Poland compared to other Western European countries [20], which may be linked to limitations in accessing infertility treatment, lack of reimbursement for ART treatments, or lack of widespread social acceptance of ART methods, including IVF. Considering the scale of the infertility problem, there is a need for detailed monitoring of attitudes and acceptance of IVF, and an explanation of such findings, to provide support to people struggling with infertility in Poland.

People's attitudes consist of behavioral, emotional, and cognitive components. Personal experience of conceptual problems results in greater acceptance and improved knowledge of the IVF method. Similar to our research, a study by Malin et al., conducted in Poland, found IVF knowledge was associated with positive attitudes towards IVF [9], though this was not confirmed by an Iranian study or research on more than 6,000 individuals across six European coun-

tries: France, Germany, Italy, Spain, Sweden, and the United Kingdom [21, 22]. Positive attitudes toward IVF, acceptance of gamete donation, and optimism regarding the efficacy of the method were independent of knowledge, age, gender, sexual orientation, or place of residence. Remarkably, previous studies showed that negative beliefs were strongly associated with increased fertility knowledge and mainly observed in women, subjects with higher education, childless people, those in work, and individuals living in more economically developed countries [23, 24].

Research confirms minor differences in responses depending on the country of residence and the diversity of cultural, social, and religious norms. Indeed, increased skepticism toward gamete donation was reported in Italy, a country commonly regarded as Catholic [25, 26]. In our study, 12.4% of respondents declared they would not use the IVF procedure under any circumstances, consistent with a 2012 report in which 14% of the public would not use IVF, even though they believe the method should be available to infertile couples. Respondents who rejected the use of IVF as an infertility treatment based their decision on moral values (79%) [14]. Such a correlation between opinion on IVF and religious worldview was described in earlier studies conducted in Poland [9, 27, 28], although our results are the first to show no association between the Catholic religion and non-acceptance of IVF, even though ART is not accepted by the Vatican [29]. Therefore, it is crucial to analyze the factors and experiences influencing the change of attitudes and acceptance and the reinforcement of positive attitudes towards IVF procedures in highly Catholic countries, including Poland.

In contrast to previously published results, inhabitants of large cities (more than 150,000 inhabitants) declared significantly more often that they would not use IVF regardless of the possibility of government subsidization. The present study took place after the lockdown experienced during the COVID-19 pandemic, after which a migration trend from large cities to smaller towns occurred in Poland, and this change may have influenced the results obtained. In the study group, women with a low-level education (vocational) were statistically more likely to indicate the possibility of using egg banks for the IVF procedure and declared that they would use IVF regardless of the cost. The attitude of this group may be due to identification-based trust in medical personnel and treatment methods, which is rooted in intention rather than knowledge (knowledge-based trust) [30].

A complex interaction exists between rapid scientific development and changing social values, with the widespread availability of IVF also limited by high costs in many countries. The majority of survey participants believed that IVF is an effective method of infertility treatment (72.6%), and as many as

87.6% of respondents would use it, of whom 49.6% would use it regardless of the cost, which shows that there is a high expectation of easy access to infertility treatment services in Poland. Other Polish studies confirmed this finding, emphasizing the need for reimbursement of infertility treatment [31]. Only a small number of respondents (5.8%) believed that access to fertility treatments is guaranteed in Poland, while 65% of subjects thought that such treatments are only provided by private healthcare.

Whether IVF should be publicly funded is the subject of much debate [32]. In many countries, including Poland, one of the 30 most developed economies in the world, more attention needs to be paid to infertility diagnosis and treatment for social reasons at the national level. According to the demographic forecast, the population of Poland will decrease in the next 35 years by up to 11.6% compared to the 2015 population [33]. Fertility rates could increase through improved family planning projects, health education, diagnosis, and the acceptance of effective fertility treatments. However, in a study published in 2019, respondents indicated that the availability of IVF might encourage people to delay conception and that there should therefore be an age limit on the availability of this procedure and a cap on public funding [22]. Female respondents indicated the need for such restrictions more often.

In Poland, the national health strategy constitutes an obstacle to the availability and acceptance of IVF as a fertility treatment method. Furthermore, the social stigmatization of children born using this procedure and their parents remains an issue. Therefore, monitoring social attitudes and acceptance of various ARTs and providing quality EBM-based reproductive health education, including sexual education for citizens and medical personnel, is crucial. The present work is a preliminary study of large-scale research on

reproductive health education and current problems with decreased conception rates in Central European countries.

Study limitations

The present study had certain limitations, and findings should be interpreted cautiously. Indeed, the cross-sectional design limits conclusions concerning the direction of changes over time. Additional studies with a larger sample size are required to further characterize the attitudes of Polish women toward IVF as an infertility treatment method. As such, the study should be treated as an initial exploration and used to advise future longitudinal studies. Additionally, the data were collected on one social network platform (Facebook) and only among females, which may limit the generalization of the results to the Polish population.

