Ovarian Cancer Symptom Awareness and Its Response among Female Health Workers

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Authors' contributions

This work was carried out in collaboration between all authors. Author AFA designed the study, wrote the protocol, and wrote the first draft of the manuscript. Author ASA managed the literature searches. All authors were involved at data collecttion. Author OAA analysed the result. Discussion was written by authors AFA and OAA. All authors read and approved the final manuscript.

Original Research Article

ABSTRACT

Objectives: To determine the level of awareness of ovarian cancer symptoms and help-seeking responses of female health workers.
Methods: Four hundred and fifty seven female health workers were randomly selected and made to complete a structured proforma adapted from the Ovarian Cancer Awareness Measure (Ovarian CAM), which is a site-specific version of the generic Cancer Awareness Measure. Questions were asked on level of awareness of ovarian cancer early symptoms, anticipated time and the barriers to help-seeking responses.
Results: Out of 457 clients, 211 (46.2%) were able to recall at least one warning symptom of ovarian cancer while 20 (4.4%) were able to recall more than 3 warning symptoms. On the other end, when presented with a list of warning symptoms of ovarian cancer, identification ranged from 33.7-72.0% for the symptoms. As high as 28.0% could not identify any of the listed warning

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symptoms though some of them are also well known symptoms of late stage of ovarian cancer as well. A range of 11.7 – 27.3% of those who have ever seen a cancer patient before will seek for immediate medical help for various ovarian cancer symptoms. Also, having experienced a form of cancer before showed no relationship with the identification of all the warning signs of ovarian cancer outlined (*P* value ranged from .15 to .93).

Conclusion: The level of awareness of ovarian cancer warning symptoms is very low among the female health workers, and there is a poor medical help seeking habit even among those that could identify those symptoms. Efforts at improving these factors are therefore recommended.

1. INTRODUCTION

Ovarian cancer is the fifth most common cancer among women, but the commonest cause of death among female gynaecological cancers with a lifetime risk of 1:72 [1]. Ovarian cancer is most prevalent in white women. In the U.S., there are 13.4 cases diagnosed yearly for every 100,000 white women, 11.3 cases per 100,000 Hispanic women, and 9.8 cases per 100,000 black or Asian women [1].

The five year survival rate of ovarian cancer is high, equivalent to that of cervical cancer, stage for stage [2]. However, most cases of the ovarian cancer present rather late. The overall 5-year survival rate for ovarian cancer is 43.7%, 90% for stage 1 and 20% for the 4th stage. The earlier the diagnosis of ovarian cancer is made, the better the chance of survival [2].

Ovarian cancer is no longer a silent killer [3,4]. Studies have shown that some symptoms are reported by most women with ovarian cancer for months prior to diagnosis. These symptoms when identified promptly, can aid early diagnosis, and thus, a better prognosis in such patients. These symptoms are: abdominal pressure, fullness or bloating, pelvic discomfort or pain, indigestion, gas or nausea, changes in bladder or bowel habits, such as constipation or a frequent need to urinate, loss of appetite or early satiety, increased abdominal girth or clothes fitting tighter around the waist, and a persistent lack of energy [3,4]. In ovarian cancer, symptoms tend to last longer and worsen over time. Atypical symptoms like pyrexia of unknown origin and anaemia have also been reported but very rare [5].

Goff et al. [6] found that symptoms were present in 90% of affected women, even in early stage disease. They developed a 'symptom index' (more than 12 episodes of at least one of the following symptoms: pelvic or abdominal pain, urinary urge or frequency, or difficulty in eating/early satiety present for less than a year). The combination of abdominal pain, pelvic pain, bloating, constipation and increased abdominal size were significantly more severe in women with ovarian cancer [6].

On the other hand, a more recent study suggested that symptoms analysis is more sensitive at detecting ovarian malignancies, but they are not as accurate as trans-vaginal screening [7]. Trans-vaginal screening (TVS) identified 73.3% of malignancies, compared to symptom analysis with a specificity of only 20% [8,9].

Most women who complain of these symptoms will not have ovarian cancer [10]. However, recognizing that the new onset or increased severity of these symptoms can represent ovarian cancer provide important diagnostic as well as therapeutic opportunities. Symptom analysis in combination with pelvic examination, trans-vaginal ultrasonography and serum tumour marker (± risk of malignancy index) can accurately predict ovarian cancer [7]. Meanwhile, researchers are working on developing better early-stage cancer detection through the use of contrast-enhanced ultrasound combined with blood tests that look for tumour biomarkers [8,9].

