

## Women's and Care Providers' Perspectives of Quality Preconception Care: A Qualitative Descriptive Study

### Abstract

**Background:** A growing body of evidence is showing that Preconception Care (PCC) can increase the health and well-being of women and couples and improve subsequent pregnancy and child health outcomes. The present study aimed to determine the quality of preconception care from women's and care providers' perspectives. **Materials and Methods:** This qualitative study was conducted in 2020 using conventional content analysis approach. Face to face Semi-structured interviews were conducted with 13 reproductive age women and 12 midwives recruited from urban health centers across Shahroud, Iran. Data were analyzed using qualitative content analysis. **Results:** Three major themes based on Donabedian's model emerged during data analysis: structure, process and outcome of care. Midwives and women's experiences of quality of preconception care included problems in organizing care, poor education performance of personnel and low-sensitivity about importance of preconception care in women. **Conclusions:** The findings suggest key considerations for the organizing and delivery of preconception care. Most especially, it seems necessary to adopt appropriate strategies to improve public awareness about the importance of pre-pregnancy care.

**Keywords:** Delivery of care, Quality of health care, preconception care, Iran, qualitative research

### Introduction

Today, Preconception Care (PCC) is a commonly accepted way to best optimize women's health and improve pregnancy outcomes.<sup>[1]</sup> It is considered a cost-effective preventive first-line strategy for birth defects and other complications associated with pregnancy. Therefore, it is necessary to provide pre-pregnancy health care with new mechanisms tailored to the health needs of the target group, in order to improve reproductive health, as well as maternal and child health.<sup>[2]</sup> It also reduces the potential risks that threaten the developing fetus. Some of these interventions include pregnancy spacing, family planning promotion, prevention and management of infectious diseases, as well as screening and chronic disease management.<sup>[1]</sup>

While 80% of women have healthy pregnancies and deliveries, rates of complications are rising. Between 2014-2018, the rates of pregnancy complications rose more than 16%, while rates for childbirth complications rose more than

14%. About seven out of every 1,000 pregnant women experienced both kinds of complications, a nearly 31% increase since 2014.<sup>[2]</sup> Moreover, two-fifths of all women become pregnant unintentionally; therefore, 40% of couples decide to have children when it is too late to intervene.<sup>[3]</sup> In addition one in four women in developing world experience obstetric disorders that is not immediately fatal such as Chronic diseases that can affect the course of pregnancy and may have lasting effects that manifest at and after birth.<sup>[4]</sup> Therefore, it is necessary they should be diagnosed and controlled before pregnancy. The complications as malnutrition and iron deficiency anemia, for instance, result in at least 20% more maternal deaths worldwide. Moreover, more than 35% of pregnancies occur in women with unknown gonococcal infections, leading to low birth weight, preterm birth, and death of preterm neonates in more than 10% of cases.<sup>[5]</sup> Studies on health problems in Iranian women highlight the need for PCC. The prevalence rates of gestational diabetes, metabolic syndrome, obesity in

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women over 18 years, and preterm delivery in Iran were reported as 3.41%, 36%, 14%, and 9.2% respectively.<sup>[6-9]</sup> In addition, the prevalence of preeclampsia in Iran has been reported to be 7-8%.<sup>[10]</sup> Women who start their pregnancies in poor physical and mental conditions are not only at risk for maternal and neonatal complications but also increase the burden of medical care. According to statistics, a 2.5% reduction in obesity and a 5% increase in women's optimal weight for pregnancy in the United Kingdom (UK) save 12 million euros a year.<sup>[11]</sup> PCC as part of antenatal care is a golden opportunity that can be used to identify risk factors for pregnancy and make the necessary interventions before pregnancy.<sup>[12]</sup> Various studies show that poor access to preconception care is a major barrier to the improvement of pregnancy outcomes. But the only access is not enough because access to good quality of care is a key component to improve maternal and newborn health outcomes.<sup>[13]</sup>

