

Assessment of Treatment Compliance and Associated factors among Cervical Cancer Patients in Tikur Anbessa specialized hospital, Oncology unit, Ethiopia 2012

Research Article

Gebre Y^{1*}, Zemene A², Fantahun A¹, Aga F³

¹ Department of Nursing, Mekelle University, Ethiopia.

² Department of Midwifery, Mekelle University, Ethiopia.

³ Department of Nursing, Addis Ababa University, Ethiopia.

Abstract

Background: Cervical cancer is a major public health problem through-out the world, and despite important declines in incidence and mortality observed in developed countries in the last 20 years, those indicators remain almost unchanged in developing countries. Cervical cancer ranks as the 2nd most frequent cancer among women in Ethiopia, and the 2nd most frequent cancer among women between 15 and 44 years of age. Compliance has been defined as “the extent to which a person’s behavior coincides with healthcare advice” or as when patients do what health professionals recommend. Cancer patient compliance with medical advice and procedures is crucial to successful treatment.

Objective: The purpose of the study was to assess compliance to treatment services and associated factors affecting treatment compliance of cervical cancer patients in Tikur Anbessa specialized Hospital, oncology unit

Materials and methods: An institutional based cross sectional descriptive study was conducted among 314 cervical cancer patients who are selected based on inclusion criteria and data will be collected using face to face structured questionnaire based interview. The data was entered in to EPI-INFO version 3.5.1, exported to SPSS for analysis and data presented in graphs and charts.

Result: Out of 314 interviewed cervical cancer patients 219(69.7%) were compliant but 95(30.3%) were non compliant to the treatment services. There is a significant difference between the participants 121(78.6%) who had missed their appointment time with, **OR**=2.32(1.408, 3.882) and **p** value=0.001 than the respondents 98(61.2%) of cervical cancer patient of treatment compliance.

Conclusion: The findings of the study about the treatment service were partially non compliant of Radiotherapy and chemo-radiation services. Patients who missed their appointment were 2.3 times non compliant than those who adhere to the appointment time. Factors with low income level, missing appointment, medication side effect, prolonged treatment, poor understanding of treatment advantages were significantly affecting treatment compliance based on multiple logistic regressions.

Keywords: Cervical Cancer; Compliance; Chemo-Radiation; Noncompliance and Chemotherapy.

*Corresponding Author:

Gebre Yitayih,

Department of Nursing, Mekelle University, Ethiopia.

E-mail: gebyit45@yahoo.com

Received: January 12, 2015

Accepted: February 23, 2015

Published: March 02, 2015

Citation: Gebre Y, Zemene A, Fantahun A, Aga F (2015) Assessment of Treatment Compliance and associated factors among Cervical Cancer Patients in Tikur Anbessa specialized hospital, Oncology unit, Ethiopia 2012. *Int J Cancer Stud Res.* 4(2), 67-74. doi: <http://dx.doi.org/10.19070/2167-9118-1500010>

Copyright: Gebre Y[©] 2015. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Introduction

Back ground

Cervical cancer is a common cancer of the female reproductive system, specifically the cervix of the uterus [1]. Cervical cancer is a major public health problem through-out the world, and despite important declines in incidence and mortality observed in developed countries in the last 20 years, those indicators remain almost unchanged in developing countries. Cancer of the cervix is the second most common form of cancer amongst South African women. Approximately one in every 41 women will, within their lifetime, develop this form of cancer. Pap smears to detect cervical abnormalities are the best known form of secondary prevention [2].

Compliance was defined as the number of assessment forms

completed over the number of evaluation days available for each patient. Mean compliance was 58%. The main reasons for not completing the form were related to subjective psychological variables (44%), physical distress (26%), and absence of pain (16%). Lack of understanding of the method was reported as the main reason for non-compliance by only 1% of patients [3].

Cancer patient compliance with medical advice and procedures is crucial to successful treatment. Studies shows that by assessing the views of 246 randomly selected oncologists about the extent of, and reasons for, cancer patient noncompliance [4]. Oncologists who reported greater problems with noncompliance had significantly more patients on randomized clinical trials. Oncologists cited psychological problems as a prime determinant for noncompliance. Treatment-related side effects were also seen as contributing to patient noncompliance. The results suggest that mental health and educational disciplines could play a significant role in the reduction of cancer patient noncompliance [5].