Type 1 and type 3 delays, as well as ineffective ovarian cancer screening strategy are responsible for the delay in diagnosis [11]. In addressing type 1 delay, there is a need to assess the level of ovarian cancer symptom awareness among the populace; such study among UK populace revealed a low level of awareness and poor help-seeking habits [12]. The present study was done among the health workers who are supposed to be better informed and can readily access medical help if sought.; these people are source of information to the general populace.

2. MATERIALS AND METHODS

This is a cross sectional descriptive study of level of awareness of ovarian cancer warning symptoms and help-seeking responses by the female health workers in Osun and Oyo States of Nigeria. Four hundred and fifty seven female health workers were randomly selected and made to complete a structured questionnaire adapted from the Ovarian Cancer Awareness Measure (Ovarian CAM) [13], which is a site-specific version of the generic Cancer Awareness Measure [14]. Questions were asked on level of awareness of ovarian cancer early symptoms, anticipated time and the barriers to help-seeking responses. The symptoms studied were abdominal pain, pelvic pain, extreme fatigue, back pain, changes in bowel habit, urinary frequency, abdominal swelling, weight loss, non-specific gastro-intestinal symptoms, and bloating, each symptom having persisted for four weeks. The questionnaire was divided into four sections – Demographic characteristics, ovarian cancer symptom awareness (recall of symptoms and identification of symptoms), barrier factors to help seeking and anticipated time to help seeking.

Research assistants were trained to help in data collection. Ethical approval was obtained from ethics committee of Ladoke Akintola University of Technology Teaching Hospital, Ogbomoso, and informed consent was obtained from the respondents. The study covered a period of six months, 1st September 2013 to 28th February, 2014.

Data management was done using SPSS version 17. Mean and standard deviation were used to summarize continuous variables while frequency and percentage were used for categorical variables. Categorical variables were compared with chi-square test and Fisher's exact tests as appropriate; while continuous variables were compared using the t-test. The level of statistical significance was set at $P \leq .05$.

The primary outcome variable is the ability to recall at least one ovarian cancer warning symptom, while the secondary outcome variables are the proportion of respondents that will seek help immediately a severe symptom is identified and the proportion without any form of barrier to seeking medical help.

3. RESULTS

The ages of respondents ranged between 20-62 years with a mean age of 34.19±7.99 years. Most respondents (80.9%) were within the age of 20 to 40 years with12% of respondents ≥ 45 years. Four hundred and eleven respondents (89.9%) had tertiary Education. With regards to cadre in health service, majority of the respondents were Nurses (240, 52.5%) and Doctors (74, 16.2%). The other socio-demographic details of the respondents are as shown in Table 1.

Table 1. Socio demographic data of respondents N=457

Variable	Frequency	Percentage (%)
Age group		
20 – 30	182	39.8
31 - 40	188	41.1
41 – 50	68	14.9
51 – 60	17	3.7
>60	2	0.4
Educational status		
Post-secondary/Tertiary	411	89.9
Secondary	35	7.7
Primary	7	1.5
None	4	0.9
Occupation		
Doctor	74	16.2
Nurse	240	52.5
Physiotherapist	5	1.1
Technologist	17	3.7
Health attendants	40	8.8

Table 1 continued in next page……

Community health	53	11.6
Extension workers	28	6.1
Others		
Car ownership	232	50.8
House ownership	200	43.8
Ever known a cancer patient	111	24.3
Ever experienced cancer before	9	2.0

Of the four hundred and fifty-seven women health worker studied, only 111 (24.3%) had ever seen a cancer patient before while only 9 (2.0%) had personally experienced cancer.