The quality and method of delivery of care are influential factors affecting the results of pregnancy and childbirth.<sup>[14]</sup> That is why improving the quality of maternal care services is regarded as one of the five global strategies for the promotion of reproductive health and women's health programs. Since it is known as an effective strategy to reduce maternal mortality.<sup>[6]</sup> Health policymakers and executives also believe that the majority of deaths are rooted in the lack of maternity care coverage for women, inadequate care, or poor quality care. In order to achieve universal health coverage, it is essential to deliver health services that meet quality criteria.<sup>[15]</sup>

In countries around the world, and especially in leading countries in providing pre-pregnancy care to determine the quality of pre-pregnancy care, indicators such as unwanted pregnancy rate, normal weight at the first visit to prenatal care and other indicators are used<sup>[16]</sup> and in Evaluate the effectiveness of changing care of these indicators. The Haifa Wahhabi study examined the effectiveness of pre-pregnancy care in diabetic women. The results of this study showed that these cares have reduced the rate of congenital anomalies by 70%.<sup>[17]</sup> Scholder Tracy also evaluated the educational intervention provided by health personnel in the pre-pregnancy period and this intervention has been effective in modifying risk factors and lifestyle changes.<sup>[18]</sup> In Iran, several studies have evaluated preconception care quantitatively. The technical performance of the personnel and their interpersonal interaction with the clients were reported at a moderate level in a study conducted on PCC process.<sup>[19]</sup> Another study evaluated the structure of PCC in health centers and its potential impact on pregnancy outcomes in women of childbearing age.<sup>[20]</sup> In this regard, qualitative data can examine different aspects of a variable and provide more complete answers. Also, the quality should be measured from the perspective of people who are in direct and continuous contact with this care. Health care providers who provide prenatal care content and women of childbearing age who receive these services are

well aware of the strengths and weaknesses of this care. In fact, Quality must be examined from the consumer's point of view. By one definition, quality is what increases the value of a product to the customer.<sup>[21]</sup> Quality refers to the extent to which demands are met, wants and needs that are usually expressed by the customer. Nevertheless, since no qualitative study has evaluated PCC, the current study aimed to explain the perspectives of health personnel and women of childbearing age regarding the quality of PCC in health care centers.

## Materials and Methods

This qualitative study was conducted in 2020 using the conventional content analysis approach. In conventional content analysis, coding categories are derived directly from the text data. The advantage of the conventional approach to content analysis is gaining direct information from study participants without imposing preconceived categories or theoretical perspectives. This article is part of doctoral dissertation entitled Assessment of current preconception Care Program, Modification and assess it in Iran in which 25 participants (including twelve women of childbearing age, thirteen midwives) were interviewed in Shahroud [Table 1].

This research was performed in maternal health unit of 4 health centers in Shahroud, Iran. The subjects were selected through purposive sampling and invited to participate in the study. The inclusion criteria of midwives were having at least one years of working experience in the maternal health unit, enough time, and willingness to contribute in the interview. The inclusion criteria of women were women in childbearing age, receive health care services from health centers, able to read and write Persian and willingness to contribute in the interview. Using purposeful sampling method, the participants were selected with the maximum variation in terms of age, gender, and work experience. The data were gathered through individual, face to face, in-depth and semi structured interviews by the main researcher. In present study, interviews continued until the data saturation. Each interview session with midwives was started with an open-ended question and continued using probing questions such as: "What are your experiences of attending a pre-pregnancy care? What experiences have you had in the implementation of this program?. The questions of individual interviews with women participants included: "How was the provided pre-pregnancy care at the health center? What do you know about the importance of pre-pregnancy care? What made you go to the health center to receive pre-pregnancy care?".

Data were subjected to conventional content analysis using MAX Qualitative Data Analysis 12 was used to facilitate the organization and comparison of the data. Data analysis was performed at the same time as data collection and shortly after the first interview, and continued until data saturation.

