IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 10, Issue 5 Ser. IX (Sep. – Oct. 2021), PP 01-09
www.iosrjournals.org

Financial Impact of Cervical Cancer on Patients Being Treated at Regional Cancer Centre, Bengaluru

V. Monisha[1, *], Dhami PP[2], Devkota N[3], Nepal S[4], Khanal S[5], Khanal K[6], Mandal RK[7]

[1] *(Department of Public Health K.S Hegde Medical Academy, Nitte University, Deralakatte, India)*
[2,6] *(Department of Health Care Management (PG School), National Open College, Lalitpur, Nepal)*
[3] *(Department of Research and Development, National Open College, Pokhara University, Lalitpur, Nepal)*
[4] *(Public Health Scholar, National Open College, Pokhara University, Lalitpur, Nepal)*
[5] *(Department of Health Care Management, Imperial Business School, Kathmandu, Nepal)*
[7] *(Department of Public Health, National Open College, Pokhara University, Lalitpur, Nepal)*

Abstract - *Cervical cancer is the second most common female cancer in India whereas in Bengaluru it is the leading site of cancer in females. The major mode of financing treatment in India is out of pocket (OOP), which accounts for more than three quarters of cancer expenditure in India, is one of the greatest threats to the patients and their families. The study aimed to estimate direct and indirect costs, catastrophic health expenditure, predictors associated with expenditure and financial coping mechanisms of cervical cancer patients. It is a cross-sectional study which was conducted using primary data from cancer patients visiting Regional Cancer Centre during January – February 2017. Total 200 sample was derived using formula* $n = z^2(1-\alpha/2)\, p*q/d^2$. *The semi structured face to face interview schedule was administered as a data collection tool. Ethical clearance was issued from the Institutional Ethics Committee (IEC), K.S Hegde Medical Academy, Nitte University and permission was taken from the regional cancer centre, Bengaluru prior conducting the study. Data were analysed using Scientific Package for Social Science version-20. The average direct costs (□91,811.35) accounted for the largest share compared with the indirect cost (□39,237.78). Most of the respondents (82%) had state health insurance and majority of the respondents (98%) had catastrophic health expenditure. It was found that there was statistically significant difference in direct cost and indirect cost according to place of residence, religion, marital status, occupation, household monthly income, current cancer stage, type of facility and health insurance (p<0.05). The respondents used more than one strategy to cope with costs, 61% of them borrowed from formal source, followed by borrowing from informal source (49.5%) and selling assets (5%). The respondents had a large share of state health insurance which is a positive note, but many households still had to resort to the borrowing to cope with expenditure and majority of the respondents had catastrophic health expenditure. Hence sound public health policies and more social security measures should be implemented in order to ease the burden on the households.*

Keywords: *Direct cost, Indirect cost, Coping mechanisms, Catastrophic health expenditure*

Date of Submission: 09-10-2021 Date of Acceptance: 23-10-2021

I. Introduction

Cancer is one of the leading cause of morbidity and mortality in both more and less economically developed countries accounting for approximately 10 million deaths in 2020.The global burden of cancer is tremendous and has been exerting physical, emotional and financial strain on individuals, family and on overall health system.(1) Cervical cancer is the fourth most common cancer in women. In 2018, an estimated 570 000 women were diagnosed with cervical cancer worldwide and about 311 000 women died from the disease.(2)In India, cervical cancer is the second most common cancer in women and it was estimated that about 60,078 cervical cancer deaths occurred in 2018.(3) The cancer registry of Bengaluru covers the resident population of Bengaluru urban which has an area of 741 km^2 and reported 1541 cases of cervical cancer in 2005-2007.(4)

The cost of the cancer is sky rocketing with respect to out of pocket (OOP) expenditure for medical and related non-medical expenses, productivity loss and potential loss of household income of family members.(5) OOP expenditure, which accounts for more than three quarters of cancer expenditure in India, is one of the greatest threats to the patients and their families and is increasingly responsible for catastrophic health expenditure.(6)It is reported that the financial burden of cancer is larger for those with low household income when compared with high household income, as low household income subjects are unable to access treatment due to financial barriers and this may increase in health care disparities. Studies reported that the most of the

cancer subjects are experiencing severe financial distress in the months and years following diagnosis. As cancer patients incur expenses and loss of wages, even those with insurance coverage are likely to exhaust savings and accumulate debt.[5]

