

Cancer Awareness amongst Students of Southeast University Bangladesh

Munima Haque^{1,*}, Md. Rassel Kabir²Assistant Professor, Dept. of Electrical and Electronic Engineering, Southeast University, Dhaka, Bangladesh¹Lecturer, Dept. of Statistics Discipline, Khulna University, Khulna, Bangladesh²

ABSTRACT: Cancer is a well discussed word in medical community as well as the public in the world. The occurrence of cancer is increasing in Bangladesh. Therefore, it is crucial to identify the risk factors that influence cancer occurrence relating to cancer awareness in health. The purpose of this study was to show the relationship of risk factors with cancer awareness amongst students of Southeast University and identify the influential factors responsible for body grading. University students were selected for completing a cancer awareness questionnaire form. Most of the students are within the age range of 18-29 years. All 181 students participating at a cancer awareness seminar at Southeast University Bangladesh were requested to fill up a Health History Questionnaire form of the students before the cancer awareness seminar. The study used bivariate analysis considering four risk factors as covariates. Frequency of departments/discipline with gender was calculated. Relationship was explored for awareness of cancer symptoms, smoking status, number of meals per day, and body structure. Also, distribution of respondents by awareness of cancer symptoms and few possible variables (sex, living place, cancer sufferer family members) were conducted. Bivariate analysis was performed for distribution of the respondents by their graded body structure. Physical exercise, medical checkup, living place, smoking status was taken as influential factors. This analysis calculated that about 9.9% students were entirely aware of cancer symptoms, the largest part, 60.2% were concerned slightly with its symptoms and the rest part didn't have any idea regarding its symptoms. Also bivariate analyses of aware of cancer symptoms and other potential factors were performed. An attempt was taken to identify the significant variables responsible for their body structure, resulted in no significant correlation between any of the variables for cancer awareness. The results of this study showed the overall cancer awareness within the student community in undergraduate settings and developed the sense of cancer symptoms at very preliminary level. It also presented the importance of keeping body fit with a suggestion of avoiding carcinogenic substances.

KEYWORDS: Risk factors, Cancer awareness, Food habits, Smoking status, Bivariate.

I. INTRODUCTION

Cancer occurrence has increased significantly in the last few decades. In 2012, the highest cancer rate for men and women together was in Denmark having 338 people per 100,000. Denmark, France, Australia, Belgium, Norway, USA, Ireland, Republic of Korea and The Netherlands have age standardized rate of at least 300 people per 100,000 person. All the top ten cancer occurrence countries are from Europe, Oceania, Northern America and Asia [1]. All cancers death rate per 100,000 (age standardized) number 1 is Armenia having rate 229.84 while number 172 is Gabon having a rate of only 51.06. Bangladesh has a death rate per 100,000 of 83.07 [2].

In 2012, about 4.7 million male patients died from cancer in the world. Lung cancer, Liver, stomach, bowel and prostate cancers are the five most common causes of cancer death in males worldwide, causing 24%, 11%, 10%, 8% and 7% of the male patients' deaths, respectively. In 2012, about 3.5 million females died from cancer in the world. Breast, Lung, bowel, cervical and stomach cancers are the five most common causes of cancer death in females in the world, amounting 15%, 14%, 9%, 7% and 7% of the female total deaths, respectively [3].

Cancer is said to be the most cause of death in Bangladesh in the next few years. The new cancer cases will rise to 21.4 million from 12.7 million by 2030. Cancer is the sixth leading cause of death in Bangladesh. International Agency

