

Original Article

The Opinions and Thoughts of the Women who had Undergone Hysterosalpingography for the First Time: A Qualitative Study

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Abstract

Background: Hysterosalpingography (HSG) is a radiological procedure that allows evaluation of fallopian tubes and uterine cavity. Although, it is a minimal invasive procedure, HSG leads to anxiety in patients.

Objective: We aimed to determine the relevant opinions of women before and after HSG.

Methodology: The study was designed as a qualitative descriptive research. Study was conducted with 20 voluntary women who underwent HSG for the first time. The data were collected by the researchers using a face-to-face interview technique and a semi-structured in-depth individual interview with audiotaping.

Results: We identified that internet was as the most frequently used source of information about HSG, but women were not sufficiently informed about the procedure. Verbal expressions of women before and after the procedure were examined in terms of themes and sub-themes. Pre-procedure interviews revealed that women were awaiting a very painful procedure and therefore feeling fear and anxiety. According to the post-procedure interviews, they indeed expressed less pain than expected and described HSG as a non-fearful procedure.

Conclusions: Prior to HSG, women's anxiety levels were high, and they were mostly afraid of experiencing pain. For this reason, we believe that in order to reduce the anxiety and change the belief about they surely experiencing pain during the HSG, it is important to offer accurate and effective counseling before the procedure to women who will undergo HSG.

Key Words : Hysterosalpingography, Pain, Anxiety

Introduction

Hysterosalpingography (HSG) is a radiological procedure that allows evaluation of fallopian tubes and uterine cavity (Bhatt et al., 2017; Hoja, 2019). It is a simple imaging method that requires a minimally invasive procedure and performed by administration of a radiopaque material through the cervical canal (Wadhwa et

al., 2017; Karakus et al., 2014). It is also frequently used for the reason that it is a reliable and cost-effective diagnostic method (Tokmak et al., 2015) to investigate and manage infertility and recurrent pregnancy losses (Wadhwa et al., 2017; Karakus et al., 2014). Uterine and tubal anomalies, polyps, and myomas can be determined via HSG (Wadhwa et al., 2017; Karakus et al., 2014). This procedure is

considered as the gold standard in assessing tubal length and is recommended also in National Institute for Health and Care Excellence (NICE) guidelines (Fertility: Assessment and Treatment for People with Fertility Problems Appendices A-O.; 2013, N.d.). HSG is perceived as a painful and stressful procedure as opposed to its frequent use and ease of application (Tokmak et al., 2015). A study states that during HSG, 11% and 38% of the women experienced severe pain and moderate pain, respectively (Costello et al., 2002). In this study, it is also stated that due to its invasive nature, although minimal, HSG leads to anxiety in patients (Costello et al., 2002). In a study examining the effects of HSG, it is reported that 59% of women experienced high stress (Eimers et al., 1997). Similarly, several other studies point out that not only the women but also their spouses have high stress levels before and during the HSG (La Fianza et al., 2014; Erkilinc et al., 2018). Several intervention studies have been conducted on HSG. However, we believe that it is important to determine the women's views, feelings, and experiences about the HSG in order to figure out which interventions will be effective for women who undergo HSG.

Methodology: Qualitative research is one of the preferred methods in determining the details of the research subject and experiential processes. The information obtained in this kind of research provides access to information that cannot be obtained with quantitative data (Lewis, 2015).

Type of Research: This study is a qualitative, exploratory study aimed to determine the knowledge and experiences of women about HSG.

Sample Selection and Size: The study group consisted of 20 women for whom HSG had been planned for the first time in obstetrics and gynecology outpatient department of a training and research hospital and all have agreed to participate in this study. Inclusion criteria included (a) age of at least 18 years; (b) ability to read, speak, and understand Turkish; (c) not experiencing a mental health condition that would hinder ability to understand the informed consent and directions for the demographic form and HSG procedure (d) and the women scheduled for HSG for the first time upon diagnosis of primary or secondary infertility were included in the study. Women who previously had HSG procedure were not included in the study.

