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Barriers To Early Presentation Of Symptomatic Breast Cancer In Local Population: A Qualitative Study

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IMPORTANCE Breast cancer is the most common type of cancer in women and the second most common after lung cancer in the world. Statistics consistent with GLOBOCAN 2012 state that 1.67 million cases of breast cancer were diagnosed in 2012 alone and resulted in 522,000 deaths that year making it the most frequent cause of cancer death in women in less developed regions. Pakistan itself has the highest prevalence of breast cancer amongst all countries in Asia where every one-in-nine women are likely to suffer from it at any point in their lives. In addition to the high disease burden, a major fraction of these cases is diagnosed at advanced stages. This advanced stage diagnosis results in more aggressive treatment, poorer outcomes, poorer quality of life and higher mortality rate. Public awareness of this disease may help in early detection of breast cancer, decreasing mortality rates and, ultimately, increasing probability of survival. Identification of these delaying factors is crucial for removal of barriers to early detection and treatment of breast cancer patients.

METHODS This is a qualitative study based on interviews and includes breast cancer patients as study participants. 24 Subjects fulfilling the inclusion criteria were selected from Shalamar Hospital's one stop Breast Clinic data by purposeful criterion I sampling and their consent was taken for an in-depth interview according to a preformed interview-guide, taking 20-30 mins each, which were then transcribed. Transcribed interviews were further managed using QSR NVivo (V. 9). Iterative analysis following tenets of grounded theory identified themes and their inter-relationships. Thematic analysis was undertaken, and final results explained in tables and percentages.

RESULTS Twenty-four women were included in this study, four women had passed away due to severity of their disease, four women did not agree to become a part of our study and there were sixteen women who consented for it. All sixteen women were aged >40 years and were married. Several barriers to early presentation and diagnosis of Breast Cancer were reported and identified.

CONCLUSIONS A significant percentage of women with breast cancer in Pakistan delay presentation primarily because of lack of awareness about the disease and its management. Along with the need to be examined by female doctors only, failure to understand breast cancer symptoms, ignoring them, and reliance on spiritual healers for cure were all identified as significant risk factors for delayed presentation. Coordinated efforts are, therefore, needed from public health departments regarding awareness about breast cancer and its therapeutic outcomes, to educate women and remove the barriers identified.

KEYWORDS Breast Cancer, Early Identification, Barriers, Prognosis

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Qualitative Study

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Breast cancer is the most common type of cancer in women and the second most common after lung cancer in the entire world[1]. Statistics consistent with GLOBOCAN 2012 state that 1.67 million cases of breast cancer were diagnosed in 2012 alone and resulted in 522,000 deaths that year making it the most frequent cause of cancer deaths in women in less developed regions[2,1]. Between 1975 and 1990, Asia and Africa experienced a more rapid rise in the annual incidence rates of breast cancer than North America and Europe[3]. Pakistan itself has the highest prevalence of breast cancer amongst all countries in Asia where every one-in-nine women are likely to suffer from this disease at any point in their lives [4,5]. Approximately 90000 new cases are diagnosed every year out of which 40000 pass away[6]. A study on the incidence and mortality of breast cancer demonstrated that the highest age standardized death rate (2.52) in Asia due to breast cancer was observed in Pakistan [7].

In addition to the high disease burden, a major fraction of these cases are diagnosed at advanced stages. A study

reported how a high proportion of breast cancer patients [around 71% of the cases at INMOL and 63% at SKMCH (Local Cancer Hospitals)] presented to their Breast Clinics at stages III and IV [8]. Such a late presentation points to the alarming situation of the rising trend of breast cancer incidence in Pakistan. This advanced stage diagnosis results in more aggressive treatment, poorer outcomes, poorer quality of life and higher mortality rate [9]. Public awareness of this disease may help in early detection of breast cancer, decreasing mortality and, ultimately, increasing the probability of survival. The average 5-year survival rate for women with non-metastatic invasive breast cancer is 91%. The average 10-year survival rate for women with invasive breast cancer is 84%[10]. If the invasive cancer is located only in the breast, the 5-year survival rate of women with breast cancer is 99%[10].