The cost of illness can be divided into direct costs and indirect costs. Direct costs are the value of resources used in treatment of disease. They include costs for registration, consultation, hospitalization, hospital consumables, treatment modalities, etc. These estimates are used to address the quantity of resources used to treat a disease. Indirect costs are the value of resource lost as a result of illness. They include productivity lost to either morbidity or mortality. Hence, this study aimed to estimate direct and indirect costs, catastrophic health expenditure, predictors associated with expenditure and financial coping mechanisms of cervical cancer patients. These estimates are used to address the magnitude of the negative economic impact of illness to the society.[7] It is essential to understand the economic impact of cervical cancer on patients, which will give a clear snapshot of the expenses incurred, loss of wages for treatment and the financial coping mechanisms used by cervical cancer patients. This will aid in developing and implementing sound public health policies as well as it could enable expend of public and private funds on health projects especially in relation to cervical cancer to be carried out more rationally.

II. Materials And Methods

This was a Cross-sectional study which was conducted among cervical cancer patients undergoing treatment in the past one year and attending outpatient and inpatient services in Kidwai Memo Memorial Institute of Oncology, Regional Cancer Centre, and Bengaluru. A total of 200 sample was derived using the formula $n=z^2_{(1-\alpha/2)}\ p\ q/d^2$ (i.e. α = Confidence level 95%, P = Prevalence of cervical cancer (15.2%) where prevalence was used as per International Association of Cancer Registries, cancer incidence in five continents volume X [4],q= (1-Ps) and d = 5% level of precision). Non-probability sampling technique was used for this study. The semi structured face to face interview schedule was administered to the participants and the content of the questionnaire was developed by using the information from the literature. Similarly, in order to ensure the validity of the tool pilot testing of the tool was conducted among eight respondents in the similar study setting prior conducting the original study. One trained interviewer along with the investigator interviewed the cervical cancer subjects after administering informed consent. Questionnaire was checked at the end of every interview whether all the related information was completely filled or not. Histological confirmed and clinically staged cervical cancer patients, who had undergone any of the intensive treatment modalities (surgery, chemotherapy, radiotherapy) in the past one year and attending outpatient and inpatient services at Regional Cancer Centre, Bengaluru between Jan-Feb 2017 were included in the study. The purpose of the study was explained and informed written consent was taken from participants before starting the interview. Ethical clearance was issued from the Institutional Ethics Committee (IEC), K.S Hegde Medical Academy, Nitte University and permission was taken from the regional cancer centre, Bengaluru prior conducting the study. Statistical Package for Social Sciences (SPSS) version-16 was used to analyse the data. It was summarised using descriptive statistics such as frequency, percentage, mean, standard deviation (S.D), and median and inter-quartile range (IQR) and for continuous variables, the data was found to be right skewed and hence non-parametric tests were used. Kruskal Wallis test was used to determine the statistical significance difference in means for those variables which had more than two independent groups. Mann-Whitney test was used to determine statistical significance differences in means for those variables which had only two independent groups.

III. Results

Socio-demographic and socio-economic characteristics

A total of 200 cervical cancer patient participated in the study. As illustrated in table 1 the respondents between 40-50 years age group were 68 (34%) and only 17% (34) of the respondents were between <40 years age group. Most of the respondents (67%) reported that they were from rural area and more than three fourth of the respondents reported that they were from Hindu religion (79%). The majority (67%) were from the rural area and more than three fourth of the respondents reported that follow Hindu religion (79%). In addition, more than half (69%) were married more than three fourth of the respondents (77.5%) reported that they were parous. Data on education status reported that more than half of the respondents (60%) had non-formal education. Similarly, more than half of the respondents (59.5%) reported that they were unskilled worker followed by homemaker (36%). The household monthly income had been divided into three equal parts (<□9000, □9000-14500, >□14500) according to the income, where 40% (80) of the respondents reported that they had <□9000 household monthly income. Table 1 shows the socio-demographic and socio-economic characteristics of respondents.

