Journal for ReAttach Therapy and Developmental Diversities
eISSN: 2589-7799
2022 December; 5 (2s): 466-476

A Study on Subjectivities on Intra-Uterine Insemination among Nursing Students

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Received: 12-September-2022
Revised: 16-November-2022
Accepted: 11-December-2022

Abstract

Intrauterine insemination (IUI) is the method where male sperm is artificially injected into female reproductive organ. It is preferred for the following reasons: it is less costly than other treatments; it is relatively less invasive than other means. This study aims to figure out subjectivities on IUI perceived by nursing students, and classify them into different types, and provide them as basic sources for developing educational programs on those students on IUI. This study used Q methodology to develop the data. This study asked 16 students in the Nursing Department, A University to sort 44 statements on IUI. Collected data were analysed using the QUANL PC Program. Data analysis found two types of perceptions on IUI among students: 'the type perceiving IUI as social problems', and 'the type perceiving IUI as individual problems'. The two factors or types of subjectivities explained 35.66% of the total variance. The first factor did 28.86%, while the second one 6.79%. the first one can be viewed as the factor which can explain the perceptions on IUI the most effectively. Among 16 research objects, eight belonged to factor 1, and eight belonged to factor 2. Those who belong to the same factor are those who perceive similarly to IUI. This study provided basic sources to figure out perceptions on IUI among nursing students and on developing educational programs on nursing students.

Keywords: -intrauterine insemination, nursing students, subjectivity, q-methodology, nurses.

1. INTRODUCTION

In advanced countries, women have tended to get married old, and, thus, old age pregnancy has increased. Usually, pregnancy at 35 or over is defined as old age pregnancy [1]. In a survey to obstetricians, Kim et al. [2] asked them whether the current standard of old age pregnancy is proper or not, and got the answer that it is proper. Accordingly, in Korea, any pregnancy of 35 years old over, whether it is the first or the second one is considered as old age pregnancy [3].

Infertility is inability to get pregnant or the condition in which woman cannot maintain pregnancy to give birth to a live baby within a year even if the couple has normal sexual relations without using contraceptives. Recently, with increasingly accurate diagnosis on causes of infertility and active treatment of them, the concept of 'infertility' has changed from inability to get pregnant to difficulty to do. In 2010, the government decided to use the term 'subfertility' instead of 'infertility', and promote the policy to solve the problem of low childbirth [4].

Subfertility is related with the whole process of pregnancy from generation of reproductive cells of man and woman, fertilization of sperm and ovum, development of fertilized embryos, to implantation of embryos in womb. So, if there is a problem in any of the whole process, subfertility can happen. Subfertility women should burden high cost of assisted reproductive technology, and they suffer from various psychological problems on parenthood, femininity, sense of loss, sadness, lack of hope for the future. They also experience stress in the process of operation, loss of control, stigma, and difficulty in performing development tasks in adulthood [5]. As our society now desperately needs to increase the birthrate, it is good to help subfertility women to succeed in getting pregnant. So, various means to make such women get pregnant have been developed.

Among various treatments provided to women diagnosed as subfertility, what is considered first is intrauterine insemination (IUI). To facilitate IUI, those women are given controlled ovarian hyperstimulation [6,7]. IUI is the method where male sperm is artificially injected into female reproductive organ. It is preferred for the following reasons: it is less costly than other treatments; it is relatively less invasive than other means [8].

IUI after controlled ovarian hyperstimulation can increase the number of egg cells increases, which can cure unidentified ovulation disorder. It can also improve the pregnancy rate by estimating the exact ovulation period and making healthier sperms reach uterine cavity [9].

In the medical field, nurses take the largest role as core personnel who have the most frequent contacts with patients. So, they are required to give safe and high-quality service to objects within limited time [10]. Subjective perceptions of nurses when they treat patients have great effects on their service. Consequently, it is important to figure out perceptions of nurses and nursing students.

Ethical issues experienced by nurses in complex clinical sites are gradually increasing, and conflicts of different ethical principles have led to ethical conflicts. Recently, there has been a renewed conflict between nurses' obligations to improve their health and safety and their beliefs to fulfill their medical personnel's obligations despite the limitations of medical resources. As such, the emergence of new ethical conflicts that could not be experienced in the past raised the need for ethical competency as a key to solving various ethical problems in the clinical field, and the subjective perception of nurses had a lot of influence on ethics

There has been no research dealing with intrauterine insemination (IUI) among nursing students. Therefore, this study intended to deal with it. This study used Q methodology which allows us to understand different types of perspectives of respondents depending on subjective structures of their concepts, and thus allows us to view perspectives of actors, not that of the researcher[11]. As the perception on IUI is the subjective and native experience of a person, Q methodology considering subjectivity of the research object is a proper method to identify types of perceptions on IUI among nursing students.