4. SYMPTOM AWARENESS

4.1 Recall of Symptoms

About 211 (46.2%) were able to recall at least one warning symptom of ovarian cancer while only 20 respondents (4.4%) were able to recall more than 3 warning symptoms. As high as 167 (36.5%) mentioned symptoms that are unrelated to early stage ovarian cancer which included sepsis, offensive odour per vaginam, breast lump or feeling something in the breast, painless vaginal bleeding, frequent vaginal discharge, fistula, inflammation, fever, headache, infertility, uncured wound, stomatitis, skin patches, post coital bleeding, malaria, asthenia, obesity, hair loss, sneezing, insomnia, external bleeding and abnormal growth in the cervix. About 45.3% of Community Health Extension Workers (CHEW) mentioned unrelated symptoms as warning symptoms of ovarian cancer while percentage within other cadres except physiotherapists were much lower. There was relatively small number of questionnaires retrieved from physiotherapists but 3 out of 5 of them (60%) mentioned unrelated symptoms as warning symptoms of ovarian cancer. Two hundred and forty six (53.8%) could not recall any early ovarian cancer symptom despite the fact that they are all health workers and most of them had post-secondary level of education (89.9%). Abdominal, 211 (46.2%) and pelvic, 211 (46.2%) pains were the most commonly recalled symptoms while extreme fatigue, back pain, changes in bowel habit and urinary frequency were not recalled at all. Only 84 (18.4%) of respondents were able to recall abdominal swelling as warning symptom of ovarian cancer, 64 (14.0%) recalledweight loss, 50 (10.9%) recalled non-specific gastro-intestinal symptoms and 20 (4.4%) recalled persistent bloating.

4.2 Identification of Symptoms

When presented with a list of warning symptoms of ovarian cancer, persistent pelvic pain was mostly identified (329, 72.0%), followed by persistent abdominal pain (320, 70.0%), while those less identified were passing more urine than usual, 154 (33.7%) and feeling full persistently (171, 37.4%). Worthy of note is the fact that a sizeable number of respondents (12.0 – 26.0%) affirmatively said 'No' to the recognized warning symptoms of ovarian cancer Table 2.

5. BARRIERS

The most endorsed barrier to seek medical help (responses of Yes often and yes sometimes) was 'worry about what Doctor may find' (284,62.2%) while the least endorsed was 'wasting Doctor's time' (82, 18.0%). Thirty-six, 7.9% of respondents anticipated no barrier to medical help seeking, that is, clients that answered no to all barriers listed on Table 3.

Table 2. Warning symptoms for ovarian cancer

Variable	Yes n (%)	No n (%)	Not sure n (%)
Persistent Pain in the abdomen	320 (70.0)	69 (15.1)	68 (14.9)
Persistent pain in pelvis	329 (72.0)	55 (12.0)	73 (16.0)
Persistent Bloating	220 (48.1)	90 (19.7)	147 (32.2)
Extreme Fatigue	287 (62.8)	71 (15.5)	99 (21.7)
Increased abdominal size	287 (62.8)	68 (14.9)	102 (22.3)
Back Pain	298 (65.2)	64 (14.0)	95 (20.8)
Changes in bowel habit	205 (44.9)	84 (18.4)	168 (36.8)
Passing more urine than usual	154 (33.7)	119 (26.0)	184 (40.3)
Feeling full Persistently	171 (37.4)	97 (21.2)	189 (41.4)
Difficulties eating on most days	189 (41.1)	99 (21.7)	169 (37.0)

6. ANTICIPATED TIME TO HELP-SEEKING

The anticipated time to seeking help when they have symptoms that they think might be serious was also assessed. Seeking immediate help for persistent abdominal (139, 30.4%) and pelvic (134, 29.3%), pains ranked the highest among other symptoms respondents will seek help for. Changes in bowel habit (76, 16.6%) and difficult in eating on most days (69, 15.1%) were the least symptoms respondents reported to seek immediate help for. About 4.4 – 7.4% of respondents saw no need to seek medical help for some of the listed ovarian cancer warning symptoms Table 4.

There is significant statistical relationship (P = .00 - .02) between the identification of the warning signs for ovarian cancer and immediate help seeking for the same symptoms except for difficulty in eating most days which showed no significant statistical relationship (P =.05), Table 5. Identification of ovarian warning symptoms was also found to be directly related to their help seeking habit as most symptoms that were minimally identified were the same symptoms noted to have lower help seeking response.

Table 3. Barrier factors to seeing a doctor

Variable	Frequency (%)			
	Yes sometimes	Yes often	Don't know	No
Worry about what Doctor might find	190 (41.6)	94 (20.6)	88 (19.3)	85 (18.6)
Too scared	148 (32.4)	124 (27.1)	61 (13.3)	124 (27.1)
Too embarrassed	125 (27.4)	87 (19.0)	56 (12.3)	189 (41.4)
No confidence in talking to Doctor about symptoms	141 (30.9)	45 (9.8)	42 (9.2)	229 (50.1)
Too busy	164 (35.9)	100 (21.9)	48 (10.5)	145 (31.7)
Too many other things to worry about	152 (33.3)	109 (23.9)	63 (13.8)	133 (29.1)
Difficult to arrange transport to Doctor	79 (17.3)	53 (11.6)	52 (11.4)	273 (59.7)
Difficult to make appointment with Doctor	147 (32.2)	73 (16.0)	33 (7.2)	204 (44.6)
Wasting Doctor's time	46 (10.1)	36 (7.9)	47 (10.3)	328 (71.8)
Doctor difficult to talk to	72 (15.8)	50 (10.9)	52 (11.4)	283 (61.9)