Table 1: Socio-demographic characteristics of respondents

Socio-demographic variables (n=200)	Frequency (%)
Age Group (years)	
<40	34(17)
40-50	68(34)
50-60	52(26)
>60	46(23)
Place of Residence	
Urban	66(33)
Rural	134(67)
Religion	
Hindu	158(79)
Muslim	36(18)
Christian	6(3)
Marital Status	
Married	138(69)
Separated	23(11.5)
Divorced	1(0.5)
Widowed	38(19)
Parity Status	
Parous (1-4)	155(77.5)
Grand multiparous (>4)	45(22.5)
Educational Status	
Non - formal education	120(60)
Less than 5th standard	18(9)
5th standard completed	36(18)
10th standard completed	20(10)
PUC completed	5(2.5)
Under graduate	1(0.5)
Occupation	
Homemaker	72(36)
Unskilled worker	119(59.5)
Skilled worker	7(3.5)
Professional	2(1)
Household Monthly Income (□)	
<9000	80(40)
9000-14500	54(27)
>14500	66(33)

Health Insurance

Majority of the respondents (73.5%) had health insurance. Figure 1 shows the distribution of respondents based on respondents who had health insurance.

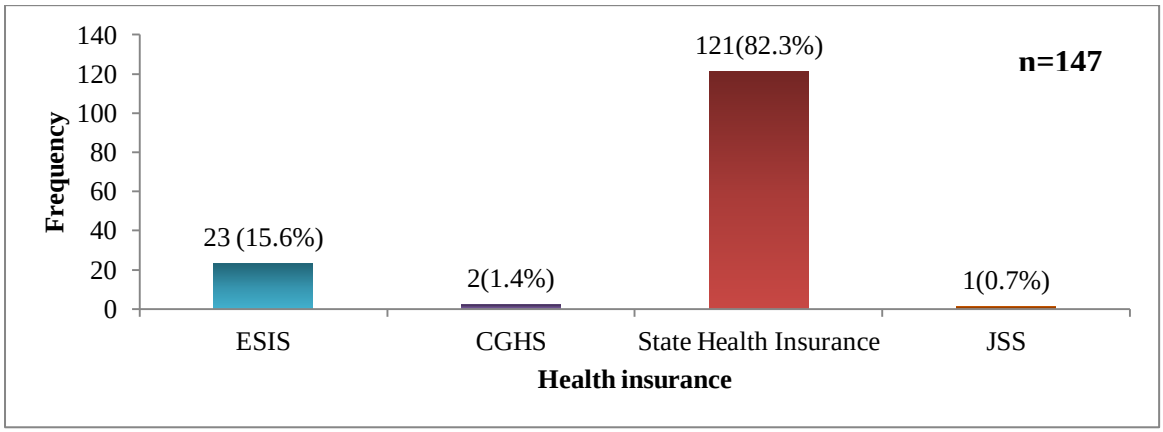

Figure 1 : Health Insurance

Direct cost of cervical cancer patient

The OOP expenditure for medical cost (mean; □84,391.20, median; □85000) in both OPD and IPD takes largest share in direct cost than non-medical cost (mean; □7,420.15, median; □7300). The average direct cost incurred by the respondents for both outpatient department (OPD) and inpatient department (IPD) visits were □91,811.35 (median= □93850). Table 2 describes the OOP expenditure for direct cost of the respondents for both OPD and IPD visits.

Table 2: Direct cost (□) of the respondents for both OPD and IPD (n=200)

OOP expenditure	Mean	Median	S.D.	Min	Max	IQR
Medical costs	84,391.20	85,000	56,071.40	3000	2,43,000	37350-115000
Non-medical costs	7,420.15	7,300	3,830.30	500	22,800	4500-9400
Direct costs	91,811.35	93,850	58,178.51	5600	2,50,700	43400-123600

Indirect cost of cervical cancer patient

Productivity loss of patient's companion (mean; □23,581.42, median; □15000) takes largest share in indirect cost for both OPD and IPD visits followed by expenditure of patient's companion (mean; □ 9,527.53, median □ 9055) and productivity loss of patient (mean; □6,128.83, median; □5150). The average indirect cost incurred by the respondents for both outpatient department (OPD) and inpatient department (IPD) visits were □39,237.78 (median= □33,541.67). Table 3 describes the OOP expenditure for indirect cost of the respondents for both OPD and IPD visits.