The rapid development of IUI technology and the increase in infertile couples are urging the understanding of them in the nursing field and the search for nursing intervention. Expectations for the completion of women's roles in pregnancy, childbirth, and parenting are the motivation and starting point for infertile women to choose IUI procedures. The various situational changes that occur in the process after deciding on the procedure will be the driving force to overcome the entire IUI process that results from women's expectations for pregnancy and childbirth. Given that the IUI process is a difficult process for women due to physical psychological depression and can be given up at any time, this nursing approach to desperation can help them overcome frustration and achieve the task of completing women's roles.

Accordingly, this study aims to examine subjectivity structures on IUI among nursing students, and provide basic sources to develop education programs differentiated on the characteristics of different perceptions to prospective nurses before they enter the nursing sites.

The aim of this study is to examine subjective perception types and the characteristics of each type on IUI among students in nursing department, and to provide the information on such perceptions as basic sources for the education programs for them. More specifically, we aim the followings.

1) To classify subjective perceptions on IUI among nursing students into different types.

2) To analyze and describe characteristics of different types of subjective perceptions on IUI among nursing students.

2. RESEARCH METHODS

Research Design

To identify types of subjective perceptions on IUI among nursing students, this study used Q methodology.

Selection of Q-Population and Q-Sample

To extract comprehensive statements on IUI among nursing students, this study used related literature in Korea and abroad, open-ended questionnaire, and in-depth interviews to construct the Q population. Besides, this study chose another set of over 70 Q populations. Depending on the characteristics of the research, the desirable number of Q sample can be different. However, on the premise that the usually of Q sample is 20~100 or 40~60, this study repeatedly identified the accurate meanings of extracted statements. This study excluded what

seemed to be personal opinions [12], and chose the most representative statement among similar statements. Finally, this study selected the Q sample consisting of 44 statements in Table 1.

Table 1: Q Statements

No.	Statement
1	With the age of the first marriage getting older, sub fertility and selection of IUI increase.
2	South Korea has a higher acceptance of IUI than adoption.
3	Public knowledge of the use of reproductive cells is low.
4	IUI is necessary to overcome social and national problems such as low birth rates.
5	The law on the establishment of sperm banks is essential.
6	Support for IUI for mothers is needed.
7	It is necessary to develop promotional materials and establish strategies to deliver accurate information on IUI.
8	It is necessary to establish an institutional system for static magnetic donation and storage.
9	People sometimes mistake IUI as human clone.
10	IUI can cause problems in human identity.
11	IUI is a burden of time and money.
12	The probability that a baby born by IUI is normal is low.
13	The state should support the cost of IUI.
14	IUI has a negative effect on the uterus.
15	IUI has a low probability of success.
16	To succeed IUI, man/woman should keep their health.
17	IUI is against bioethics.
18	Ovulation inducer for IUI has a negative effect on maternal health.
19	Korea should make the guidelines for IUI.
20	It takes a long time for IUI to succeed.
21	IUI is highly likely to give birth to multiple fetuses.
22	IUI is more likely to give birth than artificial insemination.
23	If there is an abnormality in female reproductive function, IUI is impossible.
24	IUI using the sperm of a man other than the husband can cause the problem of a person with parental authority.
25	IUI gives subfertility couple the hope that they can have a child.
26	IUI between non-spouses has an ethical problem.
27	The larger the size of the mature follicle, the higher the success rate of IUI.
28	As the number of sperm injected into the uterine cavity increases, the success rate of IUI increases.
29	Pregnancy rates decrease as maternal age increases.
30	The success rate of IUI increases when inducing over-ovulation rather than natural ovulation.
31	The frequency of intrauterine infections increases during delivery fertilization.
32	Sperm healthier than eggs have a greater impact on IUI.
33	Among assisted reproductive technologies, IUI is relatively cheap.
34	With the development of medical technology, IUI has become more successful.
35	The frequency of non-spouse IUI of non-marital mothers is increasing.
36	Multiple fetuses born with IUI are more likely to be fraternal.
37	In vivo fertilization is safer than in vitro fertilization.
38	IUI is viewed negatively in some religions.
39	Support for artificial insemination for the middle class should be expanded.
40	New-born babies through IUI are more likely to have congenital malformation.
41	Frequent visit to obstetrics for IUI makes the couple stressful.
42	I choose IUI to give birth to multiple fetuses.
43	Maternal weight increases due to hormone therapy in IUI.
44	Frequent failure of IUI makes the couple depressed.