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 7, July 2016

for Research on Cancer has estimated cancer-related death rates in Bangladesh to be 7.5% in 2005 and 13% in 2030 [4]. Bangladesh having 142 million people is in ninth position in terms of population. There are about 0.2 million new cancer patients every year and amounting to about 1.3-1.5 million cancer patients in Bangladesh. Amongst male, lung cancer and mouth-oropharynx cancer are the top two occurring cancers in males, while esophagus cancer and stomach cancer are also prevalent. Cancer cervix uteri and breast cancer are most occurring cancers amongst female while mouth and oropharynx cancer, lung cancer, and esophagus cancer are also prevalent with female patients. There are only about 150 qualified clinical oncologists and only 16 pediatric oncologists working in Bangladesh. Cancer treatment is given in 19 hospitals and 465 hospital beds are used for chemotherapy in the oncology/radiotherapy departments. Currently in use are 15 linear accelerators, 12 Co-60 teletherapy and 12 brachytherapy units. Around 56 cancer chemotherapeutic agents are obtainable in Bangladesh [5]. There are certain risk factors that can be avoided but some cannot be like age and family history. One can decrease risk of developing specific cancer by less exposing them to some risk factors. Age, smoking, exposure to sun, ionizing radiation, specific chemicals and other substances, some viruses and bacteria, certain hormones, family history of cancer, alcohol, poor diet, lack of physical activity, or being overweight. Over time, several factors can combine to cause normal cells to become cancerous [6] [7]. The risk factors mentioned are: Tobacco, Infections, Hepatitis B Virus and hepatitis C virus, Human Papilloma Virus, diet, overweight and obesity, and physical inactivity, alcohol use, occupational exposures, pollution (air-indoor and outdoor, water, soil). Other causes and risk factors are food contaminants, medical drugs, hormonal and reproductive factors, ionizing radiation (from natural, industrial, and medical sources), ultraviolet (UV) radiation, immunosuppressant, genetic susceptibility etc. [8].

II. BACKGROUND

Research works has been performed all over the world regarding various cancers and its awareness. There has been sun protection and early detection awareness of cancer amongst high school students in Florida, USA [9]. Another research explores teaching medical students about tobacco and its consequences [10]. Also, there was a survey on 184 adolescents found that short presentations can increase their knowledge, but more efforts are needed to change their behaviour towards sun-bathing and tanning for skin cancer prevention [11]. Another University, Al Khobar, in the Eastern Province of Saudi Arabia performed research on breast cancer awareness amongst health professionals [12]. Cervical cancer awareness and preventive behaviour have been investigated amongst Female University Students in South Africa [13]. Another study discussed about practices of sun protection of secondary students in Australia [14]. A pilot study was performed on testicular cancer awareness and self-examination in London [15]. Also, A survey performed on a British population on skin cancer knowledge and preventive behaviour showed that practice of sun-safe protection was low, having only 33% sought prevention (shade, covered up or used high factor sunscreen) to protect themselves from the sun. Men and those from lower socioeconomic groups were least knowledgeable about sun-protections. [16].

On the annual report to the USA on the Status of Cancer, 1973–1996 (Lung Cancer and Tobacco Smoking), it was found that there is decrease in Cancer deaths and lung cancer rates. But there is a rise of smoking amongst teenagers in USA which needs to be prevented [17]. 471 adults (male and female) participated on a telephonic survey in Quebec, Canada on Human Papilloma Virus vaccine and cervical cancer screening. It was found that although having low awareness of this disease, most of the participants are ready to accept HPV vaccine [18]. Another study performed on Turkish high school students showed that they are not aware of the proper procedure of breast self-examination and risk factors of breast cancer [19]. A qualitative study performed on 20 Malaysian women who have never had a Pap smear concluded with the results that they do not have adequate knowledge about the awareness and prevention of cervical cancer [20]. By conducting a survey Human Papillomavirus it has been found that the knowledge about the purpose of the Pap smear remains low. It is important to have proper Pap smear knowledge amongst high-risk women for prevention of cervical cancer and other reproductive diseases. [21]. An effect of mass and interpersonal communication on breast cancer screening was investigated [22]. By conducting a survey on a large USA university student health centre, it has been found out that more than 90% of users of tanning lamps were aware that premature aging and skin cancer were possible by using tanning lamp. Even having proper knowledge of effects of UV exposure, university students freely and frequently use tanning lamps, primarily for desired cosmetic appearance. To change this risky

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 7, July 2016

behaviour requires a fundamental change in the social perception that tans are attractive and good for health [23]. Skin cancer and sun protection awareness within white Hispanic and white non-Hispanic high school students in Florida, USA was also investigated. It was found that there are differences amongst these two types of students in terms of knowledge, risk of skin cancer, and sun-protection awareness [24]. Breast cancer awareness was performed amongst 200 female university students in University Sains Malaysia. It was found that most of the students were not adequately aware of breast cancer and its risk factors, symptoms [25]. Factors associated with breast self-examination among Jordanian women were examined [26]. Cancer awareness screening with a selected population in Karachi was performed on 1500 people. Amongst them, around 10% participants contacted the campaign personals with some unusual results in their screenings of cancer, which shows the importance of performing screening to prevent cancer. [27].