This delayed presentation may be related to diverse factors, including women's lack of knowledge about the disease, methods to diagnose early and various cultural factors. This highlights the need for mechanisms that can help detect this cancer early and even treat it early. The duration of delay in seeking medical aid after the appearance of breast cancer symptoms can be reduced by identifying possible factors contributing to the delay which could improve early diagnosis of the disease at a less advanced stage. This would lead to better prognosis and, ultimately, improved survival rates in Pakistan[11].

Several studies have reported multiple factors responsible for advanced stage presentation. There is a lack of awareness about symptoms and importance of self-breast examination[12]. Patients are often unable to relate their initial symptoms to Breast Cancer unless they were lump-related symptoms[13]. Low socioeconomic status has been seen to be linked with advanced stage presentation and worse outcomes [14]. Educational status, awareness about disease and access to health care resources are regarded as significant factors in this regard [15]. All these factors can broadly be classified as personal, sociocultural and economic barriers.

This study was designed to identify barriers by analyzing patients' perceptions and factors involved in delayed breast cancer presentation in the local cohort of the population through qualitative methods crucial for removal of the barriers for early detection and treatment. Eventual aim of this study is to target the barriers identified by addressing them through goal directed specific mass media and other awareness campaigns in Pakistan.

METHODOLOGY:

This is a cross sectional qualitative study carried out from May 2020 to December 2020 at Shalamar Hospital which is a not-for-profit 500 bedded tertiary care hospital in Lahore. The study was based on in-depth interviews and included breast cancer patients presenting to Shalamar Hospital's One Stop Breast Clinic as study participants. Fifty women who had presented to Outpatient department from 2019 June to 2020 May were randomly selected from the available data. The sampling technique then applied was Purposeful – Criterion I. Twenty-four participants were selected for the study (of 18 years and above) that had presented with breast-related complaints of two months or more, had breast carcinoma and if their lesions were not screen detected. Principal investigators conducted 1-on-1 in-depth interviews through a guide after consent was taken from the study population. Twenty-four women were contacted out of which three had already passed away owing to their aggressive malignant diagnosis and remaining five did not consent to become a part of the study. The research instrument consisted of a specially developed questionnaire-guide in English and Urdu language. It contained open and closed ended questions related to the respondent's knowledge, awareness regarding breast cancer, screening techniques, economic and social reasons affecting early presentation to Outpatient department etc. The guide allowed study participants to talk about salient themes in their own words at their own pace. Each interview took 20-30 minutes and was recorded. They were transcribed with the help of QSR N-vivo (V.9). Researchers went through transcripts line-by-line to categorize and describe data, and then developed themes through selective and conceptual coding e.g. IIIB5 (257), where III= participant, B= theme, 5=subpart, 257=line number. Newer themes were made a part of subsequent interviews. Iterative analysis following tenets of grounded theory identified themes and their inter-relationships. Thematic analysis was undertaken, and final results explained in tables and percentages. The interview guide is attached at the end of the article as appendix I.

Study design and questionnaire were evaluated and approved by the Institutional Ethical Review Committee Board of Shalamar Institute of Health Sciences, Lahore, Punjab (reference number SMDC-IRB/OL/025-2019). The entire study was conducted in accordance with the Declaration of Helsinki. Informed consent was obtained from each patient to access their medical records along with authorization to use personal/genomic data for publication.

RESULTS

Study Characteristics: A total of fifty women were contacted out of which 24 fulfilled our inclusion criteria, leading to a sample size of twenty-four. Out of these twenty-four, four had passed away due to severity of their disease, another four did not agree to become a part of our study and sixteen women consented. All sixteen women were aged >40 years and were married. Several barriers to early presentation and diagnosis of Breast Cancer were reported and identified. Table 1 shows the summary of barriers to late presentation of Breast Cancer reported in this study including respondents' personal reasons and perceptions for late presentation or diagnosis of Breast Cancer. Supplementary material includes Table 2 and Table 3

containing themes and subthemes formed respectively. Transcription of 16 interviews is also included.

Lack of knowledge about cancer: Out of the 16 participants, 10 were seen to lack knowledge about the cancer in general, its types, treatments, signs, symptoms and risk factors. 2 of them claimed to have never heard its name before. Most of these women did not have enough information even after contracting the disease themselves. The rest of the women had a fair idea that cancer was a fatal disease and that its treatment constituted of getting operated upon.
"I had never heard the name of the cancer till it happened to me. I never believed it could be something so serious."