*IUI: intrauterine insemination

Selection Method of P-Sample

Q methodology is a qualitative research not focusing on individual differences, but on meanings and importance within individual, and it is based on small sample doctrine where if the p-sample size gets too big, too many people can gather around a specific factor, inhibiting the revelation of its characteristics [13]. The p-sample of this study consisted of 16 students attending the same nursing department. They were fully given the aim of this study, and all of them agreed to participate in this study as objects.

Q-Classification and Data Analysis Method

Q sorting is the process in which each of research objects included in p-sample sorts statements on IUI in Q-sample by forced normal distribution method, creating a voluntary definition of it [13]. Using Q cards containing the statements, students sorted each of the statements on the 12-point scale ranging from extremely negative to extremely positive. Most of 16 students spent about 15-20 minutes in sorting the cards. On the statements which were sorted on extremely negative or extremely positive, students who sorted the statements in such ways were interviewed later. To do Q factor analysis, this study used principle component factor analysis (varimax). Classification of types was done with the standard of Eigen value 1.0 or over, and by using various factors and considering total variances. Nursing students were asked to sort Q cards in forced distribution on the 12-point scale. Converted scores were coded in the order of Q sample numbers, and analyzed as principle component factors using the QUANL PC Program.

Ethical Consideration of Research Subjects

After acquiring voluntary agreement from all research objects on the participation in this study, this study explained to them that they could terminate their participation anytime during the process. To respect their rights, protect their privacy, and guarantee their confidentiality, all the information collected in the research were anonymously treated and encoded, and Q-sorted.

To ensure the autonomy of participants, the purpose of the research, the method of research, and the recording of the interview contents were explained first before the meeting. Then, the ethical aspects of the box were considered by obtaining verbal consent, receiving consent, and making compensation commensurate with participation in the research. As a measure not to violate the privacy of participants according to the principle of bad behavior, it was informed that the interview would be used only for research purposes, and personal situations were kept secret while ensuring anonymity. Also, it was informed that the research results would be published and the participants could stop participating in the research anytime they want. In order to avoid revealing the identity of research participant, the computer file was assigned a unique password for the researcher and all information that could identify the participant was deleted.

3. RESULTS

Q-factor analysis on IUI among nursing students using the QUANL pc program revealed two types.

Participants in this research conveniently were extracted from 16 nursing college students who were found to have experienced more than one clinical practice in the third grades of the nursing department in University. The general characteristics of the research subjects are as shown in Table 2. The total number of people surveyed total 16 with the average age being 21.69±2.50. Among them, 81.25 percent did not have a religion and 18.75 percent had a religion.

Table 2: General Characteristics

Type	No	Age	Gender	Religion	FWS*
Type 1	1	20	F	No	.3464
	2	21	F	No	.2835
	3	21	F	Christian	1.0195
	4	21	F	Christian	.6782

	9	20	F	No	.2582
	13	21	F	No	.1983
	14	20	F	No	.8420
	16	21	F	Christian	.6787
Type 2	5	20	F	No	.8725
	6	20	F	No	.4101
	7	29	F	No	.3247
	8	22	F	No	.6969
	10	20	F	No	.1431
	11	23	M	No	.5552
	12	22	M	No	.3542
	15	26	F	No	.5172

**FWS: factor weight score*

To classify subjective perceptions on IUI among nursing students, this study described the characteristics of each type. It classified Q-responses of p-sample into upper statements and lower statements, and extracted two factors. In Q methodology, the higher the factor weight of a person is, the more the person is typical or ideal person representing the factor.

Among the statements sorted to analyze characteristics of each type in perceptions on IUI, this study interpreted them focusing on those whose z-score is ±1.00 or over. In this study, the number of the research objects whose z-score is ±1.00 or over was eight in type 1, and eight in type 2, respectively.

