RESEARCH ARTICLE

Factors Associated with Late Diagnosis of Cervical Cancer in Nepal

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Abstract

  <u>Background</u>: The majority of cervical cancers, the most prevalent cancer among Nepali women, are diagnosed in advanced stage leading to high mortality in Nepal. The present study explored factors associated with late diagnosis. <u>Materials and Methods</u>: A cross-sectional study was carried out in two specialized cancer hospitals of Nepal from August 12 to October 12, 2012. Randomly selected 110 cervical cancer patients were interviewed and their medical records were reviewed. Multivariate logistic regression analysis was performed to predict associations. <u>Results</u>: Mean age of patients was 52.7years (SD=10.6), 66% were illiterate and 77% were rural inhabitants. Medical shops (33.6%) and private hospitals (31%) were major first contact points of patients with health care providers (HCP). There was no cervical/per-speculum examination (78.2%) and symptoms misinterpretation (90%) of patients occurred in initial consultation with HCP. Four in every five cases (80.9%) of cervical cancer had late diagnosis. Literate women (adjusted OR=0.121, CI: 0.030-0.482) and women having abnormal vaginal bleeding as early symptom (adjusted OR=0.160, CI: 0.035-0.741) were less likely to suffer late diagnosis. Women who shared their symptoms late (adjusted OR=4.272, CI: 1.110-16.440) and did so with people other than their husband (adjusted OR=12.701, CI: 1.132-142.55) were more likely for late diagnosis. <u>Conclusions</u>: High level of illiteracy among women and their problematic health seeking behavior for gynecological symptoms are responsible for late diagnosis of cervical cancer in Nepal. In the absence of a routine screening program, prevention interventions should be focused on raising awareness of gynecological symptoms and improving health seeking behavior of women for such symptoms.

Keywords: Cervical cancer - symptoms - health care provider - health seeking behavior - late diagnosis - Nepal

Introduction

Cervical cancer is the third most commonly diagnosed cancer in women, with an estimated 529,800 new cases worldwide, more than 85% of which were in developing countries (Ferlay et al., 2010a; Jemal et al., 2011). Cervical cancer is perhaps the most curable form of any human cancer if detected at the precancerous stage (Devi et al., 2007). However, it continues to be a major public health threat to women in many low- and medium- resourced countries where it is still the leading cancer among women. With an incidence rate of 32.4 per 100,000 per annum (Ferlay et al., 2010b), cervical cancer remains to be the leading cancer and cause of cancer deaths among females in Nepal, accounting to 21% of all female cancer (Pradhananga et al., 2009). It has been reported that late stage at diagnosis is correlated with lower survival rates in cervical cancer patients (Waggoner, 2003; Vinh-Hung et al., 2007; Thomson and Forman, 2009).

Presentation of cervical cancer in advanced stage of disease is the end result of multiple complex factors including availability of health services for screening and diagnosis as well as other cultural and social issues (Hicks et al., 2006). Some studies (Brewer et al., 2009; Berraho et al., 2012; Ibfelt et al., 2012) have revealed soci-demographic differences in stages of diagnosis of cervical cancer. Lack of awareness and knowledge about cervical cancer among women was found equally responsible for late presentation of patients and advanced stage at diagnosis of cervical cancer (Yu et al., 2005). Inadequate knowledge of cervical cancer about etiology, screening, diagnostic procedure and treatment among health care practitioners (WHO, 2006; Tran et al., 2011) lead to the misdiagnosis of cervical cancer and unnecessary consultations before they had been referred to cancer diagnostic center which also contributes to the diagnosis of cervical cancer at advanced stage (Mayor, 2011). In the context that Nepal still lacks of information about the factors leading to late presentation of cervical cancer, the present study was conducted to explore the patients and health care provider related attributes that could be responsible for late diagnosis of cervical cancer in Nepal.

Materials and Methods

A cross-sectional study was conducted at two specialized cancer hospitals; BP Koirala Memorial Cancer Hospital (BPKMCH), Bharatpur, Chitwan and

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Bhaktapur Cancer Hospital, Bhaktapur of Nepal from August 12 to October 12, 2012. These two hospitals are the referral hospitals for cancer care where most of the cases of cervical cancer in Nepal are diagnosed and treated (BPKMCH, 2007). One hundred and ten Nepalese women diagnosed of cervical cancer for the first time by histo-pathological examination of cervix and attending the hospitals during the study period were included in the study. Follow up cases and patients with terminal illness were excluded from the study. The stage of cervical cancer at diagnosis was defined according to International Federation of Gynecology and Obstetrics (FIGO) system of staging of gynecological cancer (Pecorelli, 2009). In this study late diagnosis was operationalized on the basis of stage of cervical cancer at diagnosis. Stages I to IIA were defined as early diagnosis and stages IIB and above were considered as late diagnosis.

