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Awareness of cancer risk factors among patients and attendants presenting to a Tertiary Care Hospital in Karachi, Pakistan

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Abstract

Objective: To determine awareness of cancer risk factors in the patients and attendants of Out-patient Clinics at a University Hospital in Karachi, Pakistan.

Methods: A cross-sectional survey was conducted on 315 respondents reporting to a tertiary care hospital in Karachi, Pakistan, to assess their level of awareness regarding risk factors of cancer.

Results: The respondents belonged to an urban population with the mean time spent in Karachi of 29.1 years (SD ±13.94). There were 213 (67%) males and 102 (33%) females. All respondents had heard of the word 'cancer', while only 57.5% were aware of cancer risk factors. However, only 42.8% could identify age, 33% diet, 35% drugs and 31% obesity as risk factors for cancer. Even those who were aware of the risk factors were not able to appreciate personal risk of cancer.

Conclusion: Despite awareness regarding some of the risk factors, the surveyed population was not aware of intrinsic risk factors for cancers like increasing age and obesity. It is important to create awareness through educational programs on cancer prevention, dissemination of knowledge pertaining to the preventable and avoidable cancer risk factors, the benefits of early diagnosis, and availability of screening tests.

Introduction

It is estimated that by 2020, cancer will kill more than 10 million people per year worldwide, with 7 million of those deaths occurring in countries that can least afford health care[1]. However, it is worthwhile mentioning that a greater proportion of cancer deaths in the developing nations are preventable compared to the Western world[1].

Pakistan is a developing country of Asia with a weak database of the health system. Isolated city-wide cancer registries which report cancer incidence and prevalence within the population, exist in Pakistan. The population-based cancer registry in Karachi has reported a high prevalence of cancers of lung, oral cavity and breast in the population[2]. Furthermore, WHO estimated annual mortality from cancers in Pakistan to be approxiamtely 80,000[3]. The Karachi Cancer registry reported 138343 (50.6%) incident cancer cases for males and 135054 (49.4%) for females[2]. The actual incidence, however, is not known due to inaccessibility to health care as well as a presumed low prevalence of awareness, and it may well be more than reported. Lack of population awareness about cancer screening and prevention is one of the most important factors contributing to large number of cases in late stages. Worldwide, between 1990 and 2001 mortality rates from all cancers has fallen by 17% in those aged 30-69 years and rose by 0.4% in people more than 70 years[4,5].

Evidence of reductions in either incidence of or morbidity and mortality from cancers exists worldwide, but more so in the developed nations. In the United States, age-adjusted death rates for all cancers combined fell slightly in the 1990s (on average 1.5% per year in men and 0.6% per year in women between 1992 and 1999)[6]. The fall in overall cancer mortality in men was mainly a result of reductions in

mortality from lung, prostate, and colorectal cancers[6]. In women, mortality due to lung cancer increased in the 1990s, but there was a decrease in death rates from breast and colorectal cancers[6].

Therapeutic interventions have had less success in reducing deaths from most cancers even in the developed countries of the world. Treatment has been effective for some cancers in children and young adults; some examples being leukaemia and testicular cancer[7,8]. However, five year survival rates remain relatively low for lung, oesophageal, liver, stomach, and pancreatic cancers (all<25%)[7].

Although a combination of screening and treatment is increasingly effective in reducing mortality from some cancers, limitations in the availability of clinical interventions for other cancers, and in access to and use of existing technologies, clearly constrain the effects of treatment on population trends in cancer mortality, even in developed countries. As such, primary prevention through lifestyle and environmental interventions might offer the best option for reducing the large and increasing burden of cancers worldwide. Policies and programmes to implement such interventions depend on reliable and comparable analyses of the effect of risk factors for cancer at the population level.

The objective of this study was to determine awareness of cancer risk factors among patients and accompanying persons attending Community Health Clinics (CHC) and Consulting Clinics (CC) at a tertiary care University Hospital in Karachi, Pakistan.

Subjects and Methods

A survey was conducted on 315 respondents, all residents of Karachi, to assess their level of awareness regarding cancer risk factors. These subjects presented to the Consulting Clinics (CC) or the Community Health Centre (CHC), at a tertiary care hospital for regular checkups or other illnesses.