The two factors or types of subjectivities explained 35.66% of the total variance. As the first factor did 28.86%, while the second one 6.79%. The first one can be viewed as the factor which can explain the perceptions on IUI the most effectively shown in Table3. Among 16 research objects, eight belonged to factor 1, and eight belonged to factor 2. Those who belong to the same factor are those who perceive similarly to IUI.

Table 3: Eigen Value, Variance, and Cumulative Percentage

	Type I	**Type II**
Eigen Value	4.6183	1.0867
Variance (%)	.2886	.0679
Cumulative (%)	.2886	.3566

The types of subjectivities on IUI acquired from the above analytical methods are as follows.

- The type of perceiving IUI as social problem: The number of research objects belonging to type 1 was eight. The statements on which the objects strongly agreed were "To succeed IUI, man/woman should keep their health" (Z=2.00); "IUI gives subfertility couple the hope that they can have a child" Z=1.73); "IUI using the sperm of a man other than the husband can cause the problem of a person with parental authority." (Z=1.53) Table 4. Among the statements belonging to factor 1, the one whose factor weight was the highest was No. 3 (1.0195), and the statements they agreed the most strongly were No. 16, and No. 25. The statements to which they expressed the strongest negative perceptions were "IUI is against bioethics" (Z=-1.85); "The probability that a baby born by IUI is normal is low" (Z=-1.52); "IUI can cause problems in human identity" (Z=-1.51) Table 4. Among the statements belonging to factor 1, the one whose factor weight was the lowest was No. 13 (0.1983), and the statements they responded the most negatively were No. 17, and No. 12.

The characteristics of type 1 are that they perceive IUI as a social problem, and that they perceive that the society needs to provide individuals and families who try IUI with psychological and financial support. They perceived that the availability of IUI could give hope to subfertility couple, and IUI would increase in the current society where the age when people get married for the first time gets older. They did not agree on the statements

that IUI is against bioethics or threatens human identity. They also did not agree that IUI could increase the probability of having abnormal babies. Therefore, this study named type 1 as 'the type of perceiving IUI as social problem.

- The type perceiving IUI as individual problem: The number of research objects belonging to type 2 was eight. The statements on which the objects strongly agreed were "IUI lets subfertility couple hope that they can give birth to a baby" Z=2.24); "To make IUI successful, it is necessary for the couple to keep healthy" (Z=1.76); "With the development of medical technology, IUI has become more successful" (Z=1.67) Table 2. Among the statements belonging to factor 1, the one whose factor weight was the highest was No. 3 (0.8725), and the statements they agreed the most strongly were No. 25, and No. 26. The statements to which they expressed the strongest negative perceptions were "IUI can cause problems in human identity" (Z=-2.62); "People sometimes mistake IUI as human clone" (Z=-2.22); "IUI is against bioethics" (Z=-1.77) Table 4. Among the statements belonging to type 2, the one whose factor weight was the lowest was No. 10 (0.1431), and the statements they responded the most negatively were No. 10, and No. 9.

The characteristics of type 2 are that they perceive IUI as a personal problem, and that individuals should determine positive and negative aspects of IUI. Therefore, to make IUI successful, each couple should be careful of their health, and the couple should manage depression and stress involving IUI. They also agreed that IUI let subfertility couple hope that they can give birth to a baby, and that with the development of medical technology, IUI became more successful. They did not agree on the statements that IUI is against bioethics or threatens human identity. They also did not agree that IUI could increase the probability of having abnormal babies. Therefore, this study named type 2 as 'the type of perceiving IUI as individual problem in Table 4.

Table 4: Representative Items and Z-score

Representative items of type					
Factor	**Type**	**No**	**Representative items**	**Mean(SD)**	**Z-score**
Factor1 (N=8)	Type1	16	To succeed IUI, man/woman should keep their health.	9.88(1.727)	2.00
		25	IUI gives subfertility couple the hope that they can have a child.	9.75(2.493)	1.73
		24	IUI using the sperm of a man other than the husband can cause the problem of a person with parental authority.	9.25(1.282)	1.53
		19	Korea should make the guidelines for IUI.	9.13(1.642)	1.43
		1	With the age of the first marriage getting older, subfertility and selection of IUI increase.	9.13(1.458)	1.39
	Type2	17	IUI is against bioethics.	3.50(2.070)	-1.85
		12	The probability that a baby born by IUI is normal is low.	3.25(2.605)	-1.52
		10	IUI can cause problems in human identity.	3.75(2.053)	-1.51
		40	New-born babies through IUI are more likely to have congenital malformation.	3.38(2.387)	-1.49
		9	People sometimes mistake IUI as human clone.	3.50(2.070)	-1.45
Factor2 (N=8)	Type3	25	IUI lets subfertility couples hope that they can give birth to a baby.	10.75(1.832)	2.24
		16	To make IUI successful, it is necessary for the couple to keep healthy.	9.13(2.748)	1.76