Data Collection: The research data were collected using a semi-structured deep interview

technique between December 2017 and June 2018. Local Institutional Review Board (IRB) approval was obtained before the initiation of study (IRB approval date and number: 19 December 2017, Number: 17/21-19). Individual interviews before and after procedure lasted for a total of 20-30 minutes for each participant. "Demographic Characteristics Questionnaire" - consisting of 14 questions including socio-demographic and obstetric details of women- and open-ended questions about HSG procedure were used for collecting data. The open-ended questions were prepared by the researchers to determine the knowledge status of women about HSG (Figure 1). Interviews, before and after the procedure were audiotaped. Women, who came to the hospital for first-time HSG procedure, were included in the study. Women were informed about the purpose of the research as well as the research steps and voice recording system. Then, written consent was obtained from the women. Women's knowledge status about HSG, their information sources and feelings were asked during individual, face-to-face interviews performed in the waiting room. The answers were recorded with a voice recorder. HSG was carried out using the routine procedure. Prior to the HSG, women replied to "Demographic Characteristics Questionnaire", "What is the HSG procedure?", "What do you know about HSG procedure?" directed by the researchers. Then, women were prepared appropriately and HSG was performed by a team of a doctor, a nurse, and a radiologist. Once the procedure was finished, women were asked how the procedure was, what she would tell to the other women about it and what were her suggestions to any other women who will undergo HSG. Once the interviews were completed, the women were asked whether they wanted to add or remove answers, and they were allowed to review their answers. During the interview, the active listening method was used and additional questions were asked about the subject when necessary. The calls transcribed to the Microsoft Word program.

Evaluation of Data: In the evaluation of the data, content analysis method was used. The data were evaluated by researchers independently. The themes and sub-themes were established. Later, the researchers gathered together and agreed upon a common theme list. Once list of themes were established, all themes were classified by the researchers into themes and sub-

themes. All interview data were interpreted and reported. Each participant was assigned a numeric code which is indicated at the end of their respective statements.

Limitations of the research: Qualitative research reflects the current views and beliefs of the individuals involved in the interview. They cannot be generalized. Although qualitative research does not constitute evidence-based data on the subject, it may enable individuals to convey their experiences in line with their views and beliefs thus helps to determine their needs.

Results

The average age of participants was 32.7 ± 5.40 years. Out of 20 women, 12 were university graduates and 9 were employed. Twenty five percent of women reported having miscarriage and 20% had children. It is detected that 11 of them were overweight. Women were asked whether they had information or not about HSG, and 15 of them said that they had information. When their source of information was questioned; 10 women identified their source as internet, 3 women as doctors and 2 women stated getting information from their friends/relatives (Tables 1 and 2).

Table 1: Socio-Demographic Characteristics of Women

	n(20)	%
Age (32.7 ± 5.40)		
20-30	8	40.0
31-35	5	25.0
36- 43	7	35.0
Educational Status		
Primary School	3	15.0
High School	5	25.0
University and Higher	12	60.0
Employment Status		
Employed	9	45.0
Not Employed	11	55.0
Body Mass Index		
<18.5	3	15.0
18.6-24.9	5	25.0
25-29.9	11	55.0
≥ 30	1	5.0

Table 2: Women's Some Obstetric Characteristics and Information Status about HSG Procedure

Obstetric Characteristics	n(20)	%
How many years they didn't use any contraceptives		
1 year	7	35.0
1-2 year	7	35.0
3 and higher	6	30.0
Abortion		
Yes	5	25.0
No	15	75.0
Having Children		
Yes	4	20.0
No	16	80.0
Information Status about HSG		
Yes	15	75.0
No	5	25.0
Information Sources about HSG		
Internet	10	66.7
Doctor	3	20.0
Relatives/Friends	2	13.3

Table 3: Categories, Themes and Sub-Themes Concerning Women's HSG Procedure and Their Views and Experiences