Table 3: Indirect cost (□) of the respondents for OPD and IPD visits (n=200)

OOP expenditure	Mean	Median	S. D.	Min	Max	IQR
Productivity loss of patient	6,128.83	5,150	6,485.90	0	28,000	0-9375
Productivity loss of patient's companions	23,581.4	15,000	22,174.6	0	97,000	6658.3-40250
Expenditure of Patient's companions	9,527.53	9,055	5,165.39	600	30,000	5835-12225
Indirect Cost	39,237.8	33,541.7	24,614.2	2100	116,600	19026.7-56325

Catastrophic health expenditure (CHE)

It was found that the majority of the respondents (98%) had catastrophic health expenditure and only 2% of the respondents were not having catastrophic health expenditure. Figure 2 shows the distribution of respondents based on catastrophic health expenditure.

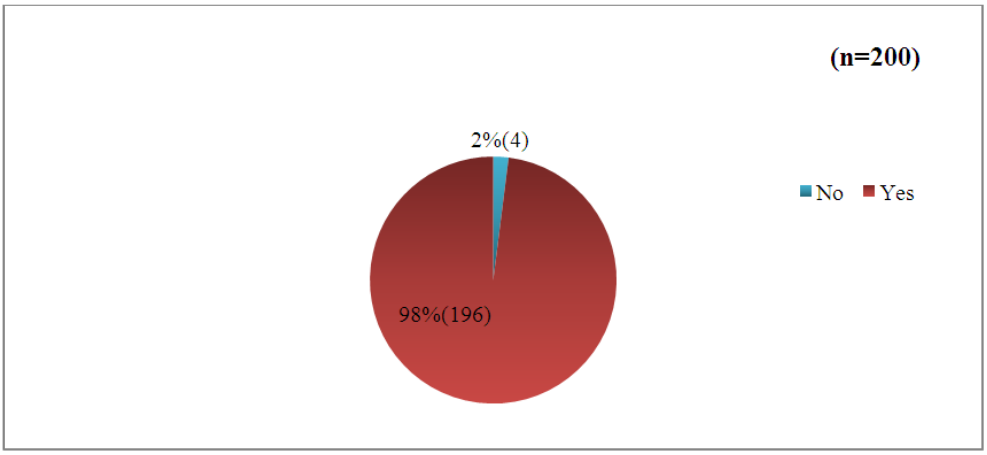

Figure 2: Catastrophic Health Expenditure

Direct cost and its predictors

To determine the relationship between medical cost and its predictors Kruskal Wallis test or Mann Whitney U test were computed accordingly. It was found that there was statistically significant difference in medical cost according to place of residence (p=0.023), religion (p=0.006), marital status (p=0.001), education status (p=0.031), occupation (P<0.001), household monthly income (p<0.001), current cancer stage (p<0.001), type of facility (p<0.001) and health insurance (p=0.001). Table 4 describes the relationship between medical cost and its predictors.

