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Original Article

Health Information Needs of Couples Undergoing Assisted Reproductive Techniques

Masoomeh Latifi[1], Leili Allahbakhshian[2], Fatemeh Eini[3], Nader Alishan Karami[4], Mohammed Nasser Al-Suqri[5]

[1]Fertility and Infertility Research Center, Hormozgan Health Institute, Hormozgan University of Medical Sciences, Bandar Abbas, Iran, [2]Information Sciences and Knowledge Studies, Vice-Chancellery for Research and Technology, Isfahan University of Medical Sciences, Isfahan, Iran, [3]Fertility and Infertility Research Center, Hormozgan University of Medical Sciences, Bandar Abbas, Iran, [4]Department of Health Information Technology, School of Allied Medical Sciences, Hormozgan University of Medical Sciences, Bandar Abbas, Iran, [5]Associate Professor and the Dean of Postgraduate Studies, Sultan Qaboos University, Muscat, Oman

Address for correspondence:
Dr. Nader Alishan Karami, Assistant Professor of Library and Information Sciences, Department of Health Information Technology, School of Allied Medical Sciences, Hormozgan University of Medical Sciences, Bandar Abbas, Iran.
E-mail: alishan@gmail.com

Abstract

Background: Couples undergoing Assisted Reproductive Techniques (ART) come across various information needs. This study aimed to identify the health information needs of couples undergoing ART. **Materials and Methods:** The methodology of the present applied study was qualitative and the research method was conventional qualitative content analysis performed with the participation of 25 infertile couples under ART. The study took nine months (July 2020 to March 2021). The samples were objectively screened based on the criteria from the couples referred to the infertility center affiliated to Hormozgan University of Medical Sciences (Public) and Ome-Leila Specialized infertility clinic (Private) in Bandar Abbas (Iran). Data collection was performed by semi-structured interviews. The typical content analysis method was used in this research. Data analysis was carried out based on coding by the use of MAXQDA a software for qualitative and mixed methods data analysis. **Results:** Information needs of couples under ART were categorized into three main categories and ten subcategories: 1) main cause of infertility [feminine or masculine cause, and etiology (nature and origin)], 2) treatment of infertility [identifying ART, treatment success rate, complications and risks (outcomes) of the treatment method, and treatment duration], and 3) healthcare [advice on medication, healthy nutrition (diet), sexual relations, and daily routine]. **Conclusions:** The results of this study emphasize that the country's health officials, especially those in charge of the healthcare of infertile couples under ART, must necessarily pay more attention to meeting the needs of this group of people in society.

Keywords: *Assisted, consumer health information, infertility, qualitative research, reproductive techniques*

Introduction

Infertility in common is failure to conceive naturally after one typical year of ordinary sexual intercourse without intentionally using contraceptive methods,[1] and primary infertility typically denotes childless couples being unconceived previously. However, secondary infertility denotes merely couples naturally failing to rehearse conception after at least one successful pregnancy.[2] Infertility undoubtedly remains a global issue with uprising trend in most countries in recent years.[3] According to World Health Organization, 15% of couples in the world are infertile.[4] The infertility rate in Iran is worse and reaches 20.2%, denoting one out of every 5 Iranian couples' experiences unproductiveness.[5] ARTs encompass treatments including artificial insemination[6] such as In-Vitro Fertilization (IVF), Intrauterine Insemination (IUI), and Intracytoplasmic Sperm Injection (ICSI).[7] Although these methods are mainly proposed and planned by a specialist considering the patient's condition, adopting an effective method requires the participation and decision of couples.[8] The couples typically undergoing such methods come across multiple therapeutic, psychological, social, and financial stresses.[9,10] Research shows identifying information needs and providing infertile couples with quality health information to sufficiently satisfy their specific needs may not only lead to better decisions on adopting the right treatment and subsequently increasing fertility chances, but also reduce the effects of above-mentioned stresses.[11-16]

Health Information-Seeking Behavior (HISB) represents a meaningful behavior of individuals to satisfy their health information needs and how they search,