III. SCOPE OF THE RESEARCH WORK

As the risk factors of cancer are likely to be different in locations and countries, so it is important to determine the hazardous factors of various parameters causing cancer in Bangladesh. Our study will suggest the possible risk factors for the high incidence of cancer among Bangladeshis. In research works performed by local and international scientists, it has been shown that couple of risk factors are associated with the occurrence of cancer, and we would like to do further investigation about other risk factors which are still not explicitly quantitatively studied. The findings of this research will open a new door in cancer prevention for all persons with knowing the risk factors, which is important for successful completion of primary prevention of cancer.

IV. MATERIALS AND METHODS

The Study is conducted with the data which was collected from the student health history questionnaire forms supplied to the students of Southeast University before a cancer awareness seminar. The analysis of this paper comprises the information of 181 students of various discipline aged 20-79. SPSS software (version 16.0) was used for doing the statistical analysis of the cancer awareness data.

For this analysis, some characteristics of students i.e. gender (male, female), department (BBA, CSE, EEE, ETE, Pharmacy, Textile), marital status (yes, no), living place (urban, rural), Awareness of cancer symptoms (Fully, a little, not at all), Smoking status (yes, no), Meals in a day (thrice, twice, single), Body structure (thin, average, fat), Cancer sufferer family members (yes, no), Physical exercise (regular, irregular), Medical checkup (regular, irregular) are considered as outcomes variables.

V. EXPERIMENTAL RESULTS

Amongst the chosen students of Southeast University 181 students aged 18-29, 83.4% were male and 16.6% were female respectively. We had a sample of 181 students from different department of Southeast University.

Table 1 shows the frequency of departments/discipline with gender. Of them about 16.6% were found to be female and 83.4% were male. About four percent (3.3%) students came from BBA, most students (86.6%) came from CSE, EEE, and ETE jointly, and 8.3% were from pharmacy department and the rest part from textile department. We didn't find any participant in this study from departments of humanity. In the context of marital status, only 4.4% respondents were recorded to get married during their student life. Amongst the participating students 86.2% of them were Muslims and the rest (13.8%) were non-Muslims. The living place of the students was considered in our study with an aim whether the cancer awareness differ from rural to urban. Here we found the highest portion (72.4%) lived in urban area and the rest (27.6%) were from rural area.

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 7, July 2016

Table 1: Outlines of the key demographic factors on the respondents ($n = 181$). Summary presentation of the percentage distribution of gender, department wise students, marital status, religion and living place.

Variables	Category	Percent
Gender	Male	83.4
	Female	16.6
	Total	100
Department	BBA	3.3
	CSE	21.5
	EEE	43.6
	ETE	21.5
	Pharmacy	8.3
	Textile	1.7
	Total	100.0
	Marital Status	Single
	Married	5.0
	Total	100.0
Religion	Muslim	86.2
	Non-muslim	13.8
	Total	100
Living place	Rural	27.6
	Urban	72.4
	Total	100

Table 2 shows awareness of cancer symptoms, smoking status, number of meals per day, and body structure. About 29.3% participants reported they had experience the cancer sufferer relatives. This study found that 9.9% students were completely aware of the symptoms of cancer, the largest part, 60.2% were concerned slightly with its symptoms. Nearest 29.8% didn't have any idea regarding to its symptoms.

In Bangladesh most people are used to have thrice meal in a day. This study also supported the common scenario. The percentage of the students who had have a single meal in a day was about 22.1%, about 68% were found to have a meal thrice in a day where the least part having twice in a day.

Table 2: The percentage distribution of food habit, cancer awareness, body structure and smoking status of the students.