Data on stage at diagnosis of cervical cancer was extracted from hospital record of the patients under study. Patients were interviewed face to face for information about socio-demographic characteristics, history of diagnostic journey, awareness of cervical cancer and health seeking behavior of women, using structured questionnaire.

Chi Square test and p value at 95% confidence level were used to predict the association. Multivariate binary logistic regression analysis was performed to measure the association between study variables and late diagnosis of cervical cancer. Both unadjusted and adjusted odds ratios (OR) with their corresponding 95% confidence interval (CI) were calculated. All the calculations were performed in computer software SPSS 18.0 version.

Results

In total 110 patients enrolled in the study, the mean age was 52.72 years (SD=10.63) with the range from 27 to 79 years. Fifty four percent of the patients were older than 50 years. Most of them were from upper caste and relatively advantaged ethnic group (68.2%), rural inhabitants (77%) and illiterate (66.4%). All the participants were married. The mean parity of the patient was 4.85 (SD=2.57) which ranged from 1 to 13. More than half (56.4%) of the patients were from plain land terai region and rests were from hilly

region. In 68% of the patients, the diagnostic center from the residence was at a distance of more than four hours of travel time with available means of transportation. The median travel time was 5 hours with a range from 1 to 36 hours. Nineteen percent of patients were from lower socio-economic status.

Greater proportion (80.9%) of the patients had late diagnosis (stage≥IIB) and 68.2% of total patients were diagnosed in cancer hospitals. Women had to make an average of 5 (SD=1.8, range 1-6) consultations at nearly three (2.7±1.07, range 1-10) different health facilities before being referred to the diagnostic center. Cervical examination or per-speculum examination was not performed in more than three fourth (78.2%) and the symptoms were misinterpreted in 90% of the patients in initial consultation with health care provider (HCP). The average number of pre-diagnostic visits of patients in diagnostic center was 2.65 (SD=0.77, range 2-5).

The relationship between socio-demographic characteristics of patients and late diagnosis of cervical cancer is presented in Table 1. Literacy status of women was found independently associated with late diagnosis of cervical cancer. Lower risk of late diagnosis was observed for women who were literate (Adjusted OR=0.121, CI: 0.030-0.482). After multivariate analysis, age of women and remoteness of place of diagnosis were found having no significant association with late diagnosis, however their association was observed in bivariate analysis.

Table 2 presents the awareness and health seeking behavior of patients and their relationship with late diagnosis of cervical cancer. Compared to the foul smelling vaginal discharge, abnormal vaginal bleeding as early symptom was observed as a protective factor (Adjusted OR=0.160, CI: 0.035-0.741) for late diagnosis. Women were more likely to have late diagnosis if they delayed to share their symptoms or problem with others (Adjusted OR=4.272, CI: 1.110-16.440). Moreover, the likelihood of late diagnosis of cervical cancer was observed among women who first discussed their symptoms or problems with their friends (Adjusted OR=12.701, CI: 1.132-142.55) as compared to women who first did so with their husbands. In multivariate analysis, the place or person of first contact before consultation with HCP, patient's previous knowledge on cervical cancer and Pap test were

Table 1. Association between Socio-Demographic Characteristics of Patients and Late Diagnosis of Cervical Cancer in Nepal (n=110)

Characteristics		Diagnosis Early n (%)	Late n (%)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	p value
Age group (in years)	<40	6 (33.3)	12 (66.7)	1	1	
	40-50	12 (36.4)	21 (63.6)	0.875 (0.261-2.933)	0.410 (0.087-1.931)	0.259
	>50	3 (5.1)	56 (94.9)	9.333 (2.042-42.661)	3.582 (0.609-21.067)	0.158
Education status	Illiterate	4 (5.5)	69 (94.5)	1	1	
	Literate	17 (45.9)	20 (54.1)	0.068 (0.021-0.226)	0.121 (0.030 - 0.482)	0.003*
Remoteness of place of diagnosis	<4	13 (37.1)	22 (62.9)	1	1	
(Travel time in hours)	4-12	7 (11.1)	56 (88.9)	4.727 (1.666-13.412)	2.651 (0.698-10.078)	0.152
	>12	1 (8.3)	11 (91.7)	6.5 (0.750-56.300)	8.948 (0.776-96.337)	0.079
Socio-economic status	Higher	20 (22.5)	69 (77.5)	1	1	
	Lower	1 (4.8)	20 (95.2)	5.797 (0.732-45.901)	1.998 (0.178-22.372)	0.574

