

## RESEARCH COMMUNICATION

# Self Examination for Breast and Testicular Cancers: A Community-based Intervention Study

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### Abstract

Prevalence of cancers is growing rapidly in all parts of the world with Pakistan being no exception. Prevention is the best option to tackle this rising epidemic. Screening, early detection and health awareness programs are the cornerstones in this regard. A community-based interventional study was therefore here conducted to assess the effect of health education intervention about knowledge and practice of self-breast examination (SBE) among women and self-testicular examination (STE) among men. A total of 127 (70 females and 57 males) adults ( $\geq 18$  years) from an urban community of Karachi, Pakistan were included after taking informed consent. Interventions were in the local language (Urdu) and included educational and awareness sessions by symposia, lectures and hand-on practice demonstrations about SBE and STE. Informative leaflets and brochures were also used in this regard. Pre-intervention assessment revealed that 57% women had knowledge of SBE and 4% men knew about STE and this proportion increased significantly ( $p < 0.001$ ) after the intervention both in women and in men, by 83% and 72%, respectively. Similarly, significant post-intervention improvements were reported for SBE and STE practices ( $p < 0.001$ ). Our results suggest that educational interventions at the community level increase the knowledge and practices of women and men for SBE and STE.

**Keywords:** Self-breast examination - self-testicular examination - cancer prevention - cancer screening - Pakistan

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### Introduction

Cancers are rising in epidemic proportion and these are amongst the most important challenges both for health care providers and public health practitioners. It is a leading cause of death worldwide, in 2007, accounted about 8 million deaths (around 13% of all deaths); and more than 70% of these deaths occurred in low and middle income countries (World Health Organization, 2008) and these figures are projected to rise rapidly, if no effective interventions is made.

Breast cancer is the commonest form of cancer and is one of the leading causes of cancer-related deaths in women globally (Harirchi et al., 2004; Bhurri et al., 2007; World Health Organization 2008; Khokhar 2009). High breast cancer mortality rates are mainly due to late diagnosis. Breast cancer is the most common malignancy in Pakistani women and is the highest reported in any Asian population after the Jews from Israel (Bhurri et al., 2006). In this scenario, the most appropriate way of controlling it is by early detection and prompt treatment (Anderson et al., 2003; Nowicki and Stogowska, 2007). Clinical breast examination (CBE) and self breast examination (SBE) are important components of routine breast care in women and is cost-effective and non-invasive tool for screening

(Albert and Schulz, 2003; Ceber et al., 2009). Literature revealed that SBE is of benefit and cost-effective method in low and middle-income countries (Ali and Baig., 2006; WHO, 2010). The examination by itself is easy to perform, inexpensive, as no special equipment is required can be offered ubiquitously. SBE should be part of any program for early detection of breast cancer, provided that follow-up medical and oncology care is available (Albert and Schulz, 2003). Public education and awareness can promote screening and earlier diagnosis, which are proven to be cost-effective interventions in resource constrain countries (Anderson et al., 2003; Khokhar, 2009).

All women have the right to be educated about breast cancer, but it must be culturally appropriate and tailored to the specific population (Anderson et al., 2003; Ali and Baig, 2006). Similarly, testicular cancer is the most frequently occurring cancer among men ages between 15 to 35 years (Brenner et al., 2003, Brown, 2003, Ward et al., 2005). Research suggests high potentials of using low cost technique for prevention of testicular cancers (McCullagh et al., 2005) such as STE. Nevertheless, poor knowledge and practices towards cancers prevention were reported from various countries of Asia (Ray and Mandal, 2004; Alam, 2006; Inoue et al., 2006; Mazahir et al., 2008; Othman et al., 2009).

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Cancers has great impact on physical, social, economical and emotional life of the suffering individual and his/her family along with a huge burden on health care system (WHO, 2008; Ceber et al., 2009; Khowaja et al., 2010). Pakistan is a poor country where about one third of the population is living below poverty line (Population Policy of Pakistan, 2002) hence cannot afford to manage these costly diseases. The best possible strategy is to take prevention at all levels mainly by increasing knowledge about this disease among general population (McCullagh et al., 2005; Ali and Baig, 2006, Khowaja et al., 2010). However, in Pakistan intervention studies to prevent and early screening of cancers not exist. Thus, we embarked to intervene in this regard with the objective to assess the pre and post intervention knowledge, and practice about SBE and STE among the adult women and men in a community of Karachi, Pakistan. Results of this study will make grounds for further research and interventions at larger scale with more refined strategies.