**Table 1: Demographic characteristics of participants in the research**

Characteristics of reproductive age women				Characteristics of health care providers				
Participant	Age	Education	Occupation	Participant	Age	Staff position	Education	Work experience
1	31	Bachelor	Employed	1	24	Healthcare provider	Bachelor	1
2	37	Bachelor	Housewife	2	25	Healthcare provider	Bachelor	2
3	27	Diploma	Housewife	3	45	Healthcare provider	Associate degree	25
4	26	Associate degree	Housewife	4	40	Healthcare provider	Bachelor	17
5	28	Bachelor	Housewife	5	41	Staff expert	Master of midwifery	18
6	25	Associate degree	Housewife	6	46	Healthcare provider	Bachelor	22
7	35	Diploma	Housewife	7	40	Healthcare provider	Bachelor	10
8	29	Diploma	Housewife	8	26	Healthcare provider	Bachelor	1
9	24	Associate degree	Housewife	9	26	Healthcare provider	Bachelor	2
10	26	Bachelor	Employed	10	38	Healthcare provider	Bachelor	12
11	27	Associate degree	Housewife	11	43	Healthcare provider	Bachelor	21
12	25	Diploma	Housewife	12	36	Faculty member	PhD of reproductive health	5
13	-	-	-	13	45	Healthcare provider	Bachelor	15

In this study, 25 interviews (with the duration of 25–40 min) were conducted at the desired places by the participants. All interviews were digitally recorded. Interviews were continued until data saturation occurred, that is, no new data code emerged in the interviews. To analyze the data, conventional qualitative content analysis with Graneheim and Lundman approach were used. Simultaneously to performing the interviews and recording them with a voice recorder device, the researcher regularly transcribed the interviews. Then the interviews were read repeatedly to achieve a complete understanding of them. After that, the sentences were coded and after formation of the codes, similar codes were merged into each using the inductive method; those with similar concepts were placed in one category and formed the sub-categories. Afterwards, by comparing the sub-categories with each other, categories that had similar concepts were placed in one main category. To secure the credibility of the data, various methods including performing the in-depth interviews at different times and places, combining different data gathering methods of individual interviews and field note taking and selecting the participants with maximum variety (regarding their educational level, socioeconomic status, occupation, age, number of children before the incidence, and the duration passed from pregnancy termination) were used.

Also, during some other meetings, transcripts and the coded interviews were given to four of the participants and their final opinions were obtained, so that revision by the participants would be achieved. Opinions of four experts were obtained to assure confirmability and dependability of the data with the participants' statements. In the present study, to increase transferability, results of the study were given to three women with similar inclusion criteria who received preconception care but did not participate in the study, to judge the similarity of the results to their own experiences.

### Ethical considerations

The confirmation letter for performing the research was obtained from the ethics committee of the research deputy of the Shahroud University of Medical Sciences (ethical code: IR.SHMU.REC.1398.25) and obtaining written informed consent, preserving anonymity, maintaining the confidentiality of the data and providing the right of withdrawal at any time were respected.

### Results

The participants of this study were 12 health personnel working in health centers who had between one and 22 years of experience, and 13 childbearing age women who attended to healthcare centers. The age range of the subjects was 24–34 years old. After data analysis, 160 codes, 22 sub sub-categories, 7 sub-categories and three main categories were achieved. These three themes included the structure, process, and outcome of care. [Figure 1]

### Structure of care

#### Access

Everyone has the right to equal access to quality health services, a system of health protection providing equality of opportunity for everyone to enjoy the highest attainable level of health. preconception care is provided in health centers because these centers cover a wide range of people and reproductive age woman can access easily to healthcare services.