Lack of knowledge about breast cancer: When specifically asked about breast cancer, 7 of the participants lacked proper information about the disease while the other 8 had some idea about it because of previously diagnosed cases in their families and relatives. *"As I said, I didn't know anything until I became its prey. By the way I've heard that women who don't breastfeed their children and who keep their phones near their chests are at increased risk (to develop cancer of breast)"*
Since this section included open ended questions, women went on to say, *"In my opinion, it (breast) is a relatively safe area for a cancer to occur as the whole of the breast can be removed without significantly affecting on one's life".* In addition, whatever little information they learned of was from their own experiences as well. *"All I know about breast cancer is from my own experience. Otherwise, I had no prior knowledge about it."*

Lack of awareness about self-breast examination: Only 2 of the participants knew what self-breast examination was, while the rest had no information about it. While one said, *"I don't know how to self-examine the breast. But I want to learn and also want my daughters to learn it."* Another stated, *"I am not aware of any of the methods used to know about cancer before its manifestations. I wish there was a way of knowing this earlier. I wouldn't have gone through so much pain."*
In contrast to these statements, the rest of our participants had different answers. While one responded, *"I don't have any idea about methods used to make early diagnosis of cancer"*, second participant said, *"I never paid any attention to such processes. I don't know what breast examination is about"*, interestingly so she went on and completed her answer by saying, *"I don't think so my doctor told me about any self-examination".*

Lack of awareness about screening: Thirteen of the participants, when asked about screening, were not aware of the screening methods available. Most of the women had not even heard the name of "screening" before. *"Screening? I don't know. I underwent many tests like bone scan etc. I don't know exactly if these are the screening methods you are asking about."* Our participants even lacked basic information being showcased through our mass media awareness campaigns as majority of them were unaware of what pink ribbon was or what the annual breast cancer awareness day was. *"I have seen Pink ribbon at various places but I don't know what it is".* The most known screening method owing to their own experiences was "mammography" and "biopsy". One stated, *"There are some tests which are performed annually to identify the disease before appearance of the symptoms, I know about mammography."* Another responded, *"...I got FNAC done, I was told my treatment would be decided on its basis*"

Culture and religion as barrier: Culture and religion proved to be a barrier for 3 of our participants only. One of our subjects claimed that she visited a spiritual healer before going to a doctor. She explained, *"I went to a spiritual healer, he did Dum (Bless with the word of God) on me. My pain got better and the swelling (in my breast) changed its size (decreased)."* The remaining 13 women had strong religious values but it did not prove to be a hindrance in early presentation. These women believed that this disease was given by God and God alone would provide cure for it.

"I am a Muslim. Every disease has a cure and the cure lies in the Quran. Other than that, seeking a lot of forgiveness if you think you have wronged yourself and be patient and persevering in facing this trial can help you battle this disease. In Islam there is no halal or haram thing when it comes to saving life".

Economic issues as a barrier: Even though almost everyone agreed upon the fact that financial conditions affect visiting doctors in countries like Pakistan, only 2 of our participants were unable to present early due to this specific issue. Representative statements are as follows, *"Postoperative treatment like chemotherapy and Herceptin injections is really expensive. Poor people can't afford this and this leads to poor compliance with treatment procedures"* and *"There was a neighbor of ours who died from not affording the treatment expenses. But Alhamdulillah (praise be to God) I didn't face this (financial) problem".*

One of the subjects thought, *"Many of our government hospitals are providing treatments that are affordable for the poor as well"*. Another added, *"I think it (money) plays a positive role in early presentation but my case was different".*

Educational status as a barrier: In 20.8% of the women, educational status was linked to their delayed presentation. Majority of the women had studied till secondary school only and did not perceive their education to have played a role in this regard.
"No. Even if I was educated, I would have only gone to the doctor if I had discomfort (in my breast) like this time."
While some were of the opinion that *"It (education) plays a pivotal role"*, 4 of the participants stated in similar wordings, *"I don't think education has a role in early presentation as*

everybody should be wise enough to know about importance of self-care". Education was perceived as largely unrelated to presenting late.