Table 4: Direct cost and its predictors

	Medical Cost (□)				
Variables	**Mean**	**S.D.**	**Median**	**IQR**	**Statistical Test**
Age-group (years)					
<40	83764.71	66070.38	68500	42500-97000	
40-49	86443.24	43599.32	91500	56250-109250	Kruskal Wallis
50-59	86544.23	54039.64	92500	45000-119000	P=0.378
60+	79386.96	67266.16	53500	23750-130500	
Place of Residence					
Urban	95815.76	54131.3	92500	53000-135750	Mann-Whitney U
Rural	78764.18	56351.16	76500	30375-105000	P=0.023*
Religion					
Hindu	78264.81	55602.15	71500	30375-106250	Kruskal Wallis
Muslim	110861.1	54970.87	98750	71000-141750	P=0.006*
Christian	86900	25767.81	92500	74100-101500	
Marital status					
Married	92006.81	56720.99	92050	45000-122625	
Separated	90373.91	62938.91	86000	31000-106000	Kruskal Wallis
Divorced	9000	9000	9000	9000	P=0.001*
Widowed	55097.37	36988.29	54000	22000-83500	
Parity Status					
Parous	81901.55	53865.82	86000	41000-110000	Mann-Whitney U
Grand multiparous	92966.67	62984.54	82000	35000-134000	P=0.39
Education status					
No formal education	73793.67	50303.97	71500	25625-105000	
Less than 5th Standard	107350	53578.34	100000	81750-122625	
5th standard completed	97213.89	66993.7	89500	45000-162500	Kruskal Wallis
10th standard completed	93780	52871.19	89750	60750-115000	P=0.031*
PUC completed	135400	70280.15	110000	80000-203500	
Under graduate	38400	38400	38400	38400	
Occupation					
Homemaker	115581.9	60707.22	113000	71250-153250	
Unskilled worker	66734.79	44615.56	63000	26000-93000	Kruskal Wallis
Skilled worker	73357.14	55588.3	63000	14500-110000	P<0.001*
Professional	50700	17394.83	50700	38400-63000	
Household monthly income					
<□9000	56039.25	42849.81	51500	17500-89875	Kruskal Wallis
□9000-14500	88922.22	49858.56	87500	48500-119875	P<0.001*
>□14500	115050	58362.09	106000	87500-145250	

Cancer Stage					
Stage II	67053.58	55407.49	60500	17000-96000	Kruskal Wallis P<0.001*
Stage III	96003.85	54239.37	92550	50000-133500	
Stage IV	97500	50771.9	95000	52500-138000	
Type of Facility					
Public	38984.44	39470.96	23500	12250-54375	Mann-Whitney U P<0.001*
Public & Private	94358.54	54300.34	91500	54000-121500	
Health Insurance					
No	105315.1	54864.81	105000	66500-139500	Mann-Whitney U P=0.001*
Yes	76847.21	54744.6	70000	30000-103000	

(* indicates significant at 5% level of significance)

Indirect cost and its predictors

To determine the relationship between expenditure of patient's companion and its predictors Kruskal Wallis test or Mann Whitney U test were computed accordingly. It was found that there was statistically significant difference in indirect cost according to residence (p<0.001), religion (p<0.001), marital status (p<0.001), occupation (p<0.001), household monthly income (p<0.001), current cancer stage (p=0.001), facility (p<0.001) and health insurance (p<0.001). Table 5 shows the relationship between the indirect cost and its predictors.