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find, and use disease-related information.[17] In recent decades, in parallel with the international attention to health promotion, addressing patients' health information needs has increasingly become important.[10,18,19] Research properly evaluates infertile couples under treatment experience different information needs at each stage of the treatment process.[20,21] Research equally describes health information needs of couples with secondary infertility. Reid and Alfred (2013) addressed the following as information needs of such couples: therapy options, chance of fertility in each course of treatment, side effects of medications for women suffering from primary infertility, and care and treatment.[10] A quantitative study on the information needs of infertile women in Indonesia listed items such as the causes of infertility, treatment methods, benefits and limitations of each treatment, and cost.[11] Another study mentioned clinical information on the side effects of ART, fetal health, and clinical counseling as information needs to decide on ART.[22] Asazawa *et al.* (2018)[23] specifically studied the information needs of infertile men during infertility. The items they addressed included treatment methods, health care, and warm support from the spouse to reduce anxiety and frustration. Finally, other studies on couples undergoing ART reported counseling and support programs by associations for reducing stress as information needs.[24,25] Searching diligently the available literature shows that the health information needs of couples undergoing artificial insemination treatment have been unaddressed in a separate study. In other words, the existing knowledge gap is grounds for independent research. In current study, couples undergoing ART in Hormozgan province (southern Iran) were interviewed in a qualitative study.

Having a high infertility rate, Hormozgan is one of the most deprived areas in the country in terms of access to medical services, interventions, and reproductive health.[26] Therefore, properly recognizing the health information needs of the couples undergoing ART in this area could be used as a critical factor in the process of health-related decisions and infertility treatment. The key reason for preferring the qualitative method represents the apparent lack of empirical studies on the health information needs of couples undergoing ART, especially in Iran. Moreover, the inductive and exploratory approaches to qualitative method help identify the deeper dimensions of the social phenomenon under study.[27] The main purpose of this study was to identify the health information needs of couples undergoing ART in Hormozgan province.

Materials and Methods

This applied study with qualitative methodology started in July 2020 and ended in March 2021. The research operation was performed by the use of conventional content analysis, which is a suitable method for extracting trusted results out of textual data and identifying explicit and tacit themes from data categories.[27]

The participants included 25 infertile couples under treatment ART referred to Infertility Treatment Center affiliated to Hormozgan University of Medical Sciences (public) and Ome-Leila Infertility Clinic (private) during summer of 2020. Sixty percent of the samples were from the public center because the number of patients referred to this center was more, and forty percent from the private clinic. The researchers tried their best to choose the participants with maximum variation (age, education level, employment status, income level, cause of infertility, and type of treatment). Table 1 summarizes the demographic characteristics of the couples who took part in the study. The average age of the women and men were Mean (SD) 32.4 (3.71) and Mean (SD) 36 (6.54) years old, respectively. Although most of the couples held diploma or lower level of education, 21% of the women and 32% of the men held academic degrees. Men were the main source of monthly income of the couples. In this regard, they were classified as low income (66%), middle income (24%), and good income (8%). However, only 4% of women were employed and the rest were housewives. The employment status of male participants was classified as simple workers (48%), businessmen (24%), employed (20%), and unemployed (8%). The cause of infertility according to gender included male infertility (28%), female infertility (40%), both genders (24%), and unknown cause (8%). The average duration for infertility was 5 years. The distribution of cases based on the type of treatment received is classified as IVF (72%), IUI (24%), and ICSI (4%).

The inclusion criteria include Iranian nationality, primary infertility, ability to understand and speak in Persian language, being able to express feelings, emotions, and experiences, having verbal communication ability to provide the researchers with rich and complete information, no successful pregnancy, no stepchildren, and finally no history of divorce and remarriage. On the other hand, the exclusion criteria included reluctance to continue the cooperation and not willing to participate in the interview session. The sampling method was purposeful considering the inclusion and exclusion criteria. Interviews were conducted separately for men and women and no restrictions were placed on the couple if they insisted on a joint interview. Semi-structured interviews were employed for collecting the data and continued until data saturation. Data collection continued until data saturation. In other words, the researchers kept interviewing until they received similar and repetitive responses with no new data from the couples. Giving consent, the interviewees participated in interviews which lasted from 45 to 75 min. The couples agreed to be interviewed in the infertility centers where they had been referred. All the interviews were recorded and later were transcribed as a text file. The researchers prepared the word-by-word transcription of the interviews right after each interview. Then, to immerse in the data