Lack of facilities as a barrier: 3 women presented late due to lack of availability of diagnostic and treatment facilities. In their opinion, hospitals were not well equipped to treat suffering patients. The other 13 did not face any difficulty in this regard.
"They (facilities) have been improved to some extent now. But 2 years back, when I was undergoing treatment, the hospitals were in much worse condition. But still there are a lot of things to improve especially in public sector hospitals."
"I think the facilities are satisfactory. The responsibility lies on the shoulders of both the doctors to make a correct and timely diagnosis and the patients to stop taking their symptoms for granted."

Lack of human expertise as a barrier: According to 4 women, it was lack of human expertise that led to their delayed presentation. The perception of lack of human expertise resulted from misdiagnosis from a doctor that led to eventual delay in presentation. *"I don't know what to say about this? The first doctor to whom I went misdiagnosed me but it didn't end here. My symptoms were getting aggressive by each passing day..."*

The other 12 were relatively satisfied with their treatment. All of them commended the abilities of their surgeons and clinic staff. *"They treated me very well. They were quick in diagnosing my condition correctly and provided me with good treatment."*

Ashamed of being examined by a male doctor: Seven women stated that the scarcity of female surgeons was somewhat responsible for delayed presentation. They described the experience with male doctors to be uncomfortable and awkward.
"The biggest problem of our health setup is that lady doctors are very few. It is a source of huge embarrassment to expose ourselves in front of male doctors." The rest were unclear if they thought this was a barrier as they said, *"it was a matter of life and death...",* an absolute necessity so they didn't let shame come in their way. One respondent, however, reported that "*In general, female doctors are majorly gynecologists and less are surgeons. Male surgeons are more common so it doesn't leave us with many options anyway."*

Insufficiency on media's behalf: 37.5% women believed that the media is not doing enough to educate women about this disease. 16.66% seemed to be satisfied with the efforts of the media in this regard. Their main concerns were collectively targeted towards broadcast media; that it should showcase more programs about breast cancer. The others refrained from giving any statement since they did not have access to social media and television.

"No there are not enough programs running on the media to educate women about it. And if there are any, they do not discuss it openly."

"Media is not projecting this issue effectively. How I know that something like breast cancer exists is by being able to see people suffering from this disease around me. I haven't seen any information in newspapers or TV."

Lack of family support/social pressure: Lack of family support was not seen to be a major factor in delayed presentation: only 1 woman faced this problem.
"It is important for families to support their women in these times and my family especially husband did whatever he could for my treatment."

Fifteen of our participants received full emotional and social support from their family members including their husbands who were termed as major support systems. One of them added, *"I have an extended family but nobody changed their attitude towards me. They were supportive throughout. However, in most of the cases, it is the joint family system which makes things difficult for women. There is a continuous pressure, more responsibilities and more financial issues to deal with."*

Failure on doctors' part in effectively educating patients: According to a few of our participants, their doctors did not provide them with enough information about their disease. This was a common answer when asked about screening methods and about Breast Self-examination. One participant said, *"I don't think so my doctor told me about any self-examination."* On the other hand, 13 subjects were of similar views that, *"Whatever information I have, I got this from my doctor".*

Lack of information transference by the patients: Three of our participants believed that it was the lack of transference of knowledge and sharing of experience by the patients, which contributed to late presentation. It was believed that the information coming from the patient herself is easier to believe and act upon.

"I think the patients should also educate the other women and share their experiences. As the information coming from the patients themselves is more accurate and acceptable by the society." When asked if they transferred their information to others in order to overcome the barrier that they felt, a respondent claimed that after she had shared details of her diagnosis and ongoing treatment with her cousin, it resulted in latter getting diagnosed with breast cancer as well. (line 1877, participant XVI)

Perceiving early diagnosis unimportant:
According to 4 participants, early diagnosis had nothing to do with prognosis: early or late presentation did not make

any difference in their view. Some of them attributed this to God giving this disease when He wills. *"Allah gives everything and only he has the power to take away anything".* Twelve women believed it to be an important factor in determining the survival of the patient.
"Yes, the earlier we know, the better it is. The delay in diagnosis is associated with decreased survival chances as the disease is untreatable at late stages"