Generally speaking, it was estimated that the compliance rate of long-term medication therapies was between 40% and 50%. The rate of compliance for short-term therapy was much higher at between 70% and 80%, while the compliance with lifestyle changes was the lowest at 20%–30%. Furthermore, the rates of non-compliance with different types of treatment also differ greatly [6].

One of the greatest challenges of the multi professional team assisting oncologic patients is to obtain treatment compliance to chemotherapy. Treatment compliance may be characterized as the extent to which the individual's behavior agrees with the medical or health advice in terms of taking their medication, changing their life style, and attending medical appointments [7]. Compliance may be affected by several factors, which are associated with patients, treatment, health services, beliefs, and life habits being aware of these factors is an important tool for health professionals who accompanies the chronic patient evolution, especially cancer patients [8].

Several studies found that patients with higher educational level might have higher compliance. Marital status might influence patients' compliance with medication positively. The help and support from a spouse could be the reason why married patients were more compliant to medication than single patients. Poor communication with healthcare providers was also likely to cause a negative effect on patient's compliance. Forgetfulness is a widely reported factor that causes non-compliance with medication or clinic appointments [9].

A study done in India indicates that patients attending fewer than 85% of their chemotherapy appointments were considered non-compliance and those attending 85% or more of chemotherapy appointments were considered compliant [10]. The 85% compliance rate was used as a cut-off to determine adherence and non-compliance because found that patients who were administered less than 85% of chemotherapy received less than maximal benefit. Using this definition, results indicated that 63% of patients adhered while 37% did not adhere to attending chemotherapy appointments.

The ultimate goal of this research project was increased cervical cancer case exposure and treatment by screening such neglected high risk groups, and double burden in such settings and to the

community, enhanced the treatment outcome and increased quality of life among cervical cancer survivors. The findings of was vital for the program managers, stakeholders and researchers to recognize the status of cervical cancer survivors and co-morbidities and commence treatment and improve quality of life. This research was aimed to reduce devastating symptoms and promote coping skills, thus enhancing psychosocial, functional status and clinical management of cervical cancer patients. This research was used as a base line for policy makers, researchers and voluntary institutions since there is a little research conducted on cervical cancer in Ethiopia.

Methods and Materials

The study Area, Tikur Anbesa Specialized Hospital is found in Addis Ababa City, Ethiopia. The hospital has been inaugurated by the title "Prince Mokonnen the Dunk of Harar" Memorial Hospital on 3/11/1973. The hospital was attempted to occupy 500 beds, and had modernly planned and accommodated facilitated with the outpatient department had seven x-ray, nine surgical and two laboratory diagnostic rooms. This study area was selected and this especial unit established in 1994 by one oncologist, one radiologist and two nurses and start service. The cancer care service given in the following rooms: Radiotherapy room, Chemotherapy administration Room, in patient ward, cancer Plan room, and Emergency room for cancer patient and outpatient department for cancer patients Use to screen.

Study Settings

The study was conducted in Tikur Anbesa specialized hospital oncology unit from January 12, 2011 –March, 2012.

The Study Design

A cross sectional descriptive institution based study was applied in Tikur Anbesa specialized hospital in oncology unit for the assessment compliance of cervical cancer patient treatment services.

The Target Population

All cervical cancer patient who came to Tikur Anbesa specialized Hospital for treatment services. For the purpose of this study, all cervical cancer patients newly diagnosis and continue for the treatment services and different ethnic backgrounds was recruited over eight weeks period.

Inclusion Criteria: All cervical cancer patients diagnosed and follow treatment services in oncology units and both inpatient and outpatient clients were included.

Exclusion Criteria: Cervical cancer patients, who were newly diagnosed, who had not willing to participate in the study, unconsciousness and critically ill patients were excluded.

Study Sample

The study sample includes all cervical cancer patients confirmed by diagnosis and started on treatment services.