Table 5: Indirect cost and its predictors

	Indirect cost (□)				
Variables	**Mean**	**S. D.**	**Median**	**IQR**	**Statistical Test**
Age-group (years)					
<40	38175.6	22154.7	36558.3	19701.67-55575	Kruskal Wallis P=0.352
40-49	42220.7	22752.9	38346.7	24357.5-61200	
50-59	37962.4	25132.9	32200	16367.5-55212.5	
60+	37055	28488.3	25966.7	14700-58600	
Place of Residence					
Urban	50348.8	29490.6	52700	20925-71283.33	Mann-Whitney U P<0.001*
Rural	33765.2	19749.3	29550	16845-47987.5	
Religion					
Hindu	35340.5	22627.0	29850.8	16727.5-49662.5	Kruskal Wallis P<0.001*
Muslim	54456.9	27594.5	56241.7	26025-71037.5	
Christian	50550	20139.6	56666.7	34016.67-66625	
Marital status					
Married	41902.7	24451.5	39246.7	21092.5-61041.67	Kruskal Wallis P<0.001*
Separated	44748.7	22315.7	41500	27160-61633.33	
Divorced	4950	4950	4950	4950	
Widowed	27126.5	22823.1	19891.7	15860-30958.33	
Parity Status					
Parous	38440.4	23545.1	35000	19000-55200	Mann-Whitney U P=0.66
Grand multiparous	41984.4	28104.8	30100	18711.67-60916.67	
Education status					
No formal education	37418.5	25001.7	30100	16305-54637.5	Kruskal Wallis P=0.319
Less than 5th Standard	43137.8	15380.0	42250	34825-53791.67	
5th standard completed	39455.7	24918.9	32880	19380-63225	
10th standard completed	44827.5	29256.8	48916.7	18941.67-65366.67	
PUC completed	49726.7	20862.6	51966.7	28816.67-69516.67	
Under graduate	15266.7	15266.7	15266.7	15266.67	
Occupation					
Homemaker	54889.2	27977.4	60916.7	28450-72341.67	Kruskal Wallis P<0.001*
Unskilled worker	29887.7	16766.4	25500	16000-40700	
Skilled worker	42528.6	22182.5	38500	26700-63966.67	
Professional	20600	7542.47	20600	15266.67-25933.33	
Household monthly income					
<□9000	25493.4	15042.7	21261.7	14425-36357.5	Kruskal Wallis P<0.001*
□9000-14500	37251.3	20832.9	31833.3	22125-50666.67	
>□14500	57522.9	25508.6	60916.7	39866.67-72175	
Cancer Stage					
Stage II	31658.7	22364.2	26400	14600-47775	Kruskal Wallis P=0.001*
Stage III	43983.7	24859.7	38500	22125-62383.33	
Stage IV	47260	25267.9	47400	25466.67-66333.33	
Type of Facility					
Public	24314.5	19531.2	16310	12788.33-34325	Mann-Whitney U P<0.001*
Public & Private	42513.6	24449.5	36950	22591.67-61258.33	
Health Insurance					
No	51521.5	29283.9	56833.3	22098.33-71733.33	Mann-Whitney U P<0.001*
Yes	34809	21115.1	30100	17133.33-47933.33	

(* indicates significant at 5% level of significance)

Financial coping mechanisms to cover the expenditure

The respondents had used multiple mechanisms to cope with the expenditure due to healthcare. More than half of the respondents had borrowed from formal source (61%), almost half of the respondents had borrowed from informal source (49.5%), 20.4% of the respondents had managed with savings, 14% of the respondents had managed with their earnings and 5% of the respondents had to sell their assets to cope with the expenditure. Half of the respondents (51%) reported compromising on other essential expenditure. The respondents who had compromised on other essential expenditure had to compromise on multiple essential expenditures where more than three fourth (91%) of them had to compromise on social obligation followed by children education (41.6%) and another member's treatment (14.9%).

More than half of the respondents planned to arrange money for further treatment and hospitalization through earnings (59%) followed by earnings and borrowing (20.5%), borrowing (7.5%), savings and earnings (7%), earnings and health insurance (4%), savings and health insurance (1%), health insurance and borrowing (0.5%) and savings (0.5%). Table 6 shows the mechanisms adopted by households to cope with the expenditure.

Table 6: Mechanisms adopted by households to cope with the expenditure

Variables	Frequency (%)
Coping mechanisms so far to cover the expenditure (n=200)	
Savings	41(20.4)
Earnings	28(14)
Borrowing from formal source	122(61)
Borrowing from informal source	99(49.5)
Selling assets	10(5)
Compromising on other essential expenditure (n=200)	
No	98(49)
Yes	102(51)
Compromising on other essential expenditure (n=102)	
Children education	42(41.6)
Another member treatment	15(14.9)
Social obligation	93(91.2)
Future plan to arrange money for treatment/hospitalization (n=200)	
Borrowing	15(7.5)
Earnings	118(59)
Earnings and Borrowing	41(20.5)
Earnings and Health insurance	8(4)
Health insurance and Borrowing	1(0.5)
Savings	1(0.5)
Savings and Earnings	14(7)
Savings and Health insurance	2(1)