This cross-sectional survey was carried out by the Aga Khan University Hospital Medical students during the month of July, 2005. The subjects were interviewed using convenience sampling in the waiting areas of the hospital. Respondents who were permanent residents of Karachi, provided informed consent and completed the questionnaire were included. Questionnaires containing incomplete, missing or erroneous data were discarded.

The study samples were divided into two groups, one group representing respondents presenting to the Out-patient Department (OPD) at the low cost CHC and the other representing those patients and their attendants who presented to the Out-patient Department at the more costly CC.

The questionnaire comprised of demographic parameters, questions concerning the subjects' family history of cancer, the subjects' awareness of cancers, their familial nature, and whether they believed population awareness about cancer was adequate. Questions also probed whether cancer is getting enough media coverage, cancers are preventable, early diagnosis gives a better prognosis and were they aware of cancer screening. Lastly, risk factors for cancers were asked, and for each of them, the subject was asked whether he/she knew of its potential to cause cancer, and whether the subject has been exposed to it. These included tobacco related risk factors; diseases for example Hepatitis B and C, gallstones, peptic ulcers; lifestyle risks for example age diet and obesity; and other factors such as alcohol, ultraviolet rays, chest X-rays, drugs and insecticides.

The questionnaire was primarily designed in English but was read out and translated into Urdu (the local spoken language) by the interviewer. Written consent was taken before administering the questionnaire and the identity of all the participants was kept confidential. The questionnaire was discussed amongst the interviewers and the supervising faculty after the pilot study to ensure uniformity.

Data was double-entered on Epi-data 3.1 and the analysis was performed using SPSS (Statistical Package for Social Sciences Inc. Chicago, IL), version 14.0

Results

A total of 315 persons were interviewed, 148 (47%) from the Community Health Centre Clinics and 167 (53%) from the Consulting Clinics. There were 213 (67%) males and 102 females (33%). Only 123 (39%) participants were patients while 192 (61%) were attendants.

The mean age of the respondents was 33.8 ± 12.46 years, the maximum age of females being interviewed was 60 years; compared to 75 in males; the minimum age was 13 years. There was a marginal variation in the mean age of respondents from the financially limited CHC and the financially affluent CC groups as shown in Table 1.

This was a largely urban population with the mean time spent in Karachi being 29.1 ± 13.94 years for all respondents. More than half the respondents were college graduates (all respondents 51.3%; CHC 45.6%; CC 56.5%), married (all respondents 66.2%; CHC 57.1%; CC 74.4%), mostly Muslims (all respondents 97.1%; CHC 97.2%; CC 97.0%) and predominantly Urdu speaking (all respondents 52.7%; CHC 50.4%; CC 55.1%). Demographic differences were evident among the two groups. Consulting clinic group comprised of more educated people (91.7% matric or above vs 81% in CHC group; p=0.06).

The respondents were either in the hospital for

Table 1: Basic Demographic Characteristics.

	TOTAL	CHC mean (SD)	CC mean (SD)
Mean Age	33.8 (SD 12.46)	32.5 (11.78)	34.8 (12.98)
Mean time spent in Karachi	29.1 (SD 13.94)	27.6 (13.8)	30.5 (13.9)
	n (%)	**n (%)**	**n (%)**
Sex			
Males	213 (67.6)	100 (67.6)	113 (67.7)
Females	102 (32.4)	48 (32.4)	54 (32.3)
Ethnicity			
Sindhi	36 (12.1)	18 (12.4)	18 (11.3)
Punjabi	31 (10.4)	15 (10.3)	16 (10)
Pathan	15 (5.0)	4 (2.8)	11 (6.9)
Baluchi	9 (3.0)	3 (2.1)	6 (3.8)
Urdu speaking	214 (69.5)	106 (49.7)	108 (53.8)
Education (%)			
Nil	15 (4.8)	11 (7.4)	4 (2.4)
Primary	27 (8.6)	17 (11.5)	10 (6)
Matric	47 (15.0)	23 (15.5)	24 (14.4)
Intermediate	64 (20.4)	29 (19.6)	35 (21)
College/Graduation	162 (51.3)	68 (45.9)	94 (56.3)
Religion (%)			
Muslim	306 (97.1)	144 (97.2)	162 (97)
Christian	1 (1.0)	2 (1.4)	1 (0.6)
Hindu	3 (1.9)	2 (1.4)	4 (2.4)
Marital Status (%)			
Unmarried	102 (32.5)	62 (41.9)	40 (24)
Married	208 (66.2)	84 (56.8)	124 (74.3)
Widowed	5 (1.3)	2 (1.4)	3 (1.8)