Sample Size Calculation

The sample size was determined by assuming 50% of compliance of cervical cancer patients with the treatment services, 5% marginal error and 95% confidence (0=0.05). Based on this assumption, the actual sample size for the study was determined using the formula for sing population proportion.

$$n = (Z\alpha/2)^2 / d^2$$

$$n = (1.96)^2 \times 0.05 (1-0.05) / (0.05)^2$$

n = 384

None Response rate, 5% = 19
 19+384=403 required sample size.
 n= the required sample size

Z=standard scored comes pending to 95% confidence interval.
 P= the prevalence rate not known=0.5
 D=the margin of error. (Precision)

The total population is less than 10, 000 and we can use correction formula

$$Nf = (1 + (ni/ni)/Ni)$$

$$NF = 1 + 384 / (384 / 1368)$$

$$Nf = 314$$

Sampling Procedures

Participants were recruited from TASH, oncology unit located in Addis Ababa city. Each participant was approached in person and asked to give information for data collectors and investigator of the study.

Data was collected by using convenient sampling techniques which was none probability sampling methods for cervical cancer patients with treatment services those attending during the data collection period directly from the patient using interview based questionnaire and data record review was used. There is one governmental institution of oncology unit with radiotherapy, surgical therapy, chemotherapy and concurrent cancer treatment services given in Tikur Anbessa specialized hospital.

Variables

Independent Variables: The socio demographic futures which include cost or economics, access to care, and psychosocial factors. Age, annual income, distance from the care site, health status of the patients, history of sexual experiences, abortion history and status of HIV were considered as a predictor variables.

Dependent Variables: Compliance of treatment services, non compliance of treatment among cervical cancer survivors.

Data Collection Procedures

An interview based questionnaire was administered by nurses out off oncology unit staffs consented participants. The questionnaire was divided base on the study objectives; socio economical, treatment compliance, associated factors in therapeutic compli-

ance. The questionnaire interview will be conducted in Amharic version but wherever necessary, there was a translator into their mother tongue languages that do not have good understanding of Amharic.

Data Analysis And Management

The collected data was entered using Epi info version 3.1 software and analyzed using SPSS version 20 Findings were summarized and presented using descriptive summary statistics and diagrams, tables and graphs were used for presentation. Chi-square (X²) test, odds ratio calculation and binary logistic regression and multivariate logistic regression analysis was done to explore the significance level between the outcome and predictors variables among cervical cancer clients.

Data Quality Control

Data was maintained principally by applying appropriate sampling technique and study design. Pre-testing was carried out among 16 clients. The Standardized questionnaires were translated in to local language Amharic for interview. Training was given to data collectors on the objective of the research and techniques of interviewing. Supervisors and investigators were closely followed up and daily counter checkup of questionnaires for completeness.

Operational Definitions

Compliance: means the patient does what he or she has been told to do by the doctor/pharmacist or nurses and the patient able to complete the treatment services. It will be measured by preparing questionnaires' on patient perception, benefits, perceived barriers and self efficacy.

Level of compliance	Averages of experts preferred definitions
Compliant	Patient misses <25% of medications
Partially compliant	Patient misses 25-65% of medications
Non compliant	Patient misses >65% of medications

Non compliance: Denotes the behavior that are not consistent to the care provider recommendations due to client characteristics, Psychological factors, Social support, Somatic factors, Regimen characteristics and Economic and socio cultural factors. This will be defined by the patient perceptions towards the reasons why the clients not complete the treatment services using questionnaire based interview of thirteen items with dichotomous responses.

Ethical Clearance

The research ethically had cleared from Addis Ababa University College of health science institution review board officially at different level had been communicated through formal letters and permission was obtained from concerned body of hospital directors. Data collectors had request first for respondents consent orally before starting interviewing and created comfortable environment and keep privacy and confidentiality.

Results

Socio Demographic Characteristics

A total of **314** cervical cancer patients were interviewed in Tikur Anbesa specialized hospital, oncology unit, with a response rate 100%. The majority of the participants were an age group of 15-44 years. Out of all respondents 123 (39.2%) were Amhara and 95 (30.3%) were Oromo in ethnicity, while 195 (62.1%) were orthodox in religion.