Variables	Category	Percent
Awareness of cancer symptoms	Fully	9.9
	A little	60.2
	Not at all	29.8
	Total	100
Smoking status	Yes	28.2
	No	71.8
	Total	100
Meals in a day	Thrice	68
	Twice	9.9
	Single	22.1
	Total	100
Body structure	Thin	20.4
	Average	68.5
	Fat	11
	Total	100

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 7, July 2016

To present the current scenario of smoking status at university level students were asked whether they did smoke or not, if yes how many cigarettes they took in a day. A considerable number (28.2%) of students exposed themselves as smoker with taking cigarettes at different frequency, of them nearly 15% students reported to take less than five cigarettes, 11% with 5-15 cigarettes and a negligible percent (2.2 %) were found to have more than 15 cigarettes per day.

Only Sixty five students answered that as they did exercise regularly, respondents from the largest parts (59.7%) of this study were found to report that they didn't take exercise regularly, we had eight students who never went under any physical exercise.

Table 3 shows distribution of respondents by awareness of cancer symptoms and few possible variables (sex, living place, cancer sufferer family members). Amongst male, 18 of them were fully aware of cancer symptoms while none of the females were fully aware. 48(38.7%) male were little aware while 76(61.3%) females were little aware. Amongst male 45(83.3%) had no knowledge about cancer symptoms at all while amongst female 9(16.7%) had no knowledge.

Table 3: The distribution of respondents by awareness of cancer symptoms and few possible associated variables.

Variable	Category	Awareness of cancer symptoms			Total N(%)
		Fully N(%)	Little N(%)	Not at all N(%)	
Sex	Male	18(100)	88(80.7)	45(83.3)	151(83.4)
	Female	0(0)	21(19.3)	9(16.7)	30(16.6)
	Total	18	109	54	181
Living place	Urban	10(55.6)	78(71.6)	41(59.5)	129(71.3)
	Rural	8(44.4)	31(28.4)	13(24.1)	52(28.7)
	Total	18	109	54	181
Cancer sufferer family members	Yes	3(16.7)	36(33)	14(25.9)	53(29.3)
	No	15(83.3)	73(67.3)	40(74.1)	128(70.7)
	Total	18	109	54	181

In terms of living place with cancer awareness, 10(55.6%) urban dwellers and 8(44.4%) rural dwellers were fully aware, 78(71.6%) urban dwellers and 31(28.4%) rural dwellers were little aware, while 41(59.5%) urban dwellers and 13(24.1%) rural dwellers were not aware at all about cancer symptoms.

Amongst cancer sufferer family members, those who had family member with cancer 3(16.7%) were fully aware, while those not having any cancer sufferer family member 15(83.3%) were fully aware of cancer symptoms. Those who had family member with cancer 36(33%) were little aware, while those not having any cancer sufferer family member 73(67.3%) were little aware of cancer symptoms.

Those who had family member with cancer 14(25.9%) were not aware, while those not having any cancer sufferer family member 40(74.1%) were not aware at all of cancer symptoms.

Table 4 depicts distribution of the respondents by their graded body structure. Physical exercise, Medical checkup, living place, smoking status were taken as independent variables. The body structure was categorized as thin, average and fat. The P-value for physical exercise was 0.512 while for medical checkup the P-value was 0.843. For living place, the P-value was 0.309 while for smoking status it was 0.375.

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 7, July 2016

Table 4: Results of bivariate analysis listed to examine the significant variables related to graded body structure by chi-square test.

Variable	Category	Body Structure			Total	P-value
		Thin N(%)	Average N(%)	Fat N(%)		
Physical exercise	Regular	11(29.7)	48(38.7)	6(30.0)	65(35.9)	0.512
	Irregular	26(70.3)	76(61.3)	14(70.0)		
	Total	37	124	20		
Medical checkup	Regular	23(62.2)	82(66.1)	11(55.0)	115(63.5)	0.843
	Irregular	14(37.8)	42(33.9)	9(45.0)		
	Total	37	124	20		
Living place	Urban	23(62.2)	90(72.6)	16(80)	129(71.3)	0.309
	Rural	14(37.8)	34(27.4)	4(20)		
	Total	37	124	20		
Smoking status	Yes	13(35.1)	31(25)	7(35)	51(28.2)	0.375
	No	24(64.9)	93(75)	13(65)		
	Total	37	124	20		

Findings from bivariate analysis:

Chi-square test was performed for the significance between different associated variables and figure out the subtle analysis. To analyze the gender basis difference on consciousness of the symptoms of cancer, we did bivariate analysis where only ten percent students were fully concerned with the symptoms of cancer, the majority (60%) of the students had little idea about its symptoms and the remaining part reported as they were not aware of the symptoms at all. We expected that the aware of the symptoms would vary significantly differ vary from department to department but the test didn't support our normal expectation as for which p-value is greater than 1% level of significance. Most of the cases we found the possible associated variable with aware of symptoms of cancer insignificant. We hoped most of the students from urban area might be well concerned with the symptoms of cancer. This study analyzed that among the 71.3% of the student coming from urban area, only 5.5% had crystal clear idea on cancer symptoms, this scenario was almost same (4.4%) for the student from rural area that's why it doesn't differ significantly.

In our study we had about 30% of the students whose close relative or family members suffered /suffering from cancer and the largest part of individual reported they didn't experience and face this situation.

The questionnaire was also designed with an additional research interest concentrated on physical structure of the student categorized as thin, average and fat and finding the correlated factors responsible for their structure. The considered variables in our study which seemed to be associated with the body structured of the students are namely physical exercise they did, under medical checkup, living place, smoking status, meal habits were found insignificantly correlated. For this purpose what we did was apply chi-square test considering 5% level of significance.

The research was performed with an assumption that the student under regular medical checkup might possess a good health and could be incorporated in our statistical analysis as highly influential variable. But this category did not differ considerably from the irregular category with corresponding groups of body structure of the students as and P-value < 0.01.

About 21 percent respondents were recorded as thin while they were asked to grade their body structure, of them 29.7 percent were found to place themselves under regular exercise and the rest part did exercise irregularly. The highest portion (68.5) belongs to the average category in body measurement. The lowest number of individuals reported to be fat.

Similarly living place from where they came and the smoking status they reported had no significant impact on their physical fitness.

International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 7, July 2016

VI. CONCLUSION

This survey was mainly designed to identify some important variables significantly associated with the cancer awareness as well as with an aim to collect information regarding to food habits, smoking status, going for medical checkup, origin of the residential place and physical exercise for predicting the students current body structure. Before conducting our study we expected at least few of the variables might have statistically significant impact on cancer awareness and physical structure. Chi-square test was performed to figure out the subtle differentiability of gender, living place, and cancer sufferer family by awareness of cancer symptoms. However, this statistical analysis didn't significantly predict a single variable both for growing idea on cancer symptoms and physical fitness. No variable emerged as an important factor to continue the further statistical analysis. Further studies need to be done in this area with larger student population and demographics to find out significant correlation for cancer with the risk factors.