#### *Lack of link between health centers and hospitals in access to medical and obstetrical history of women*

Access to comprehensive, quality health care services is important for promoting and maintaining health, preventing and managing disease. "Some women who refer to us do not remember the history their previous pregnancies. If we had information about their problems in the hospital,

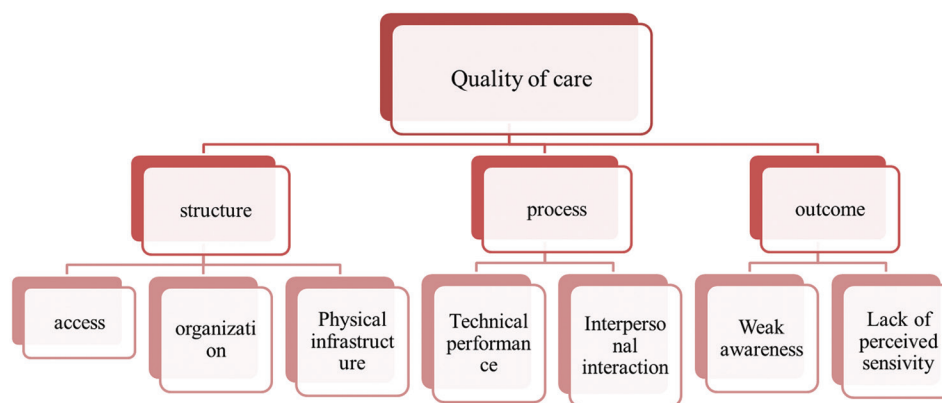


Figure 1: quality of preconception care thematic

it would help us with patients' medical history" (healthcare provider. No. 2).

### **Necessity of geographical accessibility to the health center**

Geographical distance was also one of the problems raised by the participants as one of the barriers to access. "There is an area under the coverage of our center which is very far from here. Women have to take a taxi. That's why they don't even come when you call and follow up, not even to take folic acid" (Healthcare provider. No. 1).

### **The necessity of time management for delivery of care**

Ease of scheduling appointments and health center hours if are being flexible enough to accommodate women's personal lives were identified as dimensions of quality care. One of the current problems is the lack of care for clients in the last office hours in health centers. "The health centers are not crowded at all, they are only a bit crowded at the beginning of the week, but the staff of the center does not work after 12 noon" (woman. participant. No. 6).

The lack of replacement worker to cover for absent employees and working women's lack of access to primary care services in health centers were barriers that influence the provision of PCC.

One of barriers to access was the congestion of the health center at certain hours of the day. Most study participants stated that the waiting time for receiving care was not long. A respondent said: "When I go to the healthcare center to receive care for myself or my infant, I don't have to wait for long. The center is usually uncrowded and two or three people are waiting for care every time I go there" (woman. participant. No. 4).

### **Lack of signposts at the health centers**

One of the issues raised by participants was that there is no signpost to guide clients to receive the services they need in some health centers. "The signposts on the doors say healthcare provider, but you don't know what they mean and what everyone is doing. In the early days, when I went for

care, I didn't know where to go, and I asked the janitor where the midwifery care is provided" (woman. participant. No. 1).

### **Physical infrastructure**

#### **Proportion of health infrastructure to the covered population**

Infrastructure of health centers should be commensurate with the burden of referrals to these centers. In this study, participants were satisfied with the place provided for the construction of the center and mentioned that a seat is always available except for the busy days that rarely occur. "I go to the health center every time of the day, there is a chair to sit on, and the waiting time for care is not long, and I do not wait long" (woman. participant. No. 4).

### **Cleanliness of centers**

Regular and routine cleaning of health centers so that the environment is clean and free of pollution is one of the principles of hygiene. Several participants unanimously believed that the center they refer for care was clean, tidy, and rebuilt. "Both the center I went to for care and the center I went to for my tests were renovated and tidy" (woman. participant. No. 8).

### **The necessity to equip health centers in accordance to user's expectation**

The public sector has specialized equipment and manpower for preconception care but less than the private sector. Most participants in study also preferred the private sector to the public sector because of more manpower, amenities and equipment. "I refer to private centers and here. The private sector has more amenities and care facilities. They take both Pap smears and other treatments, such as ultrasounds. It also has a cleaner environment. In addition to what I said, the personnel of the private sector are specialized and literate, while the qualified staff is rarely found in the public sector" (woman. participant. No. 6).