A great part of cervical cancer patients who had attended a formal education were 191 (60.8%) but 123 (39.1%) of participants were illiterate. One hundred fifty one (48.1%) of cervical cancer patients had married and majority of the participants 144 (45.9%) were house wives. In this study, most cervical cancer patients 152 (48.4%) had categorized as low monthly income level of one hundred birr to five hundred one birr. Among cervical cancer patients who had been interviewed 139 (44.3%) were came from a distance of one hundred km to five hundred km range to get treatment services institution (table 1)

Health Status of Cervical Cancer Patients

According to this study, two hundred twenty (70.1%) of cervical cancer patients' body mass index calculated as 18.5-24.9 kg/m² but 63 (20.1%) of the participants were grouped as less than 18kg/m². Out of which 103 (33.4%) of the respondents were alcohol drinkers while 140 (44.6%) had no any history of substance abuse.

Among all cervical cancer patients who had interviewed 132 (42.0%) were their treatment under categorized as a clinical **stage III** and 99(31.5%) of them were stage II cervical cancer. Two hundred forty four (77.7%) of the respondents were non reactive for HIV test but 39(12.4%) were positive in HIV test and follow their treatment.

According to the respondents 184(58.6%) of cervical cancer patients had previous history of abortion and 189(60.2%) were contraceptive users. Among cervical cancer patients who were interviewed about the treatment effect on sexuality 159 (50.0%) of the participants had loss of sexual feeling after the treatment had started.

Table 1. Socio demographic characteristics of cervical cancer patients in Tikur Anbesa Specialized hospital Oncology unit, 2012.

Characteristics	Frequency (number)	Percent (%)
Age group		
0-14 years	62	19.7
15-44 years	109	34.7
45-64 years	77	24.5
65+ years	66	21.0
Religion group		
orthodox	195	62.1
Muslim	75	23.9
others	44	14.0
Educational level		
illiterate	130	41.4
elementary	66	21.0
high school	69	22.0
college and above	49	15
Ethnicity		
Amhara	123	39.2
Oromo	95	30.3
Tigray	37	11.8
Gurage	37	11.8
Others	22	7.0
Marital status		
Single	56	17.8
married	151	48.1
divorced	66	21.0
widowed	41	13.1
Occupational status		
house wife	144	45.9
prostitution	20	6.4
employed	96	30.6

non employed	54	17.2
Monthly income level		
Less than 5.26 \$	49	15.6
5.26 \$-26.3 \$	152	48.4
27.0 \$-157.8 \$	72	22.9
Greater than 158.0 \$	41	13.1
Distance from the health institution		
Less than 100km	90	28.7
100km-500km	139	44.3
Greater than 501km	85	27.1

Out of all cervical cancer patients 118 (37.6%) were provided radiotherapy while 117 (37.3%) was used combination therapy that is Chemo-radiation treatment services (table 2).

Reasons For Non-Compliance of Treatment Among Cervical Cancer Patients

Based on this study findings, treatment compliance would be affected through different factors of which the respondents 181 (57.6%) of them explained that medication intake for longer period of time were considered as factor but others 133 (42.3%) respondents had not been considered as a factor to treatment compliance.

Two hundred six (65.6%) of the respondents had been affected with medication side effects on the body. Of which 229 (72.9%) of the participants were also identified as unable to buy medication was the factor in the treatment compliance.

Among all cervical cancer patients who had interviewed 134 (42.6%) were identified that unable to get consultation from health professionals would be a factor that affects the compliance of treatment services.

According to the respondents 162 (51.9%) and 151 (48.1%) were affected their treatment compliance because of perception of ineffective treatment and poor understanding of the treatment advantages respectively.

One hundred eighty three (58.3%) cervical cancer patients mentioned that poor communication with the health care givers would affect their treatment compliance in follow up services, while 154 (49.0%) of the participants were responded as missing appointment time was a factor that affect not to complete their treatment properly. And also 187 (59.6%) participants had explained that unable to see the immediate advantage of the treatment services was considered as a factor.

Out of 314 interviewed cervical cancer patients 219 (69.7%) were compliant but 95 (30.3%) were non compliant to the treatment services. Of which 35 (36.8%) and 30 (30.5%) were provided radiotherapy and chemotherapy respectively. The reason as identified by 39 (41.0%) of the respondents with non compliant to the treatment services was long duration of appointment time and 20 (20.0%) of the participants due to medication side effect on the body (table 3).