*significant at p value≤0.05

Table 2. Association between Awareness/Health Seeking Behavior and Late Diagnosis of Cervical Cancer in Nepal (n=110)

Characteristics	Diagnosis		Unadjusted OR (95% CI)	Adjusted OR (95% CI)	p value
	Early n (%)	Late n (%)			
Type of earlier symptom					
Foul smelling vaginal discharge	5 (8.3)	55 (91.7)	1	1	
Lower abdominal pain	6 (24.0)	19 (76.0)	0.288 (0.079-1.052)	0.305 (0.066-1.408)	0.128
Abnormal vaginal bleeding	10 (40.0)	15 (60.0)	0.136 (0.040-0.460)	0.160 (0.035-0.741)	0.019*
First person to share the problem					
Husband	13 (35.1)	24 (64.9)	1	1	
Friends	1 (4.8)	20 (95.2)	10.833 (1.302-90.141)	12.701 (1.132-142.55)	0.039*
Female family member	7 (13.5)	45 (86.5)	3.482 (1.226-9.890)	1.713 (0.470-6.262)	0.414
Immediate share of the problem					
Yes	17 (34.0)	33 (66.0)	1	1	
No	4 (6.3)	56 (93.7)	7.212 (2.236-23.262)	4.272 (1.110-16.440)	0.035*
Place/person of first contact before consulting HCP					
Nowhere	16 (25.8)	46 (74.2)	1	1	
Alternative practioners	5 (10.4)	43 (89.6)	2.991 (1.009-8.869)	2.722 (0.699-10.595)	0.149
Previously heard of cervical cancer					
Yes	13 (38.2)	21 (61.8)	1	1	
No	8 (10.5)	68 (89.5)	5.262 (1.921-14.411)	3.728 (0.807-17.235)	0.092
Previously heard about pap test					
Yes	8 (47.1)	9 (52.9)	1	1	
No	13 (14.0)	80 (86.0)	5.470 (1.788-16.736)	1.029 (0.171-6.183)	0.975

*significant at p value≤0.05

Table 3. Association between Health Care Provider (HCP) Related Factors and Late Diagnosis of Cervical Cancer in Nepal (n=110)

Characteristics	Diagnosis		Unadjusted OR (95% CI)	Adjusted OR (95% CI)	p value
	Early n (%)	Late n (%)			
Type of first contact HFs					
SHP/HP/PHC	1 (5.0)	19 (95.0)	1	1	
Medical shops	4 (10.8)	33 (89.2)	0.434 (0.045-4.173)	0.441 (0.045-4.308)	0.482
Government hospitals	8 (42.1)	11 (57.9)	0.072 (0.008-0.358)	0.108 (0.011-1.067)	0.057
Private hospitals	8 (23.5)	26 (76.5)	0.171 (0.020-1.485)	0.310 (0.032-3.017)	0.313
Number of pre-referral Health Facilities (HFs)					
1	7 (50.0)	7 (50.0)	1	1	
2-3	11 (14.5)	65 (85.5)	5.909 (1.73-20.159)	4.573 (0.277-75.481)	0.288
>3	3 (15.0)	17 (85.0)	5.667 (1.129-28.454)	4.096 (0.157-106.82)	0.397
Number of pre-referral consultations in Health Facilities					
≤3	8 (42.1)	11 (57.9)	1	1	
4-5	9 (13.6)	57 (86.4)	4.606 (1.458-14.554)	0.682 (0.052-8.903)	0.77
>5	4 (19.1)	21 (80.9)	3.818 (0.937-15.554)	0.720 (0.043-12.026)	0.819
Cervical/per-speculum examination in initial consultation					
Yes	9 (37.5)	15 (62.5)	1	1	
No	12 (14.0)	74 (86.0)	3.7 (1.325-10.334)	0.605 (0.15-2.381)	0.472
Symptoms misinterpretation in initial consultation					
No	5 (45.5)	6 (54.5)	1	1	
Yes	16 (16.2)	83 (83.8)	4.3 (1.176-15.892)	1.167 (0.173-1.030)	0.875

not found significantly associated with late diagnosis of cervical cancer, however their association was observed in bivariate analysis.