Lack of facilities in smaller cities: 3 participants believed that there were disparities between the health care facilities in smaller and larger cities. People living in smaller cities do not have access to latest diagnostic techniques and the doctors are not as competent as those in big cities. Consequently, they may have to travel to bigger cities or suffer at hands of ill-equipped hospitals.
"There is an extreme mismanagement in hospital settings and lack of facilities especially in smaller cities. I am from Sahiwal and the hospitals there are really small. I think we should open more breast clinics and make treatment for breast cancer more accessible for all the people"

Ignorant attitude of patient towards their disease: Eight participants agreed that their ignorant attitude towards their symptoms became responsible for their delay. Deliberately ignoring the symptoms when they occur proved to be the main reason behind their delayed diagnosis. *"I think had I not ignored it, and just gone to the doctor when I first noticed it, my diagnosis would've been made on time. I regret ignoring it"* She goes on: *"I told my husband but we ignored initially as we got scared and many superstitions crossed our minds and we kept on thinking what we should do about it. But actually, did nothing"*

Prioritizing spiritual healers over doctors: In Pakistan, the concept of spiritual healing is prevalent. Out of 16, 4 participants preferred going first to spiritual healers instead of seeking medical help consequently presenting to medical centers late. Majority were of the view,
"I believe doctors should be trusted as they are extremely competent, they spend years studying and then become someone who can serve humanity. They know what they are doing"
The rest even though did not visit any spiritual healer, they did believe in, *"... getting better by reciting Quranic Verses."*

Fear of death: According to one participant, fear of death also withholds women to seek medical attention. They do not want to face reality and decide it is better to stay silent.

DISCUSSION

Early stage of diagnosis is a key determining factor for survival of breast cancer patients, and delays in diagnosis and advanced stage of presentation are associated with poor clinical outcomes [16,17].

This study provides critical insights into why women delay in seeking care for breast cancer symptoms; the most important and recognized ones being a lump in breasts, discharge from the nipple, pain/soreness, skin puckering or dimpling; and a change in breast shape[18].

Apart from confirming themes that have been elucidated via preceding researches, this study provides clarification and an in-depth explanation for the role played by lack of knowledge, religious beliefs and monetary limitations that contribute to delayed breast cancer presentation. Our results show that lack of awareness and lack of education are key factors contributing to late presentation for breast cancer patients. Several capacity issues of health-care providers were also identified.

A major patient related-barrier to seeking early medical care was lack of knowledge which lead to patients attributing different meanings and superstitions to their symptoms and were, therefore, unable to recognize these symptoms as something serious. This ignorance caused women to present at advanced stages (III and IV) of their disease in countries like Pakistan [8]. This is consistent with findings from an Ethiopian study that revealed how patients let the symptoms take their natural course without seeking early medical care[19], which is in sharp contrast to the international literature from first world countries where only 10% or fewer women had a metastatic stage (i.e. stage IV) of breast cancer at presentation[20]. Cultural barriers caused married women to have less access to caregivers and poor orientation towards attending targeted health units alone because they were dependent on their husbands or heads of the family[21]. All of the participants in this study were married and, hence, relied on family support. All study participants stated that they had complete support from their families and did not perceive this as a barrier. They, however, did believe the scenario would be different had this support not been present. This is consistent with a South African study reporting that 20.7% of their study population needed permission from spouses in seeking healthcare[22]. As is commonly reported in many cultures, married women often have domestic responsibilities[23]. Likewise, the responsibilities of women in African culture make health a low priority and prevents them from seeking healthcare and/or attending educational forums[22].

Majority of patients described their reluctance to get examined by male doctors. They shared this perception in consistence with African studies that explain how it was not culturally acceptable for women to show their breast(s) to another male except the husband[19]. 2/3rd of our participants explained the need to have more female doctors so that patients could be comfortable with the diagnostic and treatment process.