		34	With the development of medical technology, IUI has become more successful.	9.38(3.159)	1.67
		44	Frequent failure of IUI makes the couple depressed.	8.63(3.204)	1.65
		41	Frequent visit to obstetrics for IUI makes the couple stressful.	8.13(2.696)	1.19
	Type4	10	IUI can cause problems in human identity.	2.13(1.126)	-2.62
		9	People sometimes mistake IUI as human clone.	3.63(3.462)	-2.22
		17	IUI is against bioethics.	3.75(2.188)	-1.77
		12	The probability that a baby born by IUI is normal is low.	4.13(1.642)	-1.42
		33	Among assisted reproductive technologies, IUI is relatively cheap.	4.38(1.061)	-1.29

4. DISCUSSIONS

The analysis of the data of this study led the researcher to classify subjectivities on IUI into two types: type 1 perceiving IUI as social problem, and type 2 perceiving IUI as individual problem. The characteristics of each type are as follows.

Type 1 of this study was the type perceiving IUI as social problem. Those belonging to this type perceive that with the sophistication of the society in this age tends to postpone the first marriage age, and increase the proportion of old age pregnancy, and that the government needs to provide financial support for IUI. To them, the government should be prepared for legal and other problems which can occur regarding IUI. They perceive that such policies are also necessary for the low childbirth and aging society we are entering into.

An important cause of subfertility and IUI is the age of pregnant women [14,15]. In general, reproductive capacity of women reaches the peak at 25 years old, and begins to decrease from the 30s, and rapidly decreases from 35. The tendency of getting married late in the Korean society brings about reduction of conception ability of women, and increase of obstetric diseases causing subfertility and the possibility of natural abortion. In addition, given that long-time use of contraceptives, stress, obesity, lack of exercise, and environmental pollution can increase the possibility of subfertility, some argue that subfertility should be approached as social problems beyond individual problems [16].

IUI is a treatment performed to sub-fertile patient, and IUI is performed according to the characteristics of the sub-fertile patient. With the diagnosis of subfertility, the tests and measures related with IUI add physical pains and emotional burden to the patient [17]. In addition, as conception is the final purpose of sexual relationship with husband [18], satisfaction with sexual intercourse is decreased, and the couple can experience lack of sexual intercourse, and reduction of marital satisfaction. Accordingly, such couples need advice on sexual relationship [19], information on IUI treatment [20], and medical support [21] and nursing.

Foreign advanced countries, in the initial stage, began with developing applying intervention programs which provide subfertility women with subfertility-related information [22,23]. In Korea, with the expansion of state-supported projects on treatment of subfertility, researches on building the basis for such projects have been done[24], and medical doctors and nurses paid increasing attention to new projects on subfertility patients and comprehensive consultation programs to solve psychological problems of such women [25,26]. Currently in Korea, medical teams specializing in subfertility provide specialized subfertility-related services in hospitals equipped with related facilities. The government has also implemented and publicized subfertility-solving projects [27].

If infertility counseling and infertility nursing expert training are effectively implemented to meet the needs of infertility patients as the number of infertility patients increases, infertility patient counseling and nursing can be efficiently provided at the clinical site. Therefore, it is necessary for nurses who care for infertile

women in clinical sites and institutions to recognize the psychological, physical, and economic problems of infertile women and approach them using institutionalized infertility women management programs during education and counseling. In addition, given the current lack of training in infertility care in hospitals and institutions, it is necessary to establish an institutional mechanism to provide and educate nurses in clinical sites in infertility care as well as government support projects.

Type 2 was the type perceiving IUI as individual problem. Those belonging to this type perceived that IUI is personal choice, and preparation for it and the results of the treatment are personal matters. They viewed that each individual should try to overcome physical and mental stresses in the process of IUI. While the government and the society should support the IUI treatment, personal efforts are more important, according to them.