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Table 1: Demographic characteristics of study participants (*n*=25 Couples)

Participant	Gender	Age	Level Of Education	Employment status	Estimated monthly household income	Cause of infertility	Type of treatment
1	Male	38	Diploma	Simple Worker	Low Income	Male	IVF*
	Female	30	Diploma	Housewife			
2	Male	39	Diploma	Simple Worker	Low Income	Male	IVF
	Female	28	Bachelor	Housewife			
3	Male	32	Bachelor	Employed	Medium Income	Joint	IVF
	Female	30	Diploma	Housewife			
4	Male	34	Bachelor	Employed	Medium Income	Female	IUI**
	Female	32	Associate	Housewife			
5	Male	35	Diploma	Simple Worker	Low Income	male	IVF
	Female	32	Diploma	Housewife			
6	Male	45	Less Than Diploma	Simple Worker	Low Income	Female	IVF
	Female	41	Diploma	Housewife			
7	Male	44	Diploma	Simple Worker	Low Income	Female	IVF
	Female	38	Diploma	Housewife			
8	Male	30	Diploma	Simple Worker	Low Income	Joint	IUI
	Female	27	Associate	Housewife			
9	Male	31	Diploma	Simple Worker	Medium Income	Male	ICSI***
	Female	31	Diploma	Housewife			
10	Male	36	Diploma	Businessman	Low Income	Female	IUI
	Female	30	Less Than Diploma	Housewife			
11	Male	33	Diploma	Simple Worker	Low Income	Female	IVF
	Female	28	Diploma	Housewife			
12	Male	34	Diploma	Employed	Low Income	Female	IVF
	Female	32	Bachelor	Housewife			
13	Male	30	Associate	Employed	Low Income	Male	IVF
	Female	30	Associate	Housewife			
14	Male	41	Less Than Diploma	Businessman	Low Income	Female	IVF
	Female	35	Diploma	Housewife			
15	Male	34	Less Than Diploma	Unemployed	Low Income	Joint	IVF
	Female	36	Less Than Diploma	Housewife			
16	Male	40	Less Than Diploma	Simple Worker	Low Income	Joint	IVF
	Female	33	Less Than Diploma	Housewife			
17	Male	37	Less Than Diploma	Simple Worker	Low Income	Joint	IUI
	Female	28	Less Than Diploma	Housewife			
18	Male	36	Bachelor	Businessman	Medium Income	Male	IVF
	Female	30	Diploma	Housewife			
19	Male	40	Diploma	Businessman	Medium Income	Unknown	IUI
	Female	32	Diploma	Housewife			
20	Male	35	Bachelor	Businessman	Good Income	Male	IVF
	Female	30	Diploma	Employed			
21	Male	43	Less Than Diploma	Businessman	Good Income	Female	IVF
	Female	42	Less Than Diploma	Housewife			
22	Male	39	Less Than Diploma	Simple Worker	Low Income	Female	IVF
	Female	34	Diploma	Housewife			
23	Male	33	Diploma	Unemployed	Low Income	Joint	IUI
	Female	33	Diploma	Housewife			
24	Male	29	Diploma	Employed	Low Income	Female	IVF
	Female	30	Less Than Diploma	Housewife			
25	Male	36	Associate	Simple Worker	Medium Income	Unknown	IVF
	Female	31	Diploma	Housewife			

*In-vitro fertilization. **Intrauterine Insemination. ***Intracytoplasmic sperm injection

and get fully involved in it, the interviews were listened to several times. Moreover, the interview manuscripts were read several times. Accordingly, significant semantic units (words, sentences, and paragraphs) were extracted

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and coded. The extracted codes were compared based on their similarities and differences by two coders. The codes with similar meaning and concepts were categorized together. Accordingly, we obtained primary categories of codes which were compared with one another, and then similar ones were grouped together. The categorization continued and finally led to the main categories and subcategories.