Themes		Total =24	%	Representative statements
Lack of knowledge about cancer as a barrier	Yes	10	41.66	"I had never heard the name of the cancer till it happened to me. I never believed it could be something so serious."
	No	6	25	"Cancer cells are healthy cells of our body which instead of dying start invading other cells of the body and disrupt their function."
	Unclear	0	0	
Subtheme: 1. Perceiving education irrelevant				"I don't think education has a role in early presentation of breast cancer. Everybody should be wise enough to know about the importance of self-care."
Lack of knowledge about breast cancer as a barrier	Yes	7	29.16	"As I told, I didn't know anything until I became its prey. By the way I've heard that women who don't breastfeed their children and who keep their phones near their chests are at increased risk"
	No	8	33.33	"I only know about one type of cancer and that is breast cancer. I know it's a disease of the cells of our body but I don't know about the details."
	Unclear	1	4.16	"I have heard that the women who don't breastfeed their child or keep their mobiles near their chest are at increased risk of this cancer."
Subthemes: 1. Insufficiency on media's behalf 2. Perceiving early diagnosis unimportant				"No, there are not enough programs running on the media to educate women about it. And if there are any, they do not discuss it openly." "No, there is no importance of knowing about it earlier. it is given by Allah and taken away by Allah. When he wants, he makes the person aware of it"
Lack of awareness about self-breast examination as a barrier	Yes	4	16.66	"I am not aware of any of the methods used to know about cancer before its manifestations. I wish there was a way of knowing this earlier. I wouldn't have gone through so much pain."
	No	2	8.33	"We should examine our breasts regularly. We should never ignore any pain, redness, feeling of lump and nipple changes as these are one of the signs of cancer."
	Unclear	0	0	
Subthemes: 1. Failure on doctors' part in effectively educating patients 2. Lack of interest of patients to know about their disease 3. Lack of information transference by the patients				"I don't think so my doctor told me about any self-examination." "I am an uneducated woman. This is related to your field. How can I know about it?" "I think the patients should also educate the other women and share their experiences. As the information coming from the patients themselves is more accurate and acceptable by the society."
Lack of awareness about screening as a barrier	Yes	13	54.16	"Screening? I don't know. I underwent many tests like bone scan etc. I don't know exactly if these are the screening methods you are asking about."
	No	3	12.5	"There are some tests which are performed annually to identify the disease before the appearance of the symptoms. I know about Mammography"
	Unclear	0	0	
Culture and religion as a barrier	Yes	3	12.5	"I went to a spiritual healer. What did he do? He did "Dum" on me (recited Holy Quran and blessed me. my pain got better and the swelling changed its size."
	No	12	50	"I am a Muslim and I think Allah wants us to take care of ourselves and let the doctors do their job"
	Unclear	1	4.16	"I didn't go to the Hakeem or spiritual healers but I did get "dum" (blessed by the verses of Quran). Why? Because I wanted to get satisfied that I had tried every avenue to get cured, I had to be sure"

Subthemes: 1. Prioritizing spiritual healers over doctors 2. Lack of social support/ family pressure 3. Reluctant to share with families 4. Ignorant attitude of patients as a barrier				"I went to the spiritual healers for at least six months. I used to feel fatigued and tired. I began to experience bloody discharge from my lump." "It is important for families to support their women in these times and my family especially husband did whatever he could for my treatment." "I think had I not ignored it, and just gone to the doctor when I first noticed it, my diagnosis 4) would've been made on time. I regret ignoring it"
Economic issues as a barrier	Yes	2	8.33	"Yes, money is really important. Money is life and death basically. Even though I have doctors in my family and I got treatment through a reference, this is a big factor in people like me presenting late."
	No	14	58.33	"There was a neighbor of ours who died for not affording the treatment expenses. But Alhamdulillah I didn't face this problem".
	Unclear	0	0	
Educational status as a barrier	Yes	5	20.83	"No. Even if I was educated, I would have only gone to the doctor if I had discomfort like this time."
	No	11	45.83	"I have studied till 8th standard. No, because as soon as I realized the problem, I knew I should consult a doctor which I did."
	Unclear	0	0	
Lack of facilities as a barrier	Yes	3	12.5	"They have been improved to some extent now. But 2 years back, when I was undergoing treatment, the hospitals were in much worse condition. But still there are a lot of things to improve especially in public sector hospitals."
	No	13	54.16	"I think the facilities are satisfactory. The responsibility lies on the shoulder of both the doctors to make a correct and timely diagnosis and the patients to stop taking for granted their symptoms."
	Unclear	0	0	
Subtheme: 1. Ashamed of being examined by a male doctor 2. Lack of facilities in smaller cities				"The biggest problem of our health setup is that lady doctors are very few. It is a source of huge embarrassment to expose ourselves in front of male doctors." "There is an extreme mismanagement in hospital settings and lack of facilities especially in smaller cities. I am from Sahiwal and the hospitals there are really small. I think we should open more breast clinics and make treatment for breast cancer more accessible for all the people"
Lack of resources and human expertise as a barrier	Yes	4	16.66	"I don't know what to say about this? The first doctor to whom I went misdiagnosed me but it didn't end here. My symptoms were getting aggressive by each passing day and I was being referred from one doctor to the other. Some claiming it to be an infection other arguing it to be a tumor."
	No	12	50	"They treated me very well. They were quick in diagnosing my condition correctly and provided me with the good treatment."
	Unclear	0	0	