routine checkup or for an acute illness, or were attendants accompanying the patients; only a fifth (20%) of the respondents suffered from any chronic illness. All respondents had heard of the word cancer. A family history of cancer was present in a third of the cases (34.9%) while 48.9% were aware of the familial risks. Among those who had a relative diagnosed with cancer, only 52 (47.3%) could appreciate familial pattern for some cancers. A fifth of the respondents (18.8%) felt that there was an adequate population awareness of cancer risk factors. A large number (72.6%) thought that cancer was a preventable disease, though public education and media coverage were insufficient (67%). Nearly all respondents (91.7%) were aware that early diagnosis of cancer could improve prognosis, while only a third (24.8%) were aware that screening was available for the early detection of selective malignancies.

More than half of the respondents (57.5%) were aware of environmental preventable risk factors as carcinogens with the highest awareness for tobacco smoking (92.6%), tobacco-chewing (90.3%), passive smoking (84.5%), and areca nut (92.6%). Among the surveyed population, 20.5% were exposed to passive smoking, 17.9% have been using areca nut and 12.7% tobacco for a long time. Least awareness was determined to be related to obesity as a risk factor for cancer (31%). Moreover, on applying chi square, no association was found between respondents who were aware and were exposed to a particular carcinogen as shown in Table 2.

Table 2: Exposure and Awareness of Risk Factors

Risk Factors	Awareness (%)	Exposure (%)	P -values
Areca	92.6	17.9	0.27
Aspergillus	66.2	5.3	0.90
Tobacco-chewing	90.3	4.9	0.70
Tobacco-smoking	92.6	12.7	0.21
Tobacco-passive smoking	84.5	20.5	0.70
Naswar	64.1	2.6	0.51
Alcohol	68.0	3.3	0.22
UV rays	47.8	1.3	0.47
Chest X-rays	51.8	3.6	0.84
Hepatitis B/C	45.6	1.6	0.25
Gall stones	36.4	1.4	0.56
Peptic Ulcers/H.Pylori*	57.7	2.1	0.30
Drugs	35.0	1.0	0.96
Insecticides	38.7	1.6	0.28
Age	42.8	--	
Diet	33.0	--	
Obesity	31.0	--	

*H. Pylori - Helicobacter Pylori

On further analysis to assess the awareness regarding the risk factors of cancer among the two groups, CC and CHC, significant association was found only related to Hepatitis B and C (p value: 0.03) as shown in Table 3.

Table 3: Comparison between CC and CHC groups regarding cancer risk factors.

Risk Factors	CHC n (%)	CC n (%)	P -values
Areca	133 (93.0)	153 (92.2)	0.78
Aspergillus	87 (66.9)	89 (65.4)	0.79
Tobacco-chewing	128 (89.5)	151 (91)	0.67
Tobacco-smoking	130 (90.9)	156 (94)	0.67
Tobacco-passive smoking	119 (83.2)	142 (85.5)	0.57
Naswar	90 (62.9)	108 (65.1)	0.70
Alcohol	97 (67.8)	113 (68.1)	0.96
UV rays	71 (50.7)	71 (45.2)	0.34
Chest X-rays	82 (57.3)	78 (47.0)	0.07
Hepatitis B/C	75 (52.4)	66 (39.8)	0.03
Gall stones	54 (38.6)	54 (34.4)	0.46
Peptic Ulcers/H.Pylori*	67 (59.3)	72 (56.3)	0.63
Drugs	51 (36.4)	53 (33.8)	0.63
Insecticides	54 (38.6)	61 (38.9)	0.96
Age	55 (39.3)	72 (45.9)	0.25
Diet	45 (32.1)	53 (33.8)	0.77
Obesity	49 (35.0)	43 (27.4)	0.16

*H. Pylori - Helicobacter Pylori

Discussion

The findings of the present study indicated that all respondents had heard of the word 'cancer'; but a great majority of the respondents were unaware of its risks. Surani et al have identified South Asian population as being in need of campaigns targeted at prevention and control through awareness[9]. Furthermore, those aware of the risk factors in the studied sample did not translate this into appreciation of personal risk. An earlier study conducted in Pakistan also concluded that interventions to create awareness and implement self screening tests was useful[10].