In fact, subfertility women tend to think of all the daily lives in relation with subfertility, and be obsessed with conception, and suffer from various negative feelings such as feeling of shrinkage, guilty feeling, feeling of being handicapped, anger, impatience, negative value, and sorrow. They experience polarization in marital and family relations, and they emotionally get isolated from social relations with friends and neighbors.

Even if diagnosis of subfertility and its treatments have been developed very highly, it takes long time to treat it, and patients should suffer from physical, mental, and economic burdens. Furthermore, even after the treatment, pregnancy is not fully guaranteed. So, in this process, subfertility women experience physical and mental pains, subjecting them to mental problems like becoming easily nervous, excited, or mentally injured, affecting the couple relationship as well [28].

In her comparative research on Western subfertility couples and Iranian ones, Nasseri (2000) found out that the two sets of groups showed similar social behaviors and mental stresses. So, the experiences of subfertility women go through are similar across cultures. However, still, there is not sufficient understanding on women under subfertility treatment [29][30]. Such social, psychological difficulties of individuals cannot be solved entirely by the government or the society. So, individuals should also bear part of them. For the programs developed to deal with subfertility women should fully consider such problems of individuals.

In fact, women who experience infertility think about all their daily activities related to infertility and gradually experience emotional isolation in social relationships such as friends and neighbors. In addition, women who experience infertility experience total collapse in their relationships with not only themselves but also their husbands, in-laws, neighbors, and gods, and give their torn places a new place in pain and struggle. As such, the infertility experience is a painful experience for women to feel torn down not only in physical aspects but also in mental and social aspects and some studies on the experience caused by infertility are being conducted in Korea.

Even if the infertility diagnosis and treatment process is highly developed due to the development of science and medicine, infertility women experience physical and mental pain after treatment, and they are easily nervous, excited, and emotionally affected.

This study explored subjective perceptions of nursing students on IUI, and classified them into 2 types. There should be changes in social awareness on it and policy support for it. In addition, it is necessary to figure out perceptions of nurses who take clinical care of women who need IUI, and develop the program to teach them. There are two types of perceptions among preliminary nurses. First, some nurses perceive it as social problems, and they think that the government and the society should publicize IUI, and prepare policies and programs. Other nurses perceive it as individual problems, and think that it is the problem of the couple who needs IUI, and the couple should deal with benefits and the side effects of it.

Considering the important role nurses play in hospitals in taking direct care of patients and their family members, such a study on subjectivities of nursing students can help change social consciousness on IUI. Plus, this study expects that the findings of this study on subjective structures of nursing students on IUI will be used as basic sources in developing educational programs on nursing students.

However, this study has some limits in generalizing the findings, because it is based only on interviews to students in a specific university, and it did not select research objects based on factors affecting perceptions on IUI. Therefore, future studies should construct Q samples considering various backgrounds.

5. CONCLUSIONS

This study was done to explore subjective perceptions on IUI among nursing students, and to provide the findings of it as basic sources for developing educational programs. This study used Q methodology to figure out perceptive structures. The analysis found two types of perceptions among nursing students on IUI: 'the type perceiving IUI as social problems', and 'the type perceiving IUI as individual problems'.

By classifying perceptions on IUI among nursing students, this study provided basic sources to devise ways to improve perceptions and attitudes in dealing with patients who need IUI. This study expects that the educational programs to teach nursing students should be developed considering such different types of perceptions among nursing students. This study also suggests that there will be more qualitative studies in the future to classify such perceptions into different types, and identify various factors affecting the behaviors of nurses taking care of patients of IUI.

In addition, given the current lack of training in infertility care in hospitals and institutions, it is necessary to establish an institutional mechanism to provide and educate nurses in clinical sites in infertility care as well as government support projects.

6. ACKNOWLEDGEMENTS

Consent for Publication

The author read and aware of publishing the manuscript in Journal for ReAttach Therapy and Developmental Diversities

Data Availability Statement

The database generated and /or analysed during the current study are not publicly available due to privacy, but are available from the corresponding author on reasonable request.

Declarations

Author declare that all works are original and this manuscript has not been published in any other journal.