Category	Theme	Sub-Themes
<u>1.Before HSG Procedure</u>	1.Information resource	Internet Friends / relatives Doctor
	2.Information About Procedure	Drug delivery/fluid injection Painful procedure Increase your chance of becoming pregnant Determining whether the tubes are open For IVF treatment
	3.Thinking of having pain	Menstruation-Like Pain Painful procedure
	4.Fear and anxiety	Being afraid of having pain Stress / Tension / Excitement Gynecological examination position
	5.Questions about HSG	Is there a pain? What is the procedure for? Can the procedure be done under anesthesia? Who will do the procedure? How long will it take?
<u>2.After HSG Procedure</u>	1.Pain	There was no pain Light / Durable pain Menstruation-like pain Stabbing pain
	2.Privacy	Shyness Gynecological examination position Shame due to male doctor
	3.Suggestions to patients who will undergo HSG procedure	It was not like written on the Internet, Deep breathing, Calm/Relax, Know that it is simple and short, Nothing to be scared of, Analgesia can be taken before procedure, It would be better to done with anesthesia

In this research, we assessed women's knowledge, perceptions, and recommendations for the women who will undergo HSG, focusing on the pre and post-procedure

Themes and Sub-themes Before HSG Procedure

Before HSG procedure, the questions "What are your views on hysterosalpingography?" and "Do you have information about the procedure? Where did you get the information?" were asked and the recorded verbal expressions were handled under five themes (Table 3).

Information Resource

Women were asked from where/whom they had their information about HSG and their statements were addressed under 3 sub-themes. These sub-themes are; internet, friends/relatives and doctors (Table 3). According to the replies, internet ranked at the first place as a resource and based on the information from internet, women were thinking that HSG would be very painful. Consequently, women had increased levels of anxiety before the procedure. Women stated that they usually received information from the Internet.

"I watched a video from the Internet ... I have also received information from friends who have already had. They said the same thing ..." (P1, age 31)

"...I got the information from my doctor. Also I researched from Internet..." (P7, age 35)

Information about HSG Procedure

The women were asked what they knew about HSG procedure and their corresponding statements were addressed in 6 sub-themes. These sub-themes were determined as Drug delivery/fluid injection/spraying to the womb, painful procedure, increasing chances of becoming pregnant, determining whether the tubes are patent, necessary for In-Vitro Fertilization (IVF) process. Some women had true information about HSG procedure, but some women had incorrect and incomplete information.

"I think they will give a medicine to womb channels... I think the walls of uterus will be seen with the help of that medicine. The only thing that I know is I have a cyst at uterus... They will inject

fluid to my womb. And that fluid is like a paint, and will penetrate into tubes and this will be seen..." (P1, age 31)

"...they will do injection to the uterus. And then they inject some fluid named contrast matter. And while the contrast matter is penetrating, they capture a record... I have heard and read some things like that there could be medical mistakes during procedure and an infection or perforation may occur in uterus." (P6, age 28)

"...I don't have any idea about how it is done...I have seen in a video recorded by a doctor and that it is ... women was in the same position as the usual birth position in the video." (P4, age 31)

Thinking of Having Pain

Pain-related expressions of participants were discussed in two sub-themes. These sub-themes of were menstruation-like pain and painful procedure. In their consideration, HSG would be a very painful procedure for most women which resulted in higher anxiety levels.

"The only thing that I know about HSG procedure is it is such a painful procedure." (P9, age 38)

"I have heard that it is a very painful procedure. They have said me that I have right to fear and will suffer lots of pain..." (P18, age 25)

Fear and Anxiety

Verbal expressions around fear and anxiety about HSG were discussed in three sub-themes. These sub-themes were determined as; being afraid from pain, stress/tension/excitement, and gynecological examination position.

Women stated that they were scared of HSG procedure. They stated the fact that the procedure is performed in gynecological examination position which made them feel nervous. Also, pre-thoughts about they would feel pain increased their fear and anxiety. Some women stated that they experienced a high level of anxiety because of the information they received from internet.

"I want to leave the procedure at any moment. I can escape any moment. I'm married for 2 years and I will do this for the first time. I first came to gynecology

ward, and this is the first time I've been through these stages. I had a gynecological examination before, and I'm suffering from it." (P1, age 31)

"Now, I'm so nervous. Although I am a healthcare professional and know the steps of the procedure, being here as a patient is very different. I have even discussed about anesthesia. But for that, a lot of procedure is needed. Besides the pain, the idea that the operation will be in the gynecological position is also bothering me. Even though now I'm a bit better, I'm still frightened.." (P20, age 38)

A woman who thinks that getting information will increase her anxiety indicated that she was frightened although she did not receive any information.