CONCLUSIONS

Given the increasing scale of the infertility problem, detailed monitoring of attitudes and IVF acceptance is needed to support those struggling with the disease. The current study is the first conducted in Poland in which respondents held positive or neutral attitudes toward IVF and in which the participants' professed that the Catholic faith did not influence their lack of acceptance. Accounting for the sociodemographic diversity and different susceptibilities to particular anti-IVF arguments among Polish citizens is crucial for understanding the societal attitudes toward IVF as an infertility treatment method.

Supplementary Material: Questionnaire. An English version of the questionnaire used in the study.

Appendix 1: Questionnaire. An English version of the questionnaire used in the study

1. Age
 - a) 18-26 years
 - b) 27-34 years
 - c) 35-40 years
 - d) 41-49 years
 - e) Other
 - e) Non-believer
2. Place of residence
 - a) Village
 - b) Town with up to 50.000 inhabitants
 - c) Town with up to 150.000 inhabitants
 - d) Town with more than 150.000 inhabitants
3. Denomination
 - a) Catholicism
 - b) Orthodox Christianity
 - c) Jehovah's Witness
4. Education
 - a) Primary
 - b) Secondary
 - c) Vocational
 - d) Tertiary medical/biological
 - e) Non-medical tertiary education
5. Marital status
 - a) Single
 - b) Married
 - c) Civil partnership
 - d) Divorced
 - e) Widowed

6. Do you have children? (After answering 'a' or 'b' please go to question 7; after answering 'c' please skip questions 7, 8, 9)
 - a) I have children / I am pregnant
 - b) No, but I want to/plan to have children
 - c) No, and I do not want/do not plan to have children
7. Is/was the pregnancy the result of natural conception?
 - a) Yes
 - b) No
8. Have you experienced difficulties getting pregnant?
 - a) Yes
 - b) No
9. Have you ever started an infertility diagnosis?
 - a) Yes
 - b) No
10. Has your partner ever started an infertility diagnosis?
 - a) Yes
 - b) No
11. In your opinion, what is the most common cause of problems in getting pregnant?
 - a) Male infertility
 - b) Female infertility
 - c) Couple infertility
 - d) Idiopathic infertility (no identifiable cause)
12. In your opinion, are there effective treatments for infertility?
 - a) Yes
 - b) No
 - c) I don't know
13. What methods of infertility treatment do you know? (several answers possible)
 - a) Stimulation of ovulation
 - b) Stimulation of spermatogenesis
 - c) Diet and lifestyle changes
 - d) Intrauterine insemination
 - (e) In vitro fertilization (IVF)
 - f) NaProTechnology
 - g) Surgical treatment
14. What do you think the in vitro procedure consists of?
 - a) In vitro fertilization is a medical procedure involving the fertilization of several egg cells by sperm outside the female reproductive system, under laboratory conditions, and immediate transfer to the uterus.
 - b) In vitro fertilization is a medical procedure involving the fertilization of several egg cells by sperm outside the female reproductive system, under laboratory conditions, and transfer to the uterus after several days.
 - c) In vitro fertilization is a medical procedure involving the intrauterine administration of male sperm.
 - d) I do not know what this procedure consists of
15. What is your attitude toward in vitro fertilization?
 - a) Positive
 - b) Negative
 - c) Neutral
16. How do you know about the in vitro procedure? (several answers possible)
 - a) Internet forums
 - b) Websites of infertility clinics
 - c) Women's magazines/magazines
 - d) Specialized literature
 - e) Doctor
 - f) Midwife
 - g) Television
 - h) Friends
 - i) Other
17. Would you use IVF if necessary?
 - a) Yes, regardless of cost
 - b) Yes, if it was a free/subsidized procedure
 - c) Yes, but with ethical doubts
 - d) No
18. In your opinion, can adoption of a child be an alternative to infertility treatment, including IVF?
 - a) Yes
 - b) No
 - c) Difficult to say
19. Is it true that the IVF procedure in Poland can only be undertaken once?
 - a) Yes
 - b) No
 - c) I don't know
20. Is it possible to use sperm banks in Poland for the IVF procedure?
 - a) Yes
 - b) No
 - c) I don't know
21. Is it possible to use egg cell banks for the IVF procedure in Poland?
 - a) Yes
 - b) No
 - c) I don't know

22. What is your attitude toward sperm banks/egg cell banks?
 a) Positive
 b) Negative
 c) Neutral
23. Do you think the IVF procedure is painful?
 a) Yes
 b) No
 c) I don't know
24. Are you worried that children born as a result of IVF may have a higher risk of genetic defects/mutations?
 a) Yes
 b) No
 c) I don't know
25. What do you think happens to embryos not used in the IVF procedure?
 a) They are frozen
 b) They are destroyed
 c) Difficult to say
26. In your opinion, is access to infertility treatment guaranteed in Poland?
 a) Yes, treatment is widely available
 b) Yes, but these are mainly private healthcare facilities
 c) No, treatment is difficult to access

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Corresponding author:

Małgorzata Witkowska-Zimny
Email: mwitkowska@wum.edu.pl
Uniwersytet Medyczny w Warszawie, Poland

Other authors/contact:

Patrycja Stankiewicz
Email: akademianoz@gmail.com

Barbara Nieradko-Iwanicka
Email: barbara.nieradko-iwanicka@umlub.pl

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