Table 4. Anticipated time to help-seeking

Variable	>3 days	3 days	2 days	1 day	Immediately	Never	Don't know
Persistent pain in abdomen	104 (22.5)	63 (13.8)	64 (14.0)	55 (12.0)	139 (30.4)	22 (4.8)	11 (2.4)
Persistent pain in pelvis	86 (18.8)	70 (15.3)	64 (14.0)	64 (14.0)	134 (29.3)	23 (5.0)	16 (3.5)
Persistent bloating	94 (20.6)	65 (14.2)	58 (12.7)	49 (10.7)	118 (25.8)	32 (7.0)	41 (9.0)
Extreme fatigue	87 (19.0)	61 (13.3)	55 (12.0)	70 (15.3)	131 (28.7)	23 (5.0)	30 (6.6)
Increased abdominal size	105 (23.0)	69 (15.1)	54 (11.8)	47 (10.3)	126 (27.6)	34 (7.4)	22 (4.8)
Back pain	108 (23.6)	84 (18.4)	83 (18.2)	57 (12.5)	84 (18.4)	20 (4.4)	21 (4.6)
Passing more urine than usual	93 (20.4)	74 (16.2)	57 (12.5)	45 (9.8)	86 (18.8)	31 (6.8)	71 (15.5)
Changes in bowel habit	72 (15.8)	76 (16.6)	81 (17.7)	44 (9.6)	76 (16.6)	31 (6.8)	77 (16.8)
Feeling full persistently	79 (17.3)	71 (15.5)	69 (15.1)	43 (9.4)	91 (19.9)	31 (6.8)	73 (16.0)
Difficulties eating on most days	117 (25.6)	78 (17.1)	50 (10.9)	37 (8.1)	69 (15.1)	33 (7.2)	73 (16.0)

Table 5. Cross tabulation of symptom identified and immediate help seeking habit for the same symptom

Variable	No that identified symptom	No (%) that will seek help immediately	*P* value
Persistent pain in abdomen	320	97 (30.3)	.00*
Persistent pain in pelvis	329	101 (30.7)	.00*
Persistent bloating	220	57 (25.9)	.00*
Extreme Fatigue	287	86 (30.0)	.00*
Increased abdominal size	287	80 (27.9)	.00*
Back pain	298	60 (20.1)	.00*
Passing more urine than usual	205	41 (20.0)	.00*
Changes in bowel habit	154	39 (25.3)	.00*
Feeling full persistently	171	36 (21.1)	.00*
Difficulty in eating on most days	189	26 (13.8)	.05

*Footnote: * statistically significant, Level of significance at P <.05*

A range of 39.9% - 75.9% of those with tertiary level of education were able to identify the various ovarian cancer symptoms while much lower values were obtained for others with lower level of education. A cross tabulation of clients' educational level and identification of ovarian cancer symptoms revealed a significant statistical relationship (*P* = .00 − .04) except for urinary frequency, bloating and difficulty in eating most days.

Ever knowing a cancer patient showed a significant statistical relationship with identifying all the ovarian cancer symptoms (*P*= .01 - .045) except for difficulty in eating most days which showed no significant statistical relationship with ever knowing a cancer patient before (*P*=.27).

Knowing a cancer patient before showed no significant statistical relationship with seeking help for all the warning signs of ovarian cancer outlined (*P* = .12 - .37) and also with their educational level (*P*=.31). As low as 11.7 − 27.3% of those who have ever seen a cancer patient before will seek for immediate help for various ovarian cancer symptoms. Also, having experienced a form of cancer before showed no relationship with the identification of all the warning signs of ovarian cancer outlined (*P* = .15 - .93).