"...Actually I'm frightened of the procedure. Because I don't know the procedure... Because of that I'm frightened...I didn't read anything, for not to be frightened..." (P11, age 31)

Questions about HSG

Related to the women's questions about HSG procedure, five sub-themes have been identified. These questions are; "Is this a painful procedure?", "Why will this procedure be done?", "Can the procedure be done under anesthesia?", "Who will do the procedure?", "How long will it take?". Women need to find answers to the questions they wonder about the HSG procedure.

"... I would like to find out if it is painless or very painful ..." (P4, age 31)

"... I want to know what will happen, how many minutes will it take, what will it consist of?" (P11, age 31)

Themes and Sub-themes After HSG Procedure

After the HSG procedure, the replies given by women to the questions "How would you evaluate your hysterosalpingography procedure experience?" and "What are your suggestions for the women who will undergo HSG?" were considered as 3 themes.

Pain

Women were asked to describe the pain they experienced after the procedure. Many women stated that the procedure was not as painful as they thought. Pain-related expressions of women about HSG were discussed in 5 sub-themes. These sub-themes are; no pain, Light/Durable pain, menstruation-like pain, stabbing pain.

"It was normal. I had pain during the procedure. I have pain right now. But, it was not very painful, but it was similar to period pain. I cannot explain this procedure because someone needs to experience it herself, cannot tell anything. The doctor put a tool down and I do not know exactly what he put it on. From there he injected medicine. At that time, I felt ache. There was a feeling like urinary incontinence." (P2, age 26)

"... There was not much pain. But just feeling there is something made me tighten and nervous maybe because of that I felt some pain but normally I don't think that it is a painful procedure. Just I have tightened myself much." (P1, age 31)

Privacy

The fact that the HSG procedure is performed in the gynecological examination position is one of the factors that increase the anxiety of women. In this study, women's expressions of privacy about HSG were discussed in 3 sub-themes. These sub-themes are; Shyness, Discomfort from gynecological examination position, Shame due to male doctor.

"... I am very embarrassed. I have both pain and shyness. If you consider health at the first place, you have to get this procedure done ... I was a bit hesitant because doctor was male. I was expecting a female doctor. I was so shy." (P2, age 26)

"During procedure, the setting makes me nervous; lying, gynecological examination also made me nervous. Others accounts for nothing, it wasn't more than two minutes." (P6, age 28)

Women stated that they would be more satisfied with a female practitioner because of our cultural characteristics.

“I do not know which doctor is going to do this procedure. I guess I'd be more comfortable if it could be done by a female surgeon...” (P20, age 38)

Suggestions to Patients who Will Undergo HSG Procedure

After the HSG procedure, women were asked about their suggestions for women who will undergo HSG procedure. According to their answers, women's suggestions to patients who will undergo HSG procedure were discussed in 7 sub-themes. These sub-themes of women are; It was not like written on the Internet, Deep breathing, Calm/Relax, Know that it is simple and short, Nothing to be scared of, Analgesia can be taken before procedure, It would be better to done with anesthesia.

“I think before the procedure it can be good to take painkiller and don't need to be afraid at that time there is little pain but after that no pain. They put on a lubricant gel and then they put a tool in until they reach the channels. You feel a little pain and pressure at that time. Also, there can be some blood. After that they took a fluid (asking me whether it is blood or not) it ends.” (P7, age 35)

“I would say there's nothing to be scared of, it is only two minutes. I cannot describe the procedure. It is a little more painful than the usual gynecological examination. I had heard it's very useful, they make it without wasting time.” (P13, age 27)

“I can say I felt little pain. It felt menstruation-like pain. I would say there is nothing to fear...” (P15, age 37)

Discussion

In our study, we determined that women's knowledge about HSG, which is deduced from their own verbal expressions, is not sufficient. Women have expressed that they obtained the information about HSG mostly from internet and women who had experienced HSG previously. According to our research results, the number of doctors and nurses who give information about procedure is low. In their study on information status about radiological examination conducted by Buyukkaya et al., 88% of the patients were

not informed by doctor and 71% of them had no information about the procedure. Authors also stated that 12.4% of the patients had learnt from the internet and 15.2% were from their relatives who had undergone the same procedure (Buyukkaya et al., 2015). These results are similar to our research results.