Majority of cervical cancer patients were compliant to radiotherapy 86 (39.3%) and Chemo-radiation 83 (37.9%) while noncompliant in radiotherapy 33 (34.7%) and Chemo-radiation 35 (36.8%)

of the treatment provision were identified (table 4). Treatment compliance of cervical patient was enhanced through respondents education 261 (83.1%), considering the cost of treatment 258 (82.4%) and 199 (63.4%) of the respondents explain that treatment was highly enhanced but not significant factor.

Factors

Associated with treatment compliance of cervical cancer patient's treatment services: In both Binary logistic regression and Multi variant logistic regression analysis identify that monthly income level less than 5.26 dollars had significantly associated with treatment compliance OR=2.3 (0.894,5.971) with 95% confidence interval than participants 159 (81.9%) who had got monthly income level greater than 26.3 dollars of cervical cancer patients.

Based on multi variant analysis there is no significant association of educational status, marital status, history of substance abuse and distance from the health institution with treatment compliance among cervical cancer patients. Multi variant analysis also identifies significant associated factors that affects the treatment compliance among the respondents 145 (74.4%) of longer treatment duration would taken, OR=0.50 (0.03, 0.818) with p value=0.006.

According to this research, in multi variant analysis there is a significant difference between the participants 121 (78.6%) who had missed their appointment time with, OR=2.32 (1.408, 3.882) and p value=0.001 than the respondents 98 (61.2%) of cervical cancer patient of treatment compliance. Cervical cancer patients missed their appointment were 2.3 times non compliant than who were not missed the appointment time. Poor understanding of the treatment advantage had a significant association in 125 (76.7%) of participants than the respondents 94 (63.2%) had been understand the treatment advantages given in cervical cancer treatment follow up services.

Discussion

The present study set out to examine compliance to specific recommendations, appointment, medication side effects, depression, patient perceptions, were associated with variation in compliance to treatment services. Of the patients who agreed to participate in the study, 100% of patients partially non compliant to the treatment.

The majority of the participants were an age group of 15-44 years and age is not a factor that affects the treatment compliance since majority of the were adult age group, in my study. In this study,

Table 2. Health status of cervical cancer patients followed their treatment in Tikur Anbesa specialized hospital, Oncology unit, 2012.

Characteristics	Frequency (number)	Percent (%)
Body mass index(kg/m²)		
<18.5	63	20.1
18.5-24.9	220	70.1
>25	31	9.9
Stage of cervical cancer		
stage I	20	6.4
stage II	99	31.5
stage III	132	42.0
stage IV	22	7.0
postoperative	41	13.1
History of abortion		
yes	184	58.6
no	130	41.4
Treatment modality		
Chemotherapy	118	37.6
Radiotherapy	14	4.5
Surgical therapy	117	37.3
Chemo-radiation	32	10.2

Table 3. Reasons for non compliance of treatment among cervical cancer patients in Tikur Anbesa specialized hospital, 2012.

Characteristics	Frequency (number)	Percent (%)
Too much medication intake for long duration of time		
Yes	181	57.6
No	133	42.4
Medication side effect		
yes	206	65.6
No	108	34.4
Low income to by medication		
Yes	229	72.9
No	85	27.1
long treatment on body fatigue		
Yes	195	62.1
No	119	37.9
long distance from institution		
Yes	260	82.8
No	54	17.2
poor understand of treatment advantage		
Yes	163	51.9
No	151	48.1
poor communication with care givers		
Yes	183	58.3
No	131	41.7
Interrupt treatment when free from sufferings		
Yes	161	51.3
No	153	48.7
Missing appointment time		
Yes	154	49.0
No	160	51.0

Table 4. Comparison between treatment modality and compliance of treatment service among cervical cancer patients in Tikur Anbesa specialized hospital, 2012.