Research method was conventional qualitative content analysis. It is commonly used in studies aiming to describe a phenomenon. The data collected via interviews and conception association were analyzed without considering the preexisting theories. In this case, the analysis of the data begins with reading them repeatedly to gain a complete understanding of them. In this method, data analysis is performed based on coding.[28] In this research, coding and resulted content categorization began at the same time of reading the text of the interviews in the analysis of customary content without considering any theoretical background. According to the subject, the unit of meaning was determined and compressed to assign the code step by step. If there was a common background, the codes would merge to determine the categories. Next, the general concepts that were the result of summarizing these categories were obtained. Moreover, the qualitative data analysis management software MAXQDA was used. The trustworthiness criteria used in this study included Credibility, Dependability, Transferability, and Confirmability of Guba and Lincoln.[29] To meet the criteria, the following methods were used: devoting enough time to collect and analyze data in order to have a deep understanding of the people under study, long-term engagement with the data and frequent review and correction of coding, review of interviews and initial coding by participants, i.e., a section of the interview text with the initial code was shown to the participants and the degree of homogeneity of the ideas extracted by the researcher from the data was compared with the participants. In this research, the credibility was met through a process in which a section of the interview text with the initial code was shown to seven participants and the degree of homogeneity of the ideas extracted by the researchers from the data was compared with the participants. To meet the transferability criteria, the researchers carried out the following stages: development and rich description of datasets during the collection phase, precise review of interviews and the process of classifying the findings several times, and a detailed description of all stages of the research from beginning to the end of the study. Conformability was also obtained through review data, interpretations and suggestions, and retaining data, notes, documents, and recordings for review. The researchers met the dependability criteria via following a single method from the beginning to the end of coding, accurate recording of steps and methods of combining, combining and summarizing data.

Ethical considerations

Informed consent was obtained from the participants. They participated in the study on their own will and they were free to leave the study at any stage without any penalties. All patients were assured that their data to be treated as confidential and also to be solely used for research purposes. Before conducting the study, the plan was approved by the Ethics Committee affiliated to Hormozgan University of Medical Sciences under No. 970230 dated 2019/12/03 and the assigned ethics code was IR.HUMS.REC.2019.017.

Results

The identified needs were categorized into three main categories and ten subcategories including "Needs related to the main cause of infertility," "Needs related to the treatment of infertility," and "Needs related to healthcare." The main categories rooted in the common experience and understanding of the couples concerning their information needs from the first referral to the infertility centers to the process of treatment [Table 2].

1. Main cause of infertility
   One of the most important information needs expressed by couples was the main cause of infertility. It is subcategorized into the "Feminine or masculine cause" and the "Etiology (Nature and Origin)."
   - Feminine or masculine cause
     First, it was quite important for them to know who caused the infertility even before adopting any kind of treatment modality. In fact, considering the point that infertility could be caused by either of the genders, it was of high importance to know the one with the failure at the stage of identifying the cause via clinical symptoms of infertility. Concerning this subcategory, participant No. 5 said, *"According to our physician, our problem is Sperm Rejection! We*

Table 2: Main categories and subcategories health information needs of couples undergoing ART

Maincategories	Subcategories
Main cause of infertility	Feminine or masculine cause
	Etiology (nature and origin)
Treatment of infertility	Identifying ART*
	Treatment success rate
	Complications and risks (Outcomes) of the treatment method
	Treatment duration
Healthcare	Advice on medication
	Healthy nutrition (Diet)
	Sexual relations
	Daily routine

*Assisted reproductive techniques

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want to know which one of us causes the problem! How this problem results in infertility?… That's all about my questions!" P5.

Aiming at identifying the feminine or masculine cause of infertility, some of the couples intended to facilitate the decision making process and starting the treatment via acquiring enough knowledge about the prognosis of the treatment method. Male participant No. 13 said, "*We wanted to know who was with the failure and how acute it was!… In this way, we could decide*" P13.

- Etiology (nature and origin)

  Acquiring information about the etiology of fertility was also so important. Some of the couples were interested in knowing more about primary causes (hereditary, congenital, genetic, anatomical origin) and/or acquired or secondary nature or origin of infertility. Female participant No. 2 said, "*One thing I was looking for was the origin of infertility,…, I was told that it was congenital, and I could not understand that my body secreted antibody against sperm. I wanted someone to precisely explain it for me*" P2.