IV. Discussion

This cross-sectional study revealed key findings related to the financial aspect of cervical cancer. The average direct costs (□91,811.35 or $1422.45) accounted for the largest share when compared with the indirect cost (□39,237.78 or $607.92) in the present study. Similar results were found in studies from Ethiopia and Tanzania reported that the average direct cost ($208.76, $1 = 22.7 ETB as on 21st April 2017), ($ 1878.74) accounted for largest share when compared with average indirect cost ($36.19), ($513.24).[7][8] Whereas it was contradictory to the results found in a study from Ghana, it reported that the indirect cost ($937.16) had the largest share when compared with the direct cost ($492.92, $1 = GHS 4.20 as on 20th April 2017).[9] It could be because of either difference in cost of treatment and social support mechanisms between the two countries or different economic calculation adopted by different studies. The average medical cost accounted to □84391.2 ($1307.49), which has the largest share of the total expenditure, similar results were reported in the medical expenditure panel survey, USA that the average medical cost had the largest share of the economic burden among cancer survivors.[10]

The average age of the respondents were 50.86 years which is a menopausal age, most of the respondents were from rural area (67%), married (69%) with less family monthly income (40%), no formal education (60%), unskilled worker (59.5%). These characteristics were consistent in other studies.[11][12][13] Similarly, in this study the respondents' stages were only of stage II, III and IV. There were no respondents of stage I, it could be either because of delay in reporting to the hospital or could have been treated in other hospitals and referred to this regional cancer centre as the stage progressed. In the present study, most of the respondents (82%) had state health insurance which indicates that public facility attracts more patients belonging to below poverty line due to provision of affordable facilities

Majority of the respondents (98%) had catastrophic health expenditure in the present study which is consistent with other studies from India and USA where they reported 84% and 42% of the respondents had catastrophic health expenditure respectively.(6)(14) In the present study, respondents used more than one

strategy to cope with costs, more than half (61%) of them borrowed from formal source, followed by borrowing from informal source (49.5%) and selling assets (5%). These characteristics were consistent in other studies from India and USA, where borrowing (84.6%, 42%respectively) was the major strategy used to cope with the costs.(6)(14)The findings of this study reflected that the respondents had to compromise on other essential expenditure where social obligation was the most common followed by children education and other member's treatment. The results were slightly different in the study from Argentina which reported that most of the respondents had to compromise in paying essential services like electricity, telephone etc. followed by reduction in the daily amount of food consumed and missed schooldays by children of the respondents.[(11)] It could be due to wide cultural and health system diversity across the world.

V. Conclusion

This study is the pioneer to estimate both the direct and indirect costs associated with cervical cancer in Karnataka. It has found that cervical cancer creates an immense economic burden on patient and their families. Despite having health insurance and Janaushadhi stores many of the respondents reported paying significant amounts as OOP expenditure. Additionally, a large share of respondents had state health insurance which is a positive note, but majority of the respondents had catastrophic health expenditure and many households still had to resort to the borrowing to cope with expenditure. This may lead to increased risk of non-compliance to treatment. Hence, more supportive public health policies and more social security measures to deal with non-medical cost and indirect expenditure should be implemented in order to ease the burden on the households.

Acknowledgement

We would like to express our sincere gratitude to Mrs. Priyanka Rent, Department of Public Health, K.S Hegde Medical Academy, Dr. Sudeep Kumar, Mr. Mackwin D'Mello, Dr. Jagannath.P, Dr. Janet Parameshwar, Prof. Dr. Satheesh Kumar Bhandary, Dr. Sanal T.S, Dr. Lokesh for their valuable time, guidance and inputs throughout the study as well as we are grateful to all our family members and friends for theirs support during the whole process of study.

ABBREVIATIONS

CGHS: Central Government Health Scheme; ESIS: Employee State Insurance Scheme; JSS: Jyothi Sanjeevini Scheme; ETB: Ethiopian Birr; GHS: Ghanian Cedi

AVAILABILITY OF DATA AND MATERIALS

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

COMPETING INTERESTS

The authors have no competing interests to disclose.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