### **Organization of care**

organizing includes the tasks to be performed, identifying

who should perform the tasks, how to group tasks, and determining who should report.

### **Problems with health information technology**

The Integrated Health System (SIB) system was launched aimed to valuable goals such as implementation of an Electronic Health Record (EHR). Of course, the widespread adoption of information technology brings many potential benefits and at the same time, problems.

#### **Defects in PCC content**

The content of PCC is incomplete for risk assessment the complications of prior pregnancy, as well as the presence of high risk behaviors, such as smoking and alcohol and etc.:*“In these care services, the history of cesarean section, diabetes and hypertension in the previous pregnancy is not asked. No history of infertility and unwanted pregnancies is also available. In the case of high-risk behavior, clients don't tell us about their high-risk behavior or drug addiction. Even if they tell about their high-risk behaviors, they don't know about their husband's behavior”* (healthcare provider. No. 5).

#### **Information Management Defects**

The electronization in health care is also associated with problems such as system slowdown or power outages.: *“if the power goes out, it may be delayed providing of PCC for up to two or three days and we have to write down the content of care in paper”* (healthcare provider. No. 8).

#### **Absence of standard indicator of quality of care**

Feedback from clients about the service received at the health center via a text message cannot assess the real quality of service provided.: *“When we go to the health center, a text message comes after receiving the care and asks our satisfaction with how to provide care”* (woman. participant. No. 8).

#### **Barriers of referral system to health care provision**

Referral system problems were one of the issues that participants acknowledged. The ambiguity of the referral destination at the second level of referral was a cause of dissatisfaction among participants. *“I am not satisfied with this center because they only refer me with a form and tell me to go to a specialist and we do not know which doctor to visit”* (woman, participant. No. 7).

#### **Problem in financing**

##### **Cost of services**

The clients have to pay for some services of PCC: *“People have to pay for pre-pregnancy tests. That's why so many women don't refer”* (healthcare provider. No. 4, 5, 7).

##### **Dissatisfaction of Health Provider with the payment methods**

One of the problems is fee for services.: *“When you provide a mother with several care services, one service is*

*registered in the system, but when you take care of a child, several services are marked in the system, and it's not fair at all”* (healthcare provider. No. 8).

#### **Pre-pregnancy care in accordance with mandatory the directive issued by the Department of Health**

In health centers, women of childbearing age are followed up and mandatory pre-pregnancy care is provided them.: *“We have to fill out a pre-pregnancy care form for mothers despite their unwillingness pregnancy”* (healthcare provider. No. 10).

*“Another problem is that we have to pre-pregnancy care for mothers with two-year-old children, an only child, and two children in spite of tendency to pregnancy. In fact, we mandatory take care of women and most of these care are incomplete because of Lack of cooperation of women. The preconception care services are valid only for one year and must be repeated every year. These women say even if we have to buy the contraceptives from the private sector, we will not have children in this economic situation* (healthcare provider. No. 4).

There is no or Weakness in information propagation poor information propagation regarding PCC in the health centers and there are no posters or other teaching aids such as pamphlets to educate PCC.:*“I didn't see any posters about pre-pregnancy care at the health center. Some pamphlets are sometimes distributed in centers. There are also posters about nutrition and other things”* (woman. participant. No. 5).

#### **Process of care**

##### **Technical performance of health personnel**

##### **Poor quality of educational performance in health centers**

Assessing the educational empowerment of health center staff in educating clients can lead to identifying educational needs, improving the quality of education and also promoting community health *“In general, there is a problem with education now, from a one-year-old child to a 90-year-old man who comes to the health center, when the client comes, he/she receives care based on the system, but no special training is provided”* (staff expert. participant. No. 5).

*“I've experienced care in public and private sector. what the Obstetrician educate me is different from health center. The personnel of healthcare centers don't have the needed knowledge to provide preconception health care.”* (woman. participant. No. 6).