Table 1: Summary of Qualitative Findings.

They reiterated feeling ashamed while getting examined by male doctors as the breasts are still viewed within similar cultural settings as symbols of womanhood, nurturing, and sexuality [24,25]. A large study from a representative sample of general practitioners in Manchester similarly reported that women doctors saw more women patients than men doctors for cervical smears, contraception, and breast disorders[26].

In a study conducted by Mitchel et al in North Carolina, United States of America, it was stated that a fraction of women believed medical treatment was unnecessary because only God could cure breast cancer[27]. Findings from our study suggest matching results as subjects outlined experiences where they preferred getting blessed by the word of God which in local language is known as "Dum" along with getting cured by spiritual healers. Padela et al's

investigation asserted that American Muslims with higher degrees of religiosity were less likely to have had a mammogram in the past 2 years[28].

Participants stated their diseases were adversaries sent by God and they could be treated only if God willed. A study in India revealed similar beliefs that cancer is caused by God's curse[29]. Thus, reliance on non-medical treatment is a significant barrier to early medical care. This is supported by claims that throughout Muslim history, Greco-Arab and Islamic herbal medicine were the first choice of treatment for ailments involving many other diseases as well as cancer[30].

Findings from several studies determined that women were reluctant to check their own breasts[31] and feel embarrassed when discussing breast-health concerns with others[32]. At a time when Breast self-examination (BSE) is the simplest and easiest mode to check one's self on monthly basis [8], lack of awareness regarding self-examination and screening methods proved to be one of the most important barriers since majority of our respondents did not know about BSE, screening methods or about breast cancer awareness days; if women were unaware of how their breasts normally functioned, they would consequently only detect changes when disease has relatively progressed.

In most studies, it is reported that most women received Breast Cancer information mainly from television (31%), clinics (31%), and health professionals (21%)[22]. This even though matches our results where majority women reported getting any/all information they had from hospitals and doctors, is discordant with our study stating there is insufficient coverage of breast cancer in Media, both broadcast and print. This laments the need for widespread media campaigns to help in spreading breast cancer awareness. A paper published about Breast Cancer in limited resource countries stated that the need for awareness programs in relation to early preventive strategies is obvious[33].

The work of Schneider along with many other studies demonstrates clearly the coexistence of socioeconomic factors' impact on cancer staging and outcomes[34]. While some studies showed participants with higher educational attainment were more knowledgeable about breast cancer issues than those with lower education attainment[35]. Others explained the large economic impact of breast cancer in lower and middle income countries presenting a financial burden making limited household income and health-care costs contributing factors to the delay in seeking help[36]. This is demonstrated by our results as well. Individual patients and households face significant out-of-pocket costs when seeking treatment in private setups as breast cancer or other health concerns are not considered a political priority.

Furthermore, lack of facilities in smaller cities which is additionally reported as a barrier in our study causing patients to travel to bigger cities to get better medical treatment causing further delay. Therefore, it was observed that people living in third world countries often had limited healthcare infrastructure to provide adequate care and treatment for diseases including breast cancer[37]. The survival rates of BC are higher in countries like UK covering treatment costs [37]etc.

This leads to the observation that governments should focus on improving literacy and providing screening programs which will only prove to be cost-effective since early identification of disease is primarily treatable with a single treatment modality instead of a combined surgical and oncological treatment process. This will significantly lower any disease burden in Pakistan, especially that of Breast Cancer.