Table 3 describes the health care provider (HCP) related factors and their relationship with late diagnosis of cervical cancer. The type of first contact health facilities, number of pre-referral health facilities consulted, number of pre-referral consultations in different health facilities, cervical or per-speculum examination in initial consultation and symptom misinterpretation by health care providers in initial consultations were found associated with late diagnosis in bivariate analysis. But after multivariate analysis significant statistical association was not observed between health care provider related factors and late diagnosis of cervical cancer (Table 3).

Discussion

In the present study, four out of five cases of cervical cancer in Nepal were found having late diagnosis. Advanced stage of cervical cancer at diagnosis is correlated with treatment complication and poor treatment outcome (Vinh-Hung et al., 2007; Thomson and Forman, 2009). The higher proportion of the late diagnosis may

have contributed to the high mortality rate of cervical cancer in Nepal (Ferlay et al., 2010b).

Among the socio-demographic characteristics of the patients, literacy of women was found independently associated with late diagnosis and showed that literate women were less likely to have late diagnosis. Higher risk of cervical cancer among women with lower education (Franceschi et al., 2009) and lack of awareness of cervical cancer among them might have increased the likelihood of late diagnosis in those women. Similar relationship between education and late diagnosis of cervical cancer has been reported in previous studies in some countries (Ferrante et al., 2000; Kaku et al., 2008; Ibrahim et al., 2011; Berraho et al., 2012; Lourenco et al., 2012). Late stage reporting were observed for women with lower education in a similar study of south India (Kaku et al., 2008).

This study revealed that women having abnormal vaginal bleeding such as post-coital bleeding (PCB), inter-menstrual bleeding (IMB) or post-menopausal bleeding (PMB) as early symptom were less likely to have late diagnosis, compared to women with foul smelling vaginal discharge. Also women who didn't share their problem immediately after onset i.e. ignored their symptoms and who shared their problem with other persons than their husbands or family members were at elevated risk of late diagnosis. The result indicates that the nature of the early gynecological symptoms may determine the health seeking behavior of women. Studies in south India revealed that patients who had early symptoms of bleeding or bleeding with other symptoms were more likely to seek treatment within one month, compared to patients with other symptoms only (Kaku et al., 2008). Awareness of symptoms of cervical cancer even among educated Nepalese women is not satisfactory (Joy et al., 2011). Moreover, cultural sensitivity with shyness among Nepalese women may have also influenced for not discussing their problem related with reproductive system and organs with their near ones in time. Women usually tend to ignore the mild to moderate gynecological symptoms such as vaginal discharge considering it as a general problem and do not discuss their problem with others until it becomes warning symptoms such as vaginal bleeding and severe pelvic pain (Macleod et al., 2009). Similar result was observed in a study from Morocco, where increased risks for late stage diagnosis was observed in women who did not have vaginal bleeding as the first symptom (Berraho et al., 2012). Regarding the early symptoms such as 'vaginal discharge', it has been pointed out that 'non-recognition of the symptom seriousness' or ignoring the symptoms by patient ultimately lead to delayed diagnosis and advanced stage at diagnosis of cervical cancer (Macleod et al., 2009). In this study patients were asked who they first discussed their illness once they realize the symptoms. Women who discussed their illness first with their friends were more likely to have late diagnosis, compared to the women who did so with their husbands. The friends of the women may also lack the awareness of cervical cancer (Joy et al., 2011) and they may advise women the traditional health practices such as using herbs, self-medication, seeking help from traditional

faith healer. On the other hand, in Nepalese society the family finance is in control of husbands and husbands are less likely to believe in traditional health practices. So, husbands are more likely to encourage more appropriate health seeking behavior of their wives, thus reducing the delay in seeking care from health care provider.

This study was carried out in a small sample size and incorporates patient's perspective and is limited to the information provided by the patient and their medical record. In spite of the above fact, the study has been able to provide a document with wide range of information about the factors associated with late diagnosis of cervical cancer in Nepal.

In conclusion, high level of illiteracy among women and their problematic health seeking behavior are responsible for high prevalence of late diagnosis of cervical cancer in Nepal. Based on the findings of this study, further researches are warranted to explore the system related factors delaying diagnosis of cervical cancer. In the absence of routine screening program, the prevention interventions should be focused on targeted population to raise awareness about gynecological symptoms and to improve health seeking behavior of women for reducing the burden of late diagnosis of cervical cancer in Nepal.

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