2. Treatment of infertility

   Our results showed that information needs regarding infertility treatment were also of high importance for the couples. Acquaintance with a variety of treatments helped couples undergoing ART make better treatment decisions. This main category included "Identifying ART," "Treatment success rate," "Complications and risks (outcomes) of the treatment method," and "Treatment duration."

   - Identifying ART

     One of the needs in line with perceived need of infertility etiology was to precisely identify ART. Those couples undergoing ART who definitely wanted to participate in treatment process were eager to decide on accepting or declining artificial insemination choices. Female participant No. 10 mentioned their experience as, "*The doctor told me I had to use IUI because of lack of follicles!. We wanted to know what IUI was, and how it was performed, if it was the only choice, or we could have other choices*!" P10.

     Among the participants, there were couples who were religiously and morally concerned about the ambiguity of the consequences of methods of ART (IVF, IUI, ICSI) and needed clinical and religious guidance and counseling. Based on their religious perspective, male participant No. 3 argued, "*We just know the name of the methods, we need to know how they are performed, if religious scholars approve them or not*" P3.

     Male participant No. 19 noted "*I do not know that these methods are accepted by Islamic religious leaders, these methods aren't religiously problematic*!" P19.

   - Treatment success rate

     Some of the couples said that they needed information about the success rate of the treatment method. Female participant No. 1 explained his experience as: "*I believe in Dr. …, and I am sure that nothing undesirable occurs; however, there was nothing more important for me than the doctor would tell me confidently if IVF could be successful this time or not!*" P1.

     Not being aware of the process of treatment, some of the couples continuously needed information about the success of treatment. Male participant No. 9 said, "*After laboratory tests, they told us we had to undergo ICSI …," Then I kept asking, "what are they going to do? Is it successful this time? What is its success rate? and What should I do if it is not successful this time?"* P9.

   - Complications and risks (Outcomes) of the treatment method

     Although most of the couples initially hoped for the success of IVF, they needed some information about the potential complications and risks of IVF so that they could get assured of the health of pregnancy.

     In this regard, female participant No. 14 said, *My questions included "what is the probability of getting pregnant with multiple twins due to the proposed IVF treatment?"* P14.

     Female participant No. 25 asked "*How much is the probability of abortion and/or premature delivery? and Are there long-term complications in this method of treatment?"* P25.

     The reason for emphasis on obtaining information about the complications and the risks of the treatment methods was to make a decision on the right and safe method. Since IVF is performed in laboratory setting, the embryo is quite vulnerable to the time of transportation. Female participant No. 20 expressed some concerns: "*the embryo has altogether been manipulated, and we need to know if the embryo is physically healthy or not!"* P20.

     Male participant No. 16 said "*We want to get sure that the embryo has not been genetically hurt! That's all* " P16.

     Male participant No. 18 believed, *"An embryo is a defenseless cell and is kept in a special apparatus for the first 5 days of its life! Any damage to it can have dire consequences! So, we want to know about the safety of the embryo!"* P18.

     Some of the couples being treated with IUI wanted to know about the complications they were suffering from. Female participant No. 17 said, *"I wanted know why I am experiencing stomachache and mild abdominal muscle contraction, spotting, and vaginal discharge a few days after IUI? Are they because of*

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pregnancy or abortion? Aren't they risky?" P17.

- Treatment duration

  Being informed about the duration of the treatment was another information need that was repeatedly emphasized by the couples. They believed that it would be better if the doctor would speak clearly about the duration of each treatment process from the beginning so that the decision making process and cooperation with the treatment team would be facilitated. Female participant No. 12 said, "*I asked my physician, How many times should your proposed treatment (Stimulation of ovulation) repeated?…. Is there any other treatment method by which we get the result earlier? I needed detailed information about this method. It would be better if the doctor could explain the exact treatment method to the patient"* P12.

