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Perceived Barriers to Cervical Cancer Screening Using Pap Smear Test among Women Attending Saad Abu Al Ella Hospital in Khartoum State, 2022

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Abstract

Background: Cervical cancer is the second common cancer among women worldwide. It is a preventable cancer, and early detection of precancerous conditions through the Papanicolaou cytology screening (Pap smear) is a key aspect of prevention; it is accepted worldwide as an efficient tool for secondary prevention. While the PS test is simple, inexpensive, and relatively reliable as a method of diagnosing cervical cancer, most women do not take the test. Therefore, this study is sought to describe the barriers to pap smear uptake among Sudanese women. **Materials and Method:** This total coverage observational, analytical and cross sectional, hospital-based study was conducted in Saad Abu El Ella Hospital in April 2022. The study was conducted using an anonymous questionnaire to assess the perceived barriers of 93 participants. All data were computerized using Microsoft Excel'17 and the data were described and analyzed using statistical package for social science (SPSS23). **Results:** The findings revealed that the mean age of the participants was 39.5 years and only 3.2% had ever undergone a pap smear test. Identified barriers were lack of information, not knowing where to go, and fear of pain. The majority, 72% are willing to routinely perform a pap smear test if well informed about it. The study also demonstrates that there is a significant correlation between perceived barriers score and willingness to perform the pap smear test (p value = 0.008), and between the perceived barriers score and the sociodemographic factors: Age (p value = 0.006), educational level (p value = 0.028) and occupation (p value = 0.040), but no association with the econom-

ic status was found (p value = 0.378). **Conclusion:** The detection rate is too low compared to the national target of over 70%. Therefore, more work is needed to reduce perceived barriers to cervical cancer screening by providing education/raising for popular awareness; addressing misconceptions and false beliefs; informing women about the necessity and importance of Pap smear; and health promotion using mass media such as national television, social media, radio, billboards, and newspapers and other print media.

Keywords

Perceived Barriers, Cervical Cancer Screening, HPV, Cervical Cancer, Pap Smear, Sudan

1. Introduction

1.1. Background

Cervical cancer (CC) is the second most common cancer among women, resulting in 300,000 deaths globally in 2012; the majority of which at 86% occur in low- and middle-income countries, including Sudan [1]. In Sudan, invasive cervical cancers are a leading cause of cancer death among women [2].

The disease has a pre-malignant stage, usually under the age of 40. The known factors include viral infections (HPV, HIV, and HSV), multi-parity, early initiation of sexual activity, multiple sex partners, smoking, low socioeconomic status, diet low in antioxidants, poor hygiene, long term use of oral contraceptives and immune suppression conditions [1]. Human papilloma virus (HPV) strains 16 and 18 are the most common risk factors for cervical cancer and incidence of this rises after the age of 30 and peaks between the ages of 65 and 69 [3], and remains asymptomatic till late stage when it presents as vaginal bleeding, invasion, metastasis, and poor prognosis

CC can be prevented by vaccination of teenage girls aged 9 to 13 years against HPV infection, and by screening tests like Papanicolaou (Pap) smear and visual inspection by acetic acid (VIA) [4]. Currently, Gardasil 17 and Cervarix are approved vaccines for primary prevention of CC and both seem to protect against HPV 6/11/16/18 and the HPV 16/18.

CC is a preventable disease, and a key aspect of prevention is early detection of precancerous conditions through the Papanicolaou cytology screening (Pap smear), it is accepted worldwide as an efficient tool for secondary prevention. Pap smears effectively reduce the incidence of cervical cancer by 75% - 90% [1]. The United States Preventive Services Task Force (USPSTF) recommends cervical cancer screening in women aged 21 to 65 years with Pap smear every 3 years, or for women aged 30 to 65 years with a combination of Pap smear and HPV testing every 5 years.

Despite the fact that the PS test is a simple, inexpensive, and relatively reliable method of diagnosing cervical cancer, most women do not have it performed.

According to some qualitative studies, there are several barriers for Pap smear screening due to factors like lack of awareness, inappropriate beliefs, the fear of being diagnosed with cervical cancer, fear of pain. Therefore, there is need to develop and implement culturally and linguistically appropriate Pap testing programs for less educated Sudanese women [2].

1.2. Objectives

To determine the perceived barriers of cervical cancer screening by PS test.

2. Materials and Methods

2.1. Study Design

This study was total coverage observational analytical, cross sectional, hospital-based study.

2.2. Study Area

The study was conducted in Saad Abu El Ella teaching hospital which is a public hospital affiliated with Khartoum University.

2.3. Study Population

Inclusion criteria: all sexually active women, aged over 21, who attended the outpatient clinic during the study period. Exclusion criteria: Women who were non-Sudanese, not married, had a hysterectomy, younger than 21 years or refused to participate.

2.4. Sample Size

The study was total coverage for those attended with clinic and within the designed inclusion criyeria. 93 participants who fulfilled the inclusion criteria were selected from the outpatient clinic during days of data collection.

2.5. Data Collection

Data was collected between April and June 2022 using an anonymous questionnaire developed from a similar study population from literature review from others international references. The questionnaire was designed with consultation of biostatistician and the authors. All data was computerized using Microsoft Excel'17 and the data was described and analyzed using statistical package for social science (SPSS23).

3. Results

Summarizes the demographic characteristics of the participants (**Table 1**).

The findings revealed that the mean age of the participants was 39.5 years and only 3.2% had ever undergone a pap smear test. The majority, 72% had attained at least secondary education', meaning 72% of the participants had an education level of secondary school or higher, as shown in **Table 1** that participants with

Table 1. Sociodemographic characteristics of participants.