REFERENCES

[1] Y. Yogev, N. Melamed, R. Bardin, K. Tenenbaum-Gavish, G. Ben-Shitrit, and A. Ben-Haroush. "Pregnancy outcome at extremely advanced maternal age," American Journal of Obstetrics and Gynecology, vol. 203, no. 6, 2010, pp. 558, e1-7, doi: https://doi.org/10.1097/01.aoa.0000400299.33571.23.

[2] D. S. Kim, Y. T. Kim, I. H. Choi, B. Y. Sun, and I. S. Choi, "Advanced maternal age women and adverse birth outcomes in Korea," Final report, Seoul: Korea Institute for Health and Social Affairs, 2013, Report No.:SE0000375549. Available from: http://repository.kihasa.re.kr/handle/201002/11372.

[3] S. Y. Lee, "Policy challenges for pregnancy after the age of 35 years," Health and Welfare Policy Forum, vol. 7, no. 213, 2014, pp. 24-35, Available from: http://repository.kihasa.re.kr/handle/201002/12653.

[4] S. S. Lee, "Current state challenges of policy response to low fertility and population aging," Health and Welfare Policy Rorum, vol. 9, no. 231, 2016, pp. 51-65, Available from: http:// repository. kihasa.re.kr/ handle/201002/15692.

[5] B. Lindsey and C. Driskill, ""The psychology of infertility," International Journal of Childbirth Education, vol. 28, no. 3, 2013, pp. 41-47.https://doi.org/10.1891/2156-5287.3.1.28

[6] G. Iberico, J. Vioque, N. Ariza, J. M. Lozano, M. Roca, J. Liacer, and R. Bernabeu, "Analysis of factors influencing pregnancy rates in homologous intrauterine insemination," Fertility and Sterility, vol. 81, no. 5, 2004, pp. 1308-1313, DOI:10.1016/j.fertnstert.2003.09.062.

[7] M. X. Ransom, M. B. Blotne, M. Bohrer, G. Corsan, and E. Kemmann, "Does increasing frequency of intrauterine insemination improve pregnancy rates significantly during superovulation cycles?" Fertility and

Sterility, vol. 61, no. 2, 1994, pp. 303-307, doi: 10.1016/s0015-0282(16)56522-4.

[8] E. Sonia and F. Marsha, "Treatment options: II. Intrauterine insemination," In: Bayer SR, editor. The Boston IVF handbook of infertility: A practical guide for practitioners who care for infertile couples. 4th ed, Boston, MA: CRC Press; pp. 85. 2017.

[9] J. I. Lee, Y. M. Hur, E. S. Jeon, and J. I. Yoon, "A comparison between fallopian tube sperm perfusion (FSP) and intrauterine insemination (IUI) for the treatment of infertility," Obstetrics & Gynecology Science, vol. 43, no. 12, 2000, pp. 2121-2126, Available from: https://www.ksog.org/journal/search.php

[10] S. Dyess and C. Parker, "Transition support for the newly licensed nurse: A programme that made a difference," Journal of Nursing Management, vol. 20, 2012, pp. 615-623, doi:10.1111/j.1365-2834.2012.01330.x.

[11] M. Wang and S. Jang, "Study of subjectivity on well-dying in nursing students," Asia-pacific Journal of Psychology and Counseling, vol. 2, no. 2, Oct. 2018, GVPress, pp. 159-164, DOI: 10.21742/ APJPC. 2018.2.2.27.

[12] N. Akhtar-Danesh, A. Baumann, and L. Cordingley, "Q-methodology in nursing research: A promising method for the study of subjectivity," Western Journal of Nursing Research, vol. 30, no. 6, 2008, pp. 759-773, DOI: 10.1177/0193945907312979.

[13] S. M. Whang, S. W. You, J. Y. Kim, and R. G. Kim, "Consumer types and cultural consumption characteristics of Korean society: Who spends for what reasons?" Journal of Human Subjectivity, vol. 13, 2012, pp. 25-39. Available from: http:// www.riss.kr/ search/detail/ Detail View.do? p_mat_type =1a0202 e37d52c72d&control_no=f6ca29c361371a0effe0bdc3ef48d419

[14] S. K. Agarwal and R. P. Buyalos, "Clomiphene citrate with intrauterine insemination: Is it effective therapy in women above the age of 35 years?" Fertility and Sterility, vol. 65, no. 4, 1996, pp. 759-763, DOI:10.1016/s0015-0282(16)58210-7.