  Female participant No. 23 undergoing IUI said *"I needed to know about IUI success rates and postoperative symptoms?"P23.*

3. Healthcare

   Healthcare is subcategorized into four sections including advice on medication, healthy nutrition (diet), sexual relations, and daily routine. In fact, couples under treatment aimed at increasing the chances of successful treatment via acquiring enough healthcare knowledge and following the instructions regarding the treatment.

   - Advice on medication

     The participants needed information about medication including duration of use, how to use, indications, dosage, side effects, and interactions. They needed this information to improve self-care. Female participant No. 8 said, "*I just wanted to know when to use the medicine with the recommended dosage. What are the effects of the medicines?… Don't the new medicines interact with Buspirone pills which I am taking at the moment? Don't the new medicines have side effects on the embryo?*" P8.

     In some of the cases, the purpose of information need regarding advice on medication was managing symptoms. As an example, female participant No. 22 said, "*One of the problems I have is pressure drop and headache, after taking Femara (Letrozole). I wanted to know what I should do when I have such symptoms"* P22.

     Noting the probability of forgetting the physician's instructions, some of the couples using hormonal injections needed the information regarding time, storage, and injection to be written on a separate paper by the physician. Female participant No. 7 said, "*Before IVF, we have to inject several series of ampules intravenously and subcutaneously. Because of stress and forgetfulness, we need the instructions to be provided in writing. You know, some of them must be refrigerated, time and method of injecting should be precisely recorded; otherwise, all our efforts would be in vain*!" P7.

   - Healthy nutrition (Diet)

     Believing in the impact of healthy nutrition on increasing the chance of fertility and success of treatment process, some of the couples needed precise and detailed nutritional information. Female participant No. 6 said, "*Higher the number of ova at the time of IVF, the higher the chance of fertilization." My questions were: "What foods increase the number of ova? What is the optimum dosage daily? And how long should I continue the diet?"* P6.

     Not having enough information about healthy nutrition, some couples thought it was necessary for the fertility facilities to have either a nutritionist or a nutrition consultant. Female participant No. 9 said, "*I don't know much about nutrition. If there would be a nutritionist to provide nutritional recommendation in the clinic, I could acquire better information on what to eat, what not to eat, whether daily consumption of multivitamin supplements or Multi Prenatal vitamins could improve the chance of fertility if the result of ICSI was positive"* P9.

   - Sexual relations

     One of the most important needs described by the participants was sexual relations. Having had feeling shame and shy, they could not ask the healthcare providers about their intimate affairs; hence, this issue was not addressed by the providers. Male participant No. 24 said, "*The issue we have always had questions about and we never managed to ask, and the doctors never addressed it was sexual relationship! Should we be cautious? Can we use lubricants and other stuff? Do they cause any problems?"* P24.

     Some couples under treatment with IVF and IUI needed information about the conditions and the proper position for having sex. Male participant No. 4 said, "*It is hard for us to ask sexual questions. The doctors sometimes recommend particular time and conditions for such affairs. Although such requirements are specified by the doctor and asks us to explain, it becomes hard for us to do so, what should we do in this regard? What is the proper position of intercourse after ART?*" P4.

   - Daily routines

     It was very important for some of the participants to obtain information about daily routines including starting work at home, going to work, traveling, and sports activities after ART. Female participant No. 21 said, "*In my opinion, someone under treatment with ART is like a broken vase which has been glued! So, they have to be taken care of carefully! We need to know when to start work at home! What can we do at home? What can't we do*

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at home? Is it necessary to rest and lie down during IVF? Can we go swimming? Is it possible to lie in the bathtub?" P21.

Female participant No. 15 said, "*Their treatment is like planting a sapling, they plant the sapling and then leave it to God. You know, the sapling needs to be taken care of, we need to know what points we should consider! Can I use stairs to go upstairs and downstairs?"* P15.

Female participant No. 11 asked,"*For me who has to sit at the desk for a long time, isn't it risky? I am an employee, isn't it dangerous for me to go on administrative missions inside Hormozgan province or out of the province?"* P11.

Discussion

This study sought to identify the health information needs of infertile couples undergoing ART. Findings were comprehensively divided into three main categories: "Main cause of infertility," "Treatment of infertility," and "Health care."