Characteristics	Frequency (n = 119)	Percent (%)
Age (years)	Mean = 34.4, SD ± 7.0	
25 - 30	47	39.5
31 - 40	50	42.0
40 - 49	22	18.5
Marital status		
Married	93	78.1
Not married	26	21.9
Education level		
None	6	5.0
Primary	58	48.7
Secondary	51	42.9
Tertiary/university	4	3.4
Occupation		
Business	22	18.5
House wife	16	13.4
Others (health worker and teacher)	12	10.1

primary school education level consisted 28% of all the participants, meaning that the remaining 72% had an education level of secondary school at least or more (secondary school 36.6% + university 32.3% + postgraduate 3.2%). The study also demonstrates that there is a significant correlation between perceived barriers score and willingness to perform the pap smear test (p value = 0.008), and between the perceived barriers score and the sociodemographic factors: Age (p value = 0.006), Educational level (p value = 0.028) and occupation (p value = 0.040), but no association with the economic status was found (p value = 0.378).

49.5% (46/93) were of low economic status, 45.2 (34/93) were of moderate economic status, 79.6% of the participants were unemployed, 66.7% did not have health insurance.

The Identified barriers were Lack of information, not knowing where to go, and fear of pain.

Only 7.5% had known that cervical cancer was caused by HPV. Likewise, 2.2% knew about the existence of the HPV vaccine.

CC screening status was 3.2% which is in line with the results of similar studies conducted on this topic in Sudan. The barrier with the greatest magnitude was "lack of information", accounting for 97.8.

Another barrier was the assumption of pain due to lack of information about pap smear and 77.4% of the participants not knowing where to go for the test.

77.2% of the participants were willing to performing the pap smear test.

The association between perceived barriers score and educational level (p value = 0.028).

4. Discussion

The findings revealed that the cervical cancer screening status of the participants was found to be very low (3.2%) which is in line with the results of a similar study on knowledge attitude and practice of cervical cancer towards cervical cancer and its screening tests conducted by Mohamed AO *et al.* [5], showed that the uptake rate was 2.3% which is quite close to the rate of practice in this study. The minority (7.5%) had known that cervical cancer was caused by HPV. Likewise, only 2.2% of the participants knew about the existence of the HPV vaccine [5]. The Participants reported low awareness of HPV and cervical cancer screening in the community. The barrier with the greatest magnitude was "lack of information", approximately all of the respondents (97.8%) have reported that it was a barrier. This finding agrees with the findings of other studies where Marshi *et al.* [3], another barrier found was the assumption that pap smear is painful. The results are also similar to the findings from a systemic review on barriers and facilitators of CCS among women in Uganda [6]. Other barriers were assessed and most of their ratings were below 3.0. That is most participants either disagreed or strongly disagreed to the following statements: cervical cancer screening is embarrassing. The study also demonstrates that there is a correlation between perceived barriers score and willingness to perform the pap smear test, that is, 77.2% of the participants with low perceived barriers score (low scores represent high perception), are willing to performing the pap smear test. This finding partly agrees with several studies conducted in developing countries. Our study found that there was a significant association between perceived barriers score and the socio-demographic characteristics of the participants. This contrasts with Driscoll *et al.* [7].

5. Conclusions

In conclusion, 93 participants, attending the outpatient clinic of Saad Abu Al Ella Teaching Hospital were interviewed. The results revealed that rate of participation of cervical cancer screening among them was 3.2% which is still far too low compared to the national target of greater than 70%.

Identified barriers were: lack of information, not knowing where to go, and fear of pain.

The barrier with the greatest magnitude was lack of information. Most women did not specially point out perceived barriers such as embarrassment, other people, negative attitudes, partner resisting pap smear, lack of female screeners in health faculties, lack of convenient clinic time, attitudes of health workers, high cost of the test and fear of a bad result were barriers to seeking cervical cancer screening. Another finding was the association between perceived barriers score and willingness to getting screened, and between the perceived bar-

riers score and sociodemographic factors except economic status. For conditions such as this, health promotion is the key to tackling it.

6. Recommendations

There is little attention to education and health promotion in the study population. Therefore, more work needs to be done aimed at increasing the awareness of cervical cancer screening:

1) It was beyond the scope of this study to explore the underlying socio-cultural barriers, so further qualitative studies are recommended to explore these barriers in Sudan.

2) Suggesting policy makers to design intervention programs using appropriate models to increase awareness, testing and self-efficacy of individuals through new policy for implementing the program.

3) Implementing invitation programs for women who are overdue to increase attendance for screening through methods like: reminder texts/letters, or telephoning women directly.

4) Provision of education/information, addressing misconception and beliefs through community-based educational campaigns disseminating language appropriate and culturally sensitive educational information that could reach high risk women and increase their knowledge of cervical cancer and its screening.

5) Health promotion using Mass media (using television, social media, radio, billboards, and newspapers, posters in waiting rooms, and other print media, to promote screening is recommended.

7. Study Limitations

This was an institution-based study so its generalizability to the general population is limited. Moreover, the time frame of the study did not allow for more participants to be included. In addition to that, the country's political status, made it difficult for women to attend hospitals on protest days due to streets closures, the crowding of streets and time constrains of the participants. Therefore, data had to be collected only in days which were no protests and no street closures. Another limitation encountered was skepticism of people towards answering the questionnaire and the topic itself seemed to scare them due to the word "cancer". So, not all women accepted to participate in the study.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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