7. DISCUSSION

Ovarian cancer is the second most common gynaecological cancer but the commonest cause of cancer related death in Nigeria [15]. Yet, to our knowledge, there is paucity of research elucidating the ovarian cancer symptoms awareness and health seeking response of the people. The age range of respondents was 20 – 62 years (mean age 34.19±7.99) which is a lower range compared with the 16–91 years (mean age 47) found in a previous study [12]. This disparity is most likely due to the fact that the present study was among the working age group and not among the general populace as in the earlier study. The lower age range may account for the low cancer prevalence of 2% among the studied population as compared to 5% found by Emma et al. [12] for instance, 12% of respondent in the present study were aged 45 years and above, unlike the 51% found by Emma et al. [12]. This disparity in cancer prevalence may also be attributed to the difference in race of the studied population as this series was purely amidst blacks while that of Emma et al. [12] was of mixed race.

In this study, level of education seems vital in the awareness and identification of ovarian cancer symptoms, as up to 39.9% - 75.9% of those with tertiary level of education were able to identify the various ovarian cancer symptoms. Identification of ovarian cancer symptoms was statistically significantly much lower for other respondents with lower level of education.

Similar to findings in previous studies [12,16], ovarian cancer symptom recall was very low while recognition was considerably higher even though it was observed that some respondents revisited the recall list after going through the outlined identifiable symptoms despite clear instruction not to do so. Influence of complexity of the cognitive processes required for recall, compared to those involved in recognition may

contribute to the disparity in recall and recognition of symptoms among respondents. Likewise, guess work cannot be excluded while trying to identify listed symptoms [16].

Findings in this series and a previous study revealed abdominal and pelvic pains as the most recalled and identified symptoms, and this may be due to the observation that these symptoms are significantly more severe and frequent in women with ovarian cancer than in women in a general clinic population. This may be the reason why a good number of our respondents would seek medical help early [17].

There is a need for improved awareness for warning signs of ovarian cancer symptoms because only 4.4% could recall up to three symptoms while as high as 28.0% could not identify any of the listed warning symptoms though some of them are even well known symptoms of late stage of ovarian cancer as well.Meanwhile, Emmaet al in a similar study among non-health workers at UK revealed that 99% recognised at least one symptom [12].

In addition, as high as 36.7% of respondents recalled quite unrelated symptoms like sneezing and insomnia. Worthy of mention that health workers who are expected to be better informed and meant to be a source of information to the populace were found deficient in knowledge of this potentially lethal disease. Above 45% of physiotherapists and Community Health Extension Workers (cadre of health worker that are mostly involved in primary health care, and closest to the populace) mentioned those unrelated symptoms.

Similar to findings in previous study [12], lowest recognition was observed for passing more urine than usual (33.7%) and feeling full persistently (37.4%), which are also early symptoms of ovarian cancer for which improved awareness could aid early suspicion of ovarian cancer.

There was no statistically significant relationship between 'ever known a cancer patient' or 'ever experienced cancer', and their seeking for medical help immediately, though ever known a cancer patient aided their identification of symptoms when presented with a list of warning symptoms of ovarian cancer. This could be attributed to various perceptions of people about cancer and its management.

Contrary to findings in previous studies [12], statistical significance was found between symptoms identification and immediate help seeking habit except for difficulty in eating most days. Their identification of the symptoms had no direct relationship on their immediate help seeking habit as very little percentage will seek immediate help for most identified symptoms. Yet, these are health workers with unrestricted access to consult a doctor. Those with low symptom identification also had low immediate help seeking tendency. Medical help seeking behavior is a product of many complexities e.g. religious and cultural beliefs. Therefore; many factors may influence the immediate help seeking habit apart from awareness. Previous studies revealed generally poor health seeking behaviour in the populace [18-20]. In this study, most respondents identified at least one barrier to seeking medical help for identified symptoms with only 7.9% having no barrier at all.

8. LIMITATIONS OF THE STUDY

A noted limitation of this study is the measurement of help-seeking intention for a hypothetical symptom as opposed to actual help-seeking behavior for an existing symptom which respondent might not have a true expression of.

Another limitation is that questions were asked within the context of ovarian cancer and it is likely that women anticipated faster help-seeking than would occur in a real-life situation where the symptom might not be appraised as a warning sign of cancer.

Recall as well as symptom identification were questionnaire based rather than through phone call or computer based test which would have prevented revisiting the earlier recalled symptoms after seeing the outlined symptoms.

9. CONCLUSION

The level of awareness of ovarian cancer warning symptomsis very low among the female health workers, and there is a poor medical help seeking habit even among those that could identify those symptoms. Efforts at improving these factors are therefore recommended.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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