The category of the main cause of infertility is subdivided into "Feminine or masculine cause," and the "Etiology (nature and origin)." We found out that the couples were interested in knowing which one of them caused the infertility, or how this problem resulted in infertility. These results were consistent with those of Bennett *et al*.[11] However, some studies have reported that infertile couples are reluctant to know about the etiology of infertility due to fear and stress.[30,31] Moreover, we found out that it was important for the couples to know the primary cause of infertility so that they could decide on choosing the proper treatment method. An earlier study also reported that there was a direct relationship between knowing about the kind of infertility and picking the best treatment.[8]

The second main category of health information needs of the participants was the information needs related to the treatment of infertility. According to the documented experiences of the participants of this study, information about all aspects of the treatment process were essential including identifying ART, treatment success rate, complications and risks (outcomes) of treatment method, and treatment duration. By knowing more about ART, the couples could choose the safest treatment method. The information needs concerning identifying ART could not only be a factor for preventive and precautionary measures, but also could clarify Islamic Sharia's point of view regarding ART procedure. In this regard, the consensus of experts in the field of infertility, religion, and law can play an effective role in developing a comprehensive counseling guide and answering medical, legal, and religious questions of volunteer couples before choosing this treatment. Although this finding has not been addressed from this perspective in other studies, some of our findings are consistent with the results of the studies pointing out treatment options, fertility chances in each treatment period, and side effects of ART on maternal and fetal health.[10,11,23]

The third main category of the information needs of the infertile couples was "health care." This category included information needs about advice on medication, healthy nutrition (diet), sexual relations, and daily routines. They would, in fact, improve the self-care skills of the couples undergoing ART and subsequently increase chances of fertility. It has been proved that a nutrient-rich diet is effective in preventing and treating infertility. Adequate consumption of these substances can increase the antioxidant power of sperm as well as the production of healthy eggs in women. Neglecting this point could result in frequent miscarriages and reduce the success rate of fertility in the couples.[11] The results of the study by Asazawa *et al*.[23] showed that health care before and after ART is one of the basic needs of treated couples in which health care plays a critical role in fertility and maternal and fetal health. Studies by Legro *et al*.[32] on women undergoing infertility treatment showed that being informed about a healthy diet and low to moderate physical activity increased the rate of fertilization. In other words, the women accepted the diet and physical activities as the requirements to increase the chance of fertility. In the present study, it was found that despite feeling the need for information on sexual relations, the participants were not willing to address them. The lack of a culture of asking questions and not differentiating asking for information needs from decency have led to unanswered questions for couples under treatment. In the reviewed literature, there are few references offering the required information on sexual relation. Studies have demonstrated most infertile couples had not received any sexual counseling.[33] Therefore, the prevalent sexual disorders among infertile couples could possibly be contributing to their infertility.[34,35] This could be due to the fact that talking about sexual relations and disorders are culturally uncommon in Iran.[36] In this way, providing sexual health counseling could improve the conditions of infertile couples.

The findings of the present study could have global implications for HISB studies addressing infertile couples. The reason is that any further development of health programs and interventions for such couples requires the involvement and participation of the stakeholders (especially infertile couples). Moreover, it is quite important for the community of fertility health to focus on the participation of the stakeholders in studying scientific evidence concerning health information needs of infertile couples under treatment in order to meet their critical issues. Such points have elaborately been addressed in our study.

One of the other characteristics of the present study was the location of the study. It was conducted in Hormozgan province, which is one of the least deprived areas of the

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country. It is recommended interested researchers to carry out similar research in other contexts.

However like any other study there was some limitations; However, the most important item to be addressed here was to manage and coordinate the face-to-face interviews due to the outbreak of COVID-19.

Conclusion

Although the health information needs of infertile couples under ART treatment including the main cause of infertility, treatment of infertility, and health care are entirely noticeable, the needs have been fully unsatisfied yet. It, in fact, demands particular attention to counseling before embarking on the process of treatment. It is recommended both infertility health care providers and willing consumers to be completely sensitive to the paramount importance and significance of counseling. This could be performed by the use of need assessment using standard forms, educational booklets, and brochures as well as virtual pieces of training.

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Conflicts of interest

Nothing to declare.

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