##### **Lack of health providers motivation**

If the employees are not satisfied with their jobs and not motivated to fulfill their tasks and achieve their goals, the organization cannot attain success.

##### **Over-focus on quantity and neglect of quality of care**

The performance of health personnel is providing

pre-pregnancy care quantity.:”*The midwives only want to perform the task assigned to them and do not pay attention to its quality. They should decrease their dependency on the system and computer and pay a little attention to the quality of care*” (woman. participant. No. 4).

### **Health of pregnant women, the first priority of health centers**

The first priority of health centers are pregnant mother and her health status.: “*In health centers, women receive attention only during pregnancy, and as soon as they give birth, the midwives don't care about them anymore, from then on, only the neonate and his/her monitoring*” (woman. participant. No. 10).

### **Poor knowledge of personnel about preconception healthcare**

The knowledge and awareness of health personnel about preconception healthcare is insufficient.: “*The personnel of health centers are not knowledgeable enough. When you ask a question, they say that the doctor will be present at the center on a specific day*” (woman. participant. No. 11).

### **Women preferred private over public facilities**

Women believed private providers offered the advantages of convenience, efficiency and privacy, though they did not consistently offer high-quality care.: “*In private sector you receive more attention. Because health personnel don't control the baby after birth, I have to come here for pregnancy care*” (women. participants. No. 11, 10).

### **Interpersonal communication**

The way medical personnel responds to their needs and requests is an element that boosts performance, contributing to an increase in the prestige of the medical unit and the growing interest of patients-customers in it.

### **Positive workplace behavior**

The majority of women in the study reported that health care personnel interacted well with them.: “*The behavior of the staff is good and friendly. They answer the questions we ask to the best of their ability*” (woman. participant. No. 10).

However, some participants expressed dissatisfaction.: “*The health center was uncrowded when I referred to but the staff answered me unwillingly*” (woman. participant. No. 5).

### **Devotion of sufficient time and responsiveness**

Most of the participants believed that the health personnel spend enough time to take care of them and they acknowledged that health personnel responded to their questions to the best of their ability.” *The staff behaves well, they spend time for caring us. I am satisfied with them*” (woman. participant. No. 4).

## **Outcome of care**

### **Weak awareness**

Lack of awareness of women about PCC is one of the consequences of PCC provided in health centers: “*A major reason for women's non-referral is their unawareness. Some people don't even know about pre-pregnancy*” (healthcare provider. No. 5).

### **Low perceived sensitivity**

Perceived sensitivity refers to a person's perception of the degree to which they are at risk. “*The covered population by our center is more the young population but the referral for pre-pregnancy care is low. Even if they have a genetic problem in the family or relative, they don't refer for pre pregnancy care*” (healthcare provider. No. 8).

## **Discussion**

The study findings provide information on the important elements of quality preconception care as described by women and care providers, which reflect the structure, process and outcome of care.

The structure of preconception care provided in health centers is generally good, but it also has shortcomings. There has been much attention in the literature to access to care, which is one dimension of structure of care. In current study accessibility index is defined as a combination of facilities to provide care and the opportunity to receive that care. Our findings were consistent with other study, access to care has been reported as one of the components of the care structure.<sup>[22]</sup> In a similar vein, in another study, access has been reported as an influential factor affecting the quality of pre-pregnancy care.<sup>[23]</sup> Poor interaction of hospitals with centers in access to the medical and obstetrical history of participants is one of the significant problems in the current study. The clients especially those with low education level, do not give an accurate obstetrics history. If the health personnel have access to the hospital complications data of the clients, it will help to perform related interventions.

Ease of geographical access and continuity of access were things that participants were dissatisfied with. It is worth noting that the entire population covered by a health center, especially in low-income areas, should have equal access to care and not be deprived of care due to distance. In a similar vein, in another study, a problem is that the available resources are not allocated to the most effective interventions, are geographically concentrated in large cities, and do not reach the poor.<sup>[24]</sup> In a similar vein, in another study, Geographical and environmental conditions, such as distance, location of health facilities, transportation options and costs, have also been identified as critical barriers.<sup>[25]</sup> It is essential that all female such as employees, housewives, students and etc., have access to health care services. Another problem is access lack in employed women to

health centers services due to the working hours. Participants said that despite taking hourly leave to take care, the health personnel were refusing to take care of them.