REFERENCE

[1] Cancer [Internet]. [cited 2021 Sep 2]. Available from: https://www.who.int/news-room/fact-sheets/detail/cancer
[2]. Cervical cancer [Internet]. [cited 2021 Sep 2]. Available from: https://www.who.int/health-topics/cervical-cancer#tab=tab_1
[3]. Human Papillomavirus and Related Diseases Report INDIA. [cited 2021 Sep 2]; Available from: www.hpvcentre.net
[4]. Forman D, Bray F, Brewster DH, Gombe Mbalawa C, Kohler B, Piñeros M, et al. Cancer Incidence in Five Continents Vol. X. Cancer Incid Five Cont [Internet]. [cited 2021 Sep 2]; Available from: http://www.iacr.com.fr/.
[5]. Financial toxicity: A growing burden for cancer patients | The Bulletin [Internet]. [cited 2021 Sep 2]. Available from: https://bulletin.facs.org/2019/09/financial-toxicity-a-growing-burden-for-cancer-patients/
[6]. Jain M, Mukherjee K. Economic burden of breast cancer to the households in Punjab, India. 2016 [cited 2021 Sep 2]; Available from: www.ijmedph.org
[7]. Hailu A, Mariam DH. Patient side cost and its predictors for cervical cancer in Ethiopia: a cross sectional hospital based study. BMC Cancer 2013 131 [Internet]. 2013 Feb 8 [cited 2021 Sep 3];13(1):1–8. Available from: https://bmccancer.biomedcentral.com/articles/10.1186/1471-2407-13-69
[8]. Chuwa HR. Cancer Therapy Estimating the total cost of cancer management: A descriptive prospective Cohort study among patients with cervical cancer at Ocean Road Cancer Institute, Dar es Salaam, Tanzania. J Cancer Sci Ther [Internet]. 2015 [cited 2021 Sep 3];1948–5956. Available from: http://dx.doi.org/10.4172/1948-5956.C1.057
[9]. Ahiabor G. Title of Paper: ECONOMIC COST OF BREAST CANCER IN GHANA: THE KOMFO ANOKYE TEACHING HOSPITAL EXPERIENCE [Internet]. [cited 2021 Sep 3]. Available from: https://www.academia.edu/8208084/Title_of_Paper_ECONOMIC_COST_OF_BREAST_CANCER_IN_GHANA_THE_KOMFO_ANOKYE_TEACHING_HOSPITAL_EXPERIENCE
[10]. Guy GP, Jr, Ekwueme DU, Yabroff KR, Dowling EC, Li C, et al. Economic Burden of Cancer Survivorship Among Adults in the United States. J Clin Oncol [Internet]. 2013 Oct 20 [cited 2021 Sep 3];31(30):3749. Available from: /pmc/articles/PMC3795887/
[11]. S A, E M, N Z, B R, R S, M P. The socio-economic impact of cervical cancer on patients and their families in Argentina, and its influence on radiotherapy compliance. Results from a cross-sectional study. Gynecol Oncol [Internet]. 2007 May [cited 2021 Sep 3];105(2):335–40. Available from: https://pubmed.ncbi.nlm.nih.gov/17258801/
[12]. PELZER A, DUNCAN ME, TIBAUX G, MEHARI L. A Study of Cervical Cancer In Ethiopian Women. Cytopathology.

1992;3(3):139–48.
[13]. South K, Pervez ; Y, Kayani S, Afif N, Tahir M, Nazir I, et al. Time trends in the incidence of cancer cervix in Karachi South, 1995-2002. Asian Pac J Cancer Prev [Internet]. 1995 [cited 2021 Sep 3];9(3):533–9. Available from: http://ecommons.aku.edu/pakistan_fhs_mc_pathol_microbiol/196
[14]. Jain M, Mukherjee K. Economic burden of breast cancer to the households in Punjab, India. 2016 [cited 2021 Sep 3]; Available from: www.ijmedph.org
[15]. Zafar SY, Peppercorn JM, Schrag D, Taylor DH, Goetzinger AM, Zhong X, et al. The Financial Toxicity of Cancer Treatment: A Pilot Study Assessing Out-of-Pocket Expenses and the Insured Cancer Patient's Experience. Oncologist [Internet]. 2013 Apr [cited 2021 Sep 3];18(4):381. Available from: /pmc/articles/PMC3639525/

V. Monisha, et. al. "Financial Impact of Cervical Cancer on Patients Being Treated at Regional Cancer Centre, Bengaluru." *IOSR Journal of Nursing and Health Science (IOSR-JNHS)*, 10(05), 2021, pp. 01-09.