**Methods**

This was a community based interventional study conducted in a urban community of Karachi, the largest city and economic capital of Pakistan. The selected community is one of the field sites of community health nursing program of a private sector university in Pakistan. There is a very good mix of residents of this community representing all the ethnic, cultural and economic diversified groups. We took approval to conduct this intervention study from the represented leaders of the community. We approached 127 subjects (70 women and 57 men) to participate in this intervention. Before interviewing, a written consent was taken from the study subjects to participate in the study. All the participants were assured about the confidentiality of the information and every effort was made to keep the information confidential. All data was collected by registered nurses who were trained prior for this task.

After extensive literature search and consensus of all the investigators, a questionnaire was developed in English and then translated in Urdu (Local Language). To check the uniformity and precision, the Urdu language questionnaire was back translated into English and the inconsistencies were incorporated before pre-testing the questionnaire. The questionnaire comprised of sections designed separately to asses knowledge about SBE and its practices (in women) and knowledge about STE and its practices (in men). The same questionnaire was used for pre and post intervention assessment. After three months of intervention, post-intervention interviews were conducted among the same registered study participant.

Operational definitions used for this particular study:

**Self Breast Examination:** It is a technique that involves inspection and palpation of the breast of a female by herself in order to detect any abnormality, at least once in a month

**Self Testicular Examination:** It is a technique that involves inspection and palpation of the testes of a male by himself in order to detect any abnormality, at least once in a month

**Community based Interventions:** To provide the knowledge about prevention, risk factors, and clinical presentation and prevention of breast cancers and testicular cancers among study participants; health education seminars were arranged for women and men participants separately in local languages. The strategies used for these interventions include health education through lectures and discussions, role-plays, poster presentations, and by distribution of pamphlets and booklets. Screening sessions were followed after the health education that includes clinical examination, and hands-on practical demonstration about SBE and STE separately for women and men.

All the data regarding pre and post intervention knowledge and practice variable was double entered by Epi-info version 6. Statistical Package for Social Sciences (SPSS) version 17 was used to analyze the data. Means and standard deviations (SD) were calculated for continuous variables (age of the study participants; separately for women and men) while proportions and frequencies were calculated for categorical variables. Pre and post intervention difference of knowledge and practices were calculated by using Fisher’s Exact test.

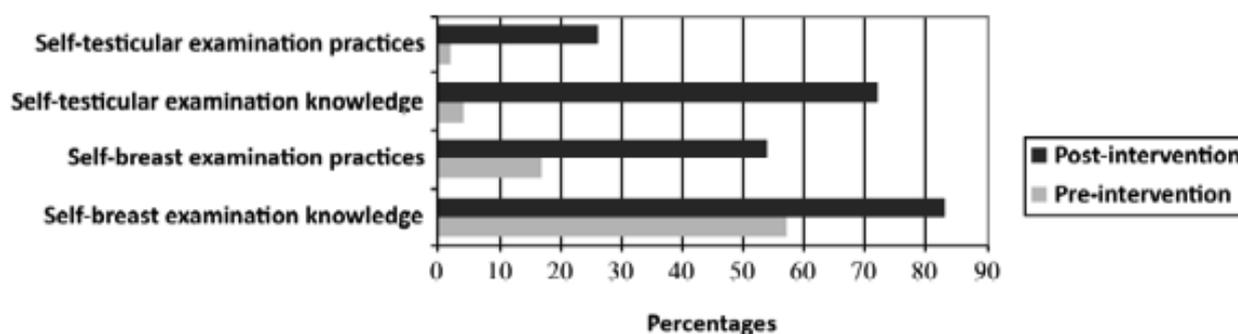
**Results**

Personal characteristics of the study participants are given in table. A total of 127 subjects participated in this study (70 women and 57 men). The mean age of women was 30.8±10.9 (SD) years and of men was 36.5±11.9 (SD) years. Majority of both women and men were married (70% and 86%), employed (68% and 77%) and having schooling of 12 years and above (68% and 97%).