Among the respondents who knew about a person with cancer in their family could not recognize this as a risk factor. Contrary to this, Mouchawar J et al revealed considerably good knowledge scores among women enrolled in a mammography program at Denver, Colorado, where, having a mother or sister with breast cancer was reported as being extremely or very important by nearly all respondents, regardless of family history[11].

The likelihood of cure from cancer is usually dependent on the stage of disease at diagnosis. Some patients attend their general practitioner with a long preceding history of cancer symptoms. This might be due in part to a lack of recognition of the seriousness of the symptoms, while many cancers could be identified on routine check-ups. In this study, a large number of respondents were aware of benefits of early cancer diagnosis, which is comparable to a cross-sectional study in UK indicating 91.7% females were of the opinion that cancer can be treated if detected early[12].

Primary prevention through lifestyle and environmental interventions remain the main strategy to reduce the burden of cancers, but there is limited awareness about such preventive practices. Two-thirds of the respondents were aware of the fact that cancer is a preventable disease, while the overall knowledge of cancer screening was poor. Though aware of the benefits of early diagnosis, only one-fourth of the respondents were able to identify screening as an available option for diagnosing cancer. This is in sharp contrast to the awareness of the need of cancer screening in developed countries[13].

The World Cancer report has summarized the effects of risk factors on cancer incidence and mortality[14]. Most of the studies conducted are restricted either to one risk factor, one site of cancer, or one population[15-18]. Pisani and colleagues estimated cancers attributable to selected infectious agents to be about 16%[19]. Parkin and colleagues revealed variations in the risk of different cancers by geographic area mostly attributable to known or suspected risk factors related to lifestyle or environment[20]. A pilot survey by Ray K and Mandal S in West Bengal reported a 44.7% awareness of the major risk factors (like smoking and tobacco chewing)[21]. The current study sample also had sufficient awareness about these two major risk factors, the tobacco smoke and use of areca nut. The awareness regarding tobacco use in general, irrespective of which form it was consumed, was good. Areca chewing has been a tradition among the elders and youth alike in the Indian sub-continent. This study revealed a good awareness about its hazards as a carcinogen which shows increasing awareness in this context. This might also be attributed to greater proportion of educated people in the studied sample.

Other risk factors for cancers showing considerable awareness were use of alcohol, aspergillus as a carcinogen, and naswar (an addictive chewable substance used widespread in Karachi; composed of tobacco, wood ash, oil and sometimes lime)[22]. However, majority failed to recognize some intrinsic risk factors such as obesity and increasing age and also certain diets to contribute to increased chances of getting cancers. Obesity was found to be the factor respondents had the least awareness of, despite it being an established risk factor for several forms of cancer, including colon carcinoma, adenoma, ovarian cancers, cancers of liver and pancreas[23,24].

Moreover, the comparison among the two groups (CHC and CC) failed to show any significant associations for the risk factors except for Hepatitis B and C. Over half (52.4%) respondents from CHC whereas 39.8% from CC were aware of this risk factor making this comparison interesting as CHC population has majority of population belonging to lower socioeconomic class. In addition to that, less than 50% of respondents from both CHC and CC recognized gall stones, drugs, insecticides, age, diet and obesity as risk factors of cancer hence confirming the lack of awareness in the study population.

The limitations of this study are that it could not be generalized to the population of Pakistan, as the AKUH clinics represent private health-sector and patients visiting here belong to either high or middle income groups.

Conclusion

There is a general lack of awareness of cancer risk factors in the studied population. Awareness regarding familial pattern of the disease, methods of prevention, and the importance of early diagnosis was poor. This knowledge is essential if proper implementation of a cancer screening program is to be carried out, and if preventable cancers are to be controlled. Furthermore, majority did not consider obesity and dietary habits as risk factors for cancer. It is important to create awareness through educational programs on cancer prevention, dissemination of knowledge regarding preventable cancer risk factors, the benefits of early diagnosis, and

availability of screening tests.

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