We determined that the information that women obtained with their own efforts increases their anxiety towards procedure. In interviews with women, it is reported in a qualitative study conducted by Williams et al. that women were mostly anxious before the procedure, some were concerned about privacy and some were concerned about the procedure. In the same study, it was determined that women did not fully understand how many health professionals are required during the procedure in order to facilitate the procedure (Williams et al., 2010). In another study, which was conducted on women who undergo HSG or colposcopy patients' knowledge, pain, and anxiety levels were evaluated. It was determined that women who had HSG procedure were found to have higher levels of knowledge, anxiety and had experienced more pain during the procedure than women who had colposcopy (Handelzalts et al., 2016). In a randomized controlled trial, pre-procedural training and counseling were given to women who had undergone HSG procedure and it was found that women's anxiety levels were reduced statistically significantly in the consulting group (La Fianza et al., 2014). For this reason, it is important to ensure that women who are going to have HSG procedure should receive true and reliable information from healthcare professionals. In this way, the adaptation of the patient to the HSG procedure might help preventing the women's prejudice, anxiety and misinformation about the procedure.

Most of women think that they will have pain during the procedure. We determined that this is due to incorrect information that was received from the internet. In this study HSG procedure was perceived as a painful procedure by women. In a study by Tokmak et al. there was a significant relationship between pre-procedural anxiety levels and post-procedural pain levels (Tokmak et al., 2015). It is well-established that in the literature anxiety is correlated to pain (Lerman et al., 2015, Karaman et al., 2016; Senior et al., 2019), providing counseling to the patient constitutes an important step for

providing reliable information. In this way, healthcare professionals may reduce the anxiety of women and indirectly decrease the pain levels.

In a randomized controlled trial evaluating the effect of misoprostol and NSAIDs on reducing pain level of women during the HSG procedure, NSAIDs were found to reduce pain of women during the procedure at a statistically significant extent (Hassa et al., 2014). In the study of Karakus et al., the Visual Analogue Scale (VAS) scores of the group who were treated with lidocaine spray were significantly lower than those of the control group (Karakus et al., 2014). In our study, a patient who stated that she had analgesic before the procedure stated that the procedure was not painful. Therefore, in addition to effective counseling, it was considered that the using analgesics can be offered to the patient's preference, thereby reducing the anxiety and pain of the treatment and improving adaptation to procedure can be provided.

It was found that the statements of the participants during the procedure were significant. Women expressed gynecological examination position and the male doctor who performed the procedure caused embarrassment. In one study, it was found that the VAS scores of the group in which the HSG was performed by a female doctor were lower than those of the group performed by a male doctor. This is thought to be related to the feelings that patients feel more comfortable when they have a procedure performed by female doctors (Wadhwa et al., 2017). In another study, it was stated that gynecological examination leads to anxiety and shame (Yanikkerem et al., 2009). Some of the women who participated in our research expressed their discomfort about a male doctor doing the procedure.

In our study we found that women mostly take information from Internet and there are so many negative comments about HSG procedure. Women, as a suggestion to other women who will undergo HSG procedure, said that the Internet is not reflecting the truth.

Deep breathing, being calm was found useful by the women and procedure was defined as a simple and short procedure. A woman stated that she took analgesics before the procedure and she expressed that she didn't feel pain. This part of our study differs from other studies in the literature. The suggestions of experienced women

for women who will have HSG procedure are very important in terms of determining women's needs, expectations and solution suggestions.

It is very important to share this information with women who will undergo HSG procedure. Also, this research can be a helpful reference for women who will undergo HSG procedure.

Conclusion: HSG is an important procedure during identifying infertility; but the information that women get from the internet and their surroundings is not enough and therefore their anxiety levels are increasing.

It is important for women to obtain accurate information about the HSG procedure, provided by healthcare professionals on early stage of HSG procedure. Doctors and nurses are important healthcare professionals at this stage. Nurses can make use of their important roles such as providing counseling to reduce the anxiety and pain of women. Studies determining women's experience about HSG are very limited in number. For this reason, it is very important to determine what they experienced during the procedure, their recommendations and their wishes.

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