Characteristics		Treatment interruption	
		Compliance of Rx	Non compliance of Rx
Treatment Modality	Chemotherapy no %	19 8.7%	10 10.5%
	Radiotherapy no %	86 39.3%	33 34.7%
	Surgical therapy no %	9 4.1%	7 7.4%
	Chemo radiation no %	83 37.9%	35 36.8%
	Adjuvant therapy no %	22 9.6%	10 10.5%
Total		219 69.7% 100.0%	95 30.3% 100.0%

Table 5. Binary logistic regression and multivariate logistic regression analysis of significant factors affecting treatment compliance of cervical cancer patients following their treatment in Tikur Anbesa specialized hospital, oncology unit, 2012.

Characteristics	Factors affecting treatment compliance of cervical cancer patients				
	YES No (%)	NO No (%)	P value	COR (>95.0%) C.I for EXP(B)	AOR (> 95.0%) C.I for EXP(B)
Treatment side effect					
Nausea & Vomiting	46(14.6%)	69(22.0%)	.011	2.800(1.278,6.133)	3.025(1.286, 7.112)
mucositis	13(4.1%)	35(11.1%)	.254	1.560(0.610,30988)	1.813(.652,5.046)
loss of hair headache	5(1.6%)	21(6.7%)	.667	1.000(0.303,3.302)	1.324(.369, 4.751)
anorexia and diarrhea	21(6.7%)	52(16.6%)	.050	1.696(0.721,3.992)	2.563(.999, 6.575)
Monthly income level					
Less than 100 ETB	25(51.0%)	24(49.0%)		1.76(0.562,5.512)	2.310(.894, 5.971)
100-500 ETB	106(69.7%)	46(30.3%)	.004	0.670(0.278,2.28)	1.114(.492, 2.520)
501-3000 ETB	59(81.9%)	13(18.1%)	.002	0.452(0.148,1.37)	.623(.235, 1.653)
Greater than 3001	29(70.7%)	12(29.3%)	0.998		
Missing appointment					
Yes	121(78.6%)	33(21.4%)	.001		2.320 (1.408, 3.822)
No	98(61.2%)	62(38.8%)		4.31(0.262,0.710)	
Poor understand of treatment advantage					
Yes	94(62.3%)	57(37.7%)	.006	1.99(1.22,3.36)	.536(1.314,3.915)
No	125(76.7%)	38(23.3%)			

married patients 106(48.04%) were more compliant than single 39(17.8%) of the respondents but not a significant factors that affecting the treatment compliance of cervical cancer patients in line with other studies done that marital status might influence patients' compliance with medication positively.

The present study indicates that of great part of cervical cancer patients who had attended a formal education were 191(60.8%) but 123(39.1%) of participants were illiterate and illustrate patients were less likely compliant than educated clients but not

significant factor affecting treatment compliance. Several studies found that patients with higher educational level might have higher compliance.

The study shows also most cervical cancer patients 152(48.4%) had categorized under low monthly income level of one hundred birr to five hundred one birr. Previous studies have indicated that low-income minorities experienced poorer radiation treatment compliance for cervical cancer compared with national rates (16% vs. 63%), had a high rate of treatment interruptions (64%) and

discontinuation of treatment for nonmedical reasons (20%), 30 were noncompliant with oral self-administered medication >70% of the time (measured by drug serum levels), and missed appointments >30% of the time (31).

Out of 314 interviewed cervical cancer patients 219(69.7%) were compliant but 95(30.3%) were non compliant to the treatment services. Of which 35(36.8%) and 30(30.5%) were provided radiotherapy and chemotherapy respectively.

The reason as identified by 39(41.0%) of the respondents with non compliant to the treatment services was long duration of appointment time and 20(20.0%) of the participants due to medication side effect on the body was examined in the study area. But other studies dealing with chemotherapy was discontinued because of toxic effects in 9 patients, refusal to continue in the case of 17 patients, diminished performance status in 4 patients, and other reasons in 4 patients.

This study shows that majority of cervical cancer patients were compliant to radiotherapy 86(39.3%) and chemo-radiation 83(37.9%) of the treatment while noncompliant in radiotherapy 33(34.7%) and chemo-radiation 35(36.8%) of the treatment discontinued were identified. but no significant association between treatment modality and compliance to the treatment services. In line with this a study done in Thailand radiotherapy was delivered according to the protocol or with minor deviations in 83 percent of the patients in the combined-therapy group and 84% of those in the radiotherapy group. Major but acceptable treatment deviations occurred in another 11 percent and 9 percent of these groups, respectively (34).