Among all the premenopausal and postmenopausal patients, the moderately dense category C mammographic density was observed in 70 (46.1%) patients, followed by high density category D mammographic density in 60 patients (39.5%). Similarly, minimal BPE was seen in 70 (46.1%) patients as depicted in table 2. The categories of MD were divided in low (category A and category B) and high (category C and D). The BPE categories were also divided into high (moderate and marked) and low grade (minimal and mild).

Limitations Our findings should be interpreted in light of the fact that the qualitative methodology has some limitations. The present study had a small sample size compared to the large number of breast cancer patients in the Pakistani population, and was limited to breast cancer patients who visited Shalamar hospital in Lahore. Therefore, there may have been a bias in the data related to the regional and socio-economic background characteristics of the patients. In addition to this, the study setting was greatly disturbed due to the Covid-19 pandemic. Interviews had to be conducted over telephone to observe social distancing and consequently were affected a great deal due to connectivity issues. Therefore, similar studies must be conducted in other hospitals in Pakistan to find out the key reasons for delayed presentation.

On the other hand, our research has several strengths. In person, one-on-one in-depth interviews in local language with a female interviewer were conducted. Anonymity was also maintained which facilitated an open and candid discussion. Additionally, we used several recommended strategies to ensure reliability, including audio taping of all twenty-four of the interviews and independent development of a coding scheme.

CONCLUSION

A significant percentage of women with breast cancer in Pakistan delay presentation primarily because of lack of awareness about the disease and its management. Along with the need to be examined by female doctors only, failure

to understand breast cancer symptoms and ignoring them are both identified as significant risk factors for delayed presentation. Cultural traditions and religious beliefs play an important role in women's Breast cancer perceptions and ultimately treatment. Understanding the benefits of early detection and presentation of Breast cancer among women was poor overall. Coordinated efforts are hence needed from the public health department regarding awareness about breast cancer and its therapeutic outcomes, to educate the women and remove the barriers identified. This study can serve as a guide for further surveys to help formulate an effective media campaign countering identified barriers in favor of mass screening programs and raising awareness among breast cancer patients to present early in clinics to help reduce the disease burden in Pakistan.

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Appendix I

Interview Guide

The patient interviews would explore at least following themes which have been previously identified in the literature. The patient's medical record would also be used to retrieve pertinent data for the research.

Category	Theme	Subtheme	Possible Questions
Delay in Presentation	Lack of Knowledge	Knowledge about Cancer	• What do you know about cancer? • What is your opinion about the cancer treatments? • Do you think cancer is a treatable condition, if so why?
		Knowledge about Breast Cancer	• What do you know about breast cancer? • How do you find about it? • What do you know about breast cancer treatment? • Is there any importance of knowing about the breast cancer early? If so what? • Is TV, Cable or social media effectively projecting this issue? Give your opinion.
		Lack of Awareness about Breast Self Examination	• Do you know any method to know about the breast cancer early? • Do you have any idea about the Breast Self Examination?
		Lack of awareness about Breast Screening	• What do you know about the breast screening? • What screening methods do you know of? • Are you aware about Pink Ribbon? • Are you aware of the annual breast cancer day?
	Working with Symptoms		• When did you first notice anything different in your breast? • What did you do about it? • Did you feel ashamed to talk somebody about it? • When did you seek any medical attention?
	Socioeconomic Issues	Cultural & Religious Issues	• What do people and friends think about breast cancer in your house? • What religion do you belong and what are the religious directions about such a disease? • How would your mother or aunt proceed if she

			had breast cancer? • What is your attitude about it? • Did you go to some spiritual healer or herbal healer? • Did it work?
		Economic Issues	• Do you think your financial condition is linked to this delay in coming to the doctor? • Would you have been come early to the breast clinic had you been financially better?
		Educational Status	• How educated you are? • Had you been further educated, would have you sought help to the doctor early? • Do you think your education matters in terms of your attitude towards the breast cancer treatment?
Delay in Diagnosis	Lack of Resources	Lack of Facilities	• Do you feel our community has adequate facilities for dealing with breast cancer? Please elaborate.
		Lack of Human Resources & Expertise	• Were the doctors competent enough to diagnose your breast problem timely? • If yes how? If not why not? • Is out breast clinic staff well trained?
			• How could have your delayed diagnosis may have been prevented? Give you opinion.