Participants expressed satisfaction with the physical environment and infrastructure. The results also suggested that the waiting time for an appointment for all types of services was not long. It can be attributed either to the detailed planning of health centers to meet the needs of the target groups or the small number of clients. In addition, the results showed that the public sector provides fewer facilities, compared to the private sector. Some participants stated that the government sector offers fewer and low-quality facilities since their services cost less. In a similar vein, in another study, The poor physical conditions of government centers in compare with private sector was one of problem in Care delivery physical spaces.<sup>[26]</sup>

Health information technology is health technology, particularly information technology, applied to health and health care. It supports health information management across computerized systems and the secure exchange of health information between consumers, providers, payers, and quality monitors. Some deficiencies have also been reported in the content of PCC and Integrated Health System (SIB) poor monitoring, referral system problems, and imbalances in the allocation of merit pay. The inefficiency of the electronic system in the event of a power outage and delayed care was one of the issues that the health personnel were dissatisfied with. In agreement with the findings of other studies, incomplete PCC content in the assessment of pregnancy and childbirth records was one of the existing problems reported in the current study. The results of current study were consistent with a study that pointed to some drawbacks in the electronic system. This researcher noted that a series of essential information could not be extracted from the system for the assessment of a person's medical history.<sup>[26]</sup> Furthermore, the expression of satisfaction via text messages is not indicative of the quality of services provided by health personnel. The experts of the Maternal Health Program stated that since the clients is not aware of the content of the preconception care, their satisfaction does not reflect the quality of provided care.

Problems with the referral system are also one of the issues mentioned. The problem of referral is the non-specified referral destination, and the health system has no contract with specific physicians to refer clients to the second level of referral. Therefore, the clients may refer to a specialist who is unaware of the health referral system. In a similar vein, in another study, was reported poor interaction of hospitals with centers in referrals.<sup>[26]</sup> It is equally important to mention that for the referral system to function properly all referral levels need to be appropriately equipped (having the necessary equipment, personnel with correct skills mix, pharmaceuticals and transport), so that very few

emergencies are referred to the tertiary hospital, and thus are referred to the nearest competent health facility in the same or nearest region<sup>[27]</sup> The results of this study were consistent with other study that the referral system problems as one of the challenges in the maternal health program.<sup>[26]</sup> In another study, problems with the referral system have been reported to prevent women of childbearing age from receiving PCC.<sup>[28]</sup>

In a similar vein, in another study, identified barriers affecting the uptake and delivery of preconception care such as, lack of a comprehensive preconception care program; and poor coordination and organization of preconception care.<sup>[28]</sup> In the process of care, performance of health personnel is moderate, but personnel communicate well with women participating in the study. According to a study, the care process is one of the most important components affecting the quality of care. All the facilities, equipment, and human resources are provided in the care structure section to be offered to the clients in the care process, and the method of care provision determines the quality of care.<sup>[23]</sup> In the current study, deficiencies in the care process included overemphasis on quantity and neglect of quality of care, impairment in the provided training, over focus on women's health during pregnancy in most centers and insufficient knowledge of staff. However, the participants were satisfied with the good behavior of the health personnel and mentioned that they are well-behaved and devote sufficient time and effort to answer their questions. In line with the current study, in a study the sub-categories of personnel's educational performance and good behavior are part of the pregnancy care process.<sup>[26]</sup>