Pre and post-intervention knowledge and practices about self-breast and self-testicular examination among studied women and men is presented in Figure. Only 40 (57%) women knew about SBE and 3 (4%) men knew about STE and this proportion increased significantly (p<0.001) after intervention both in women and in men by 58 (83%) and 41 (72%) respectively. Similarly, in pre-intervention interviews 12 (17%) women were practicing SBE and 1 (2%) men were practicing STE and after intervention these practices rose significantly by 38 (54%) in women who had started practicing SBE and 15

**Table 1. Personal Characteristics of the Study Subjects (n=127)**

Characteristics	Women (n=70)		Men (n=57)	
	No	%	No	%
Age in years	30.8 (Mean)	10.9 (SD)	36.5 (Mean)	11.9 (SD)
Marital status				
Married	49	70.0	49	86.0
Unmarried	21	30.0	8	14.0
Occupation				
Employed	47	68.1	44	77.1
Business	5	26.1	5	8.8
House wife/retired	18	5.8	8	14.1
Schooling				
Up to 5 years	23	32.4	2	3.4
6 to 12 years	43	62.0	54	94.8
13 years and more	4	5.6	1	1.8



**Figure. Pre and Post-intervention Knowledge and Practices about Self-breast and Self-testicular Examination among Studied Women and Men**

(26%) men who had started practicing STE and again the difference was highly significant both in women and men ( $p < 0.001$ ).

## Discussion

The best option to tackle the rising burden of cancer is to prevent it at different levels. Cancer control is well understood as a public health action which is aimed to implement evidence-based strategies for prevention and early detection of cancers. Screening is a well-proven approach by which people with early cancers or pre-cancerous stage can be detected well before clinical signs appear. World Health Organization (WHO, 2008) recommended education to promote early diagnosis by recognizing early signs of cancers. Self organ examination is cost-effective and non-invasive tool to detect any abnormality which may convert or represent in the form of cancer. It is suggestive that SBE and STE is important tool in prevention and early detection of breast and testicular cancers respectively (Albert and Schalz, 2003; McCullagh et al., 2005). This study was attempted to provide knowledge and practices about SBE and STE among the residences of a community of Karachi in order to prevent and detect breast and testicular diseases at earlier stages.

The result of this study revealed that majority of women and men were unaware about the SBE and STE and hence were not practicing these examinations at the base-line. However after intervention, significant increase was noted for the knowledge and practice of SBE & STE. These results are supported by other studies conducted in various regions of the world in which participants were assessed before and after interventions and found to have positive change towards the prevention of cancer (Ali and Baig, 2006; McCullagh et al., 2005; Wood and Duffy 2004). Recently, an interventional study from Urban India reported significant increase in awareness regarding breast cancer screening among women (Khokhar A, 2009). Similar results were documented about the increasing awareness and practice of testicular self-examination in an interventional study (McCullagh et al., 2005).

The highlighting point of this intervention was that, we were able to increase awareness about the importance and the practice of SBE and STE in the community. Furthermore, community participation and mobilization was the true success of this intervention which will lead to formulate and implement further interventions at larger

scale.

This study had some limitations to note. This was done on one urban community of Karachi, hence the results be generalized with caution. The preponderance of study participants were well educated, we can expect the knowledge and practices of illiterate and less educated people even shoddier. The intervention and post-intervention assessment was one time activity and not followed over time to assess its impact over the time period.

To conclude, the results of this study shown that in spite of the fact that a huge majority of the study participants had schooling of more than 12 years, the base-line knowledge and practices of both self-breast and self-testicular examination were very poor. However, there was remarkable improvement in both knowledge and practices of these entities among women as well as men.

As cancer is a silently increasing ailment being the major killer worldwide. Therefore it is necessary to create awareness at all levels both for women as well as men using different strategies and platforms. More research and interventions are suggested to formulate and implement strategies to educate and increase the knowledge of communities for healthy life style and disease prevention strategies including early detection of diseases like cancer. Health care providers including public health practitioners, family physicians, community health nurses and lady health visitors can play a key role in this regards.

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