Based on this study, poor communication with the health care providers in respondents 134(73.2%) were less likely to be compliant to the treatment and risk to non compliant but not significant, OR=1.480(0.911, 2.405). The Previous study shows that poor communication with healthcare providers was also likely to cause a negative effect on patient's compliance.

Based on this study findings, treatment compliance of cervical cancer patient was enhanced through respondents education 261(83.1%), considering the cost of treatment 258(82.4%) and 199(63.4%) of the respondents explain that treatment was highly enhanced but not significant factor. A study done in kapalan education was the most common intervention (78%), followed by provider education (40%) and feedback (27%); with most (59%) programs using a combination of interventions (46).

Conclusion

In conclusion the findings of the study about the treatment service were partially noncompliant of Radiotherapy and chemoradiations as a main treatment protocols provided in Tikur Anbessa specialized hospital, oncology unit. Cervical cancer patients who missed their appointment were 2.3 times non compliant than keeping their appointment.

Factors which affect treatment compliance were distance from health institution; educational status and treatment modality were not significant in multiple logistic regressions due to small sample

size. While such factors like low income level ,missing appointment, medication side effect, prolonged treatment , poor understanding of treatment advantages were significantly affects treatment compliance based on multiple logistic regression analysis of the study.

Treatment compliance of cervical patient was enhanced through respondents education 261(83.1%), considering the cost of treatment 258(82.4%) and 199(63.4%) of the respondents explain that treatment was highly enhanced but not significant factors.

Strength and Weakness

The major strength of the study was the first study to address cervical cancer treatment compliance and non compliance in Ethiopia and significant factors identified for treatment service.

There are some limitations to the present study. The primary limitation of the study was self reporting measurement of treatment compliance and the study should be better if, designed in longitudinal study.

Acknowledgement

I am very much grateful to Addis Ababa University and Mekelle University for their sponsoring this research project .My sincere and deepest gratitude will be for supervisors and study participants. I would like to also extend my acknowledgment to Fekadu Aga ,Tikur Anbessa Specialized hospital oncology unit staffs, Dr.Dagne, Dr. Matias, Balew Arega, Yemisrach Assefa and Tesfaye Dagn for their unreserved support in the whole research project.

References

- [1]. Ferlay J, Shin HR, Bray F, Forman D, Mathers C, et al. (2010) Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *International journal of cancer* 127(12): 2893-2917.
- [2]. Alliance for Cervical Cancer Prevention (ACCP), "Natural History of Cervical Cancer: Even Infrequent Screening of Older Women Saves Lives," Cervical Cancer Prevention Fact Sheet (Seattle: ACCP).
- [3]. Schrag D, Hanger M (2007) Review Medical oncologists' views on communicating with patients about chemotherapy costs: a pilot survey. *J Clin Oncol* 25(2):233-7.
- [4]. (2003) Poor adherence to long-term treatment of chronic diseases is a worldwide problem. 2003. *Rev Panam Salud Publica* 14(3):218-21.
- [5]. Anttila A, Laara E (2000) Cervix cancer: Geographical correlations. Evaluation and Monitoring of Screening Programmes Brussels: European Commission, Europe Against Cancer Programme. 77-97.
- [6]. Pfaendler KS (2008) Management of cryotherapy-ineligible women in a "screen-and-treat" cervical cancer prevention program targeting HIV-infected women in Zambia: lessons from the field. *Gynecologic Oncology* 110(3):402-7.
- [7]. WHO Household Surveys with geographical information system (GIS) multistage cluster sampling. (2010) Screening coverage among women aged 18-69. *World Health Surveys*. Geneva: World Health Organization (WHO).
- [8]. Goldie SJ (2005) Cost-effectiveness of cervical-cancer screening in five developing countries. *New England Journal Medicine* 353(20):2158-68.
- [9]. Vlasnik JJ, Aliotta SL, DeLor B (2005) Medication adherence: factors influencing compliance with prescribed medication plans. *Case Man-ager* 16:47-51.
- [10]. Jing Jin, Grant Edward Sklar (2008) Factors affecting therapeutic compliance: A review from the patient's perspective. *Ther Clin Risk Manag* 4:270-280.