In general, pre-pregnancy health care provided by health personnel focuses more on the two components of risk assessment and intervention. The educational performance of health centers in the field of pre-pregnancy health care is weak. There is no educational content for promoting health before pregnancy, whether in the form of posters and pamphlets or educational booklets in health centers. Of course, in addition to these cases, the attitude of the staff to provide pre-pregnancy care is also important. The results of the study showed that the midwives participating in the study considered training to be specific to pregnancy and believed that the pre-pregnancy period should only be assessed for risk and necessary intervention. Women reported that health personnel had little knowledge about preconception health care and were unable to answer their. Also, health personnel also stated that they have not seen specialized training courses for providing pre-pregnancy care and first priority is to take care of mothers during pregnancy. In a study personnel reported the numerous competing preventive priorities within the general practice setting such a pregnant mothers health.<sup>[26]</sup>

One of the issues in providing care is the health personnel's dependency on the electronic system. Health

personnel focus more on quantity of preconception care and completion of items in the system. Technology can play a key role in supporting these integrated care models. Electronic health records (EHRs), has the potential to extend the reach of the workforce; support quality measurement and improvement initiatives to drive a learning health care system; electronically deliver prevention, treatment, and recovery interventions; efficiently monitor patients; identify population health trends and threats; and engage patients who are hesitant to participate in formal care.<sup>[27]</sup>

According to the results, the personnel instead of care provision, just focus on the completion of forms in the system and do not devote much attention to the quality of care. For this reason, women felt that receiving pre-pregnancy care was only a blood and urine test, and when asked about the pre-pregnancy measures and care provided to them, they mentioned that they were referred only for blood and urine tests. In the present study, women participants stated that her health care provider recorded a follow-up of her test while no follow-up was performed. In a similar vein, in another study Creating false statistics due to unregistered care records and Unrealistic register services in the system were challenges in Information management.<sup>[26]</sup>

The clients stated that they had received no special training when they were seeking PCC. In some cases, the training was even provided incompletely. Moreover, as participants asserted, the health personnel are not knowledgeable enough. The inability to answer clients' questions increases the level of dissatisfaction and makes people distrust the performance of health personnel.

The results of this study were consistent with a study that indicators designed to assess maternal health programs focus more on the quantity of care, instead of care quality.<sup>[26]</sup> In a study have also stated midwifery education as an important challenge in the maternal health program. They also reported that midwifery education suffers from deficiencies in three areas. The first part is related to weakness in the curriculum, educators with incomplete skills, failure in the educational curriculum (curriculum limitation, lack of diversity in graduate courses).<sup>[28]</sup> Another point acknowledged by almost all the participants was the over focus on women only during their pregnancy. They asserted that they lose that attention as soon as they give birth. These results may be due to the fact that health personnel are highly sensitive to the reduction of maternal mortality. Furthermore, the participants women are not very aware of the content of PCC and the right time to receive this care. In this regard, the health personnel stated that they do not have any information propagation regarding PCC in the health center and they inform the clients themselves.

The results of outcome of care showed that after 15 years of implementation of pre-pregnancy care in Iran, women still do not realize the importance of this care and has

low knowledge about pre-pregnancy care. In a study was reported three reasons for not seeking preconception care: perceived sufficient knowledge, perceived lack of risk and misunderstanding of the aim of preconception care.<sup>[29]</sup> In a study was reported The barriers to general practitioner providing preconception care included women not planning their pregnancies and lack of perceived need.<sup>[30]</sup> A qualitative descriptive approach to quality of preconception care is a as a high strength in this study. In Shahroud city, it has a different socio-economic context than other cities, which can have a great impact on people's referrals to health centers and their expectations from these centers and quality of preconception care, which limits the generalizability to the whole country, which is one of the points is a as a high weakness in this study.

## Conclusion

Quality of preconception care is multidimensional and faced challenges and has shortcomings. The study findings suggest the need to focus on more than the content of preconception care and the referral system., The attention of health care personnel to the quantity of care instead of quality and over focus on women's health during pregnancy were other problems. In the outcome section, inadequate awareness of the importance of PCC are another problems that need the attention of policymakers and officials in the maternal health program.

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## Conflicts of interest

Nothing to declare.

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