[15] J. A. Collins and T. C. Rowe, "The age of the female partner is a prognostic factor in prolonged unexplained infertility: A multi-center study," Fertility and Sterility, vol. 52, no. 1, 1989, pp. 15-20, DOI:10.1016/s0015-0282(16)60781-1.

[16] N. M. Hwang, S. Y. Moon, T. J. Kim, and E. H. Sim. "A study on utilization of health services and coping strategies for infertility in Korea," Korea Institute for Health and Social Affairs & Korea Health Promotion Foundation Management Center, Jan. Report no. 2003-13, 2003.

[17] M. O. Kim, "Relationship between infertility stress and quality of life of infertile women: Based on the moderating and mediating effects of sexual satisfaction," Journal of the Korean Society of Maternal and Child Health, vol. 20, no. 2, 2016, pp. 140-151, DOI:10.21896/jksmch.2016.20.2.140.

[18] A. Martínez Pampliega, S. Cormenzana, S. Mar-tín, and L. Navarro, "Marital functioning and treatment outcome in couples undergoing assisted reproduction," Journal of Advanced Nursing, vol. 75, no. 2, 2019, pp. 338-347, DOI:10.1111/jan.13844.

[19] H. S. Lee, S. J. Boo, J. A. Ahn, and J. E. Song, "Effects of uncertainty and spousal support on infertility related quality of life in women undergoing assisted reproductive technologies," Korean Journal of Women Health Nursing, vol. 26, no. 1, pp. 72-83, DOI:10.4069/kjwhn.2020.03.15.

[20] J. Boivin and G. Sofia, "Evolution of psychology and counseling in infertility," Fertility and Sterility, vol. 104, no. 2, 2015, pp. 251-259, DOI:10.1016/j.fertnstert.2015.05.035.

[21] N. Hwang and I. Jang, "Factors influencing the depression level of couples participating in the national supporting program for infertile couples," Journal of Korean Academy of Community Health Nursing, vol. 26, no. 3, 2015, pp. 179-189, DOI:10.12799/jkachn.2015.26.3.179.

[22] B. H. Kwan, A. Y., Luk, and Loke, "A review of supportive interventions targeting individuals or couples undergoing infertility treatment: Directions for the development of interventions," Journal of Sex & Marital Therapy, vol. 42, no. 6, 2016, pp. 515-533, DOI:10.1080/0092623X.2015.1074133.

[23] E. Blyth, "Guidelines for infertility counseling in different countries: Is there an emerging trend?" Human Reproduction, vol. 27, no. 7, pp. 2046-2057, DOI:10.1093/humrep/des112.

[24] N. M. Hwang, J. H. Hwang, and J. E. Kim, "Evaluation of the national supporting program for infertility couples and future policy directions in Korea," Sejong: Korea Institute for Health and Social Affairs, 2010, pp. 10-15, Available from: http://repository.kihasa.re.kr/handle/201002/6107.

[25] S. K. Han and H. S. Kang, "Infertile women's perception on the national support program for infertile couples," Korean J Women Health Nurse, vol. 21, no. 3, 2015, pp. 171-183, DOI:10.4069/ kjwhn. 2015.21.3.171.

[26] N. M. Hwang, H. W. Shin, I. S. Jang, J. S. Park, and H. N. Kim, "Reimbursement system of intrauterine

insemination treatment and future policy directions in Korea," Sejong: Korea Institute for Health and Social Affairs, 2012, pp.15. Available from: http://repository.kihasa.re.kr/handle/201002/9778.

[27] J. Lim and J. H. Lee, "Direction and support level of the fertility welfare policy in South Korea," Journal of Population Aging, vol. 7, no. 2, 2014, pp. 115-141, DOI:10.1007/s12062-014-9098-3.

[28] Y. J. Park, The stress of the infertility women," J Korean Women's Health Nurse, vol. 2, no. 1, 1995, pp. 209-221, DOI:10.4069/kjwhn.2020.03.08.

[29] M. Nasseri, "Cultural similarities in psychological reactions to infertility," Psychol Rep, vol. 86, 2000, pp. 375-378. DOI:10.2466/pr0.2000.86.2.375.

[30] S. -H. Kim. Ethnography on Joys and Sorrows of Women Undergoing Infertility Treatment in Korea". International Journal of Social Welfare Promotion and Management, vol.7, no.2, Jul. 2020, pp.25-32, doi:10.21742/IJSWPM.2020.7.2.04