REFERENCES

- [1] M.Ferlay J, Soerjomataram I, Ervik M, Dikshit R, Eser S, Mathers C, Rebelo M, Parkin DM, Forman D, Bray, F. Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. GLOBOCAN, v1.1.2012
- [2] Ferlay J, Soerjomataram I, Ervik M, et al., Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 11 [Internet]. GLOBOCAN v1.0, 2012
- [3] Hussain SA, Sullivan R. Cancer control in Bangladesh. *Jpn J Clin Oncol*. Vol. 43, No. 12, pp. 1159-69, 2013.
- [4] Hussain SMA. Comprehensive update on cancer scenario of Bangladesh. *South Asian J Cancer*. Vol. 2, No. 4, pp. 279–284, 2013.
- [5] Risk Factors for Cancer. Natyional cancer Institute. Website: <http://www.cancer.gov/about-cancer/causes-prevention/risk>. Accessed on 15.4.2016
- [6] Cancer Risk Factors. MedicineNet. website: <http://www.medicinenet.com/cancer-causes/article.htm>. Accessed on 15.4.2016
- [7] Cancer Control Opportunities in Low- and Middle-Income Countries. Institute of Medicine (US) Committee on Cancer Control in Low- and Middle-Income Countries; Sloan FA, Gelband H. Washington (DC): National Academies Press (US); 2007. <http://www.ncbi.nlm.nih.gov/books/NBK54025/>
- [8] Raising Sun Protection and Early Detection Awareness among Florida High Schoolers. *Pediatric Dermatology*. Vol. 22, No. 2, pp.112-118, 2005.
- [9] Richmond R. Teaching medical students about tobacco. *Thorax*. Vol. 54, pp. 70-78, 1999.
- [10] Kristja'nsson S, Helgason AR, Månsson-Brahme E, B. Widlund-Ivarson an Ulle'n H. 'You and Your Skin': a short-duration presentation of skin cancer prevention for teenagers. *Health Education Research. Theory & Practice*. Vol. 18, No. 1, pp. 88–97, 2003.
- [11] Maha SA, Hadi A. Breast Cancer Awareness Among Health Professionals.. *Annals of Saudi Medicine*. Vol. 20, No. 2, 2000.
- [12] Hoque ME. Cervical Cancer Awareness and Preventive Behaviour among Female University Students in South Africa. *Asian Pacific Journal of Cancer Prevention*. Vol.11, pp.127-130, 2010.
- [13] P.M.Livington, V.M.White, A.M.Ugoni, Ron Borland. Knowledge, attitudes and self-care practices related to sun protection among secondary tudents in Australia. *Health Education Research. Theory and Practice*. Vol.16, no. 3, 269-278, 2001.
- [14] Abbas PO. Pilot study of testicular cancer awareness and testicular self-examination in men attending two South London general practices. *Family Practice*. Oxford University Press. Vol. 19, no. 3, 2002.
- [15] Miles A, Waller J, Hiom S. and Swanston D. SunSmart? Skin cancer knowledge and preventive behaviour in a British population representative sample. *Health Education Research, Theory & Practice*. Vol. 20, no. 5, pp. 579–585, 2005.
- [16] Wingo PA, Ries LAG, Giovino GA, Miller DS, Rosenberg HM, Shopland DR, Thun MJ, Edwards BK. Annual Report to the Nation on the Status of Cancer, 1973–1996, With a Special Section on Lung Cancer and Tobacco Smoking. *Journal of the National Cancer Institute*. Vol.91, no. 8, pp. 675-690, 1999.
- [17] Human Papilloma Virus vaccine and cervical cancer screening acceptability among adults in Quebec, Canada. Chantal Sauvageau, Bernard Duval, Vladimir Gilca, France Lavoie and ManaleOuakki. *BMC Public Health*. Vol.7, pp.304, 2007.
- [18] Karayurt O., Özmen D. and Çetinkaya AC. Awareness of breast cancer risk factors and practice of breast self examination among high school students in Turkey. *BMC Public Health*. Vol.8, pp. 359, 2008.
- [19] Wong LP, Wong YL, Low WY, Khoo EM, Shuib R. Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study. *Singapore Med J*.vol. 50, no. 1, pp. 49-53, 2009.
- [20] Mary AG, and Magloir ZF. Awareness, Knowledge, and Beliefs about Human Papillomavirus in a Racially Diverse Sample of Young Adults. *Journal of Adolescent Health*. vol.42, pp. 237–242, 2008.
- [21] Jones KO, Denham BE and Springston JK. Effects of Mass and Interpersonal Communication on Breast Cancer Screening: Advancing Agenda-Setting Theory in Health Contexts. *Journal of Applied Communication Research*. vol. 34, no. 1, pp. 94-113, 2006.
- [22] Knight JM, Kirincich AN, Farmer ER, Hood AF. Awareness of the risk of tanning lamps does not influence behavior among college students. *Hood. Arch Dermatol*. vol. 138, pp. 1311-1315, 2002.
- [23] Ma F, Collado-Mesa F, Shasa Hu S., Kirsner RS. Skin Cancer Awareness and Sun Protection Behaviors in White Hispanic and White Non-Hispanic High School Students in Miami, Florida. *Arch Dermatol*. vol.143, no. 8, pp. 983-988, 2007.
- [24] Hadi MA, Hassali MA, Shafie AA, Awaisu A. Evaluation of breast cancer awareness among female university students in Malaysia. *Pharmacy Practice (Internet)* vol. 8, no. 1, pp. 29-34, 2010.
- [25] Petro-Nustus W, and Mikhail BI. Factors Associated with Breast Self-Examination Among Jordanian Women. *Public Health Nursing*. Vol.19, no. 4, 2002.
- [26] Ali TS, Baig S. Evaluation of a Cancer Awareness Campaign: Experience with a Selected Population in Karachi. *Asian Pacific Journal of Cancer Prevention*. vol. 7, pp. 391-395, 2006.