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

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Abstract

The prevalence of cancers is growing rapidly in all parts of the world and Pakistan is no exception. Prevention is the best option to tackle this rising epidemic and screening, early detection and health awareness programs are cornerstones in this regard. A community-based interventional study was therefore 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 (≥18 years) from an urban community of Karachi, Pakistan were included after giving 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 brochure were also employed. 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 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 the SBE and STE.

Key Words: Self-breast examination - self-testicular examination - cancer prevention - cancer screening - Pakistan

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 are 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; Bhurgri et al., 2007; Khokhar, 2009; World Health Organization, 2008). 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 (Bhurgri et al., 2006). In this scenario, the most appropriate approach to control 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).

Cancers have 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 (Ceber et al., 2009; WHO, 2008; 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, Khawaja 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.

Materials and 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; health education seminars, age of the study participants; health education seminars, and 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.

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Results

Personal characteristics of the study participants are given in Table 1. 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 or more (68% and 97%).

Pre and post-intervention knowledge and practices

![Figure 1. Pre and Post-intervention Knowledge and Practices about Self-breast and Self-testicular Examination among Studied Men and Women (% age values)](image-url)

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

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Women (n=70)</th>
<th>Men (n=57)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years (Mean±SD)</td>
<td>30.8±10.9</td>
<td>36.5±11.9</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>49 (70.0)</td>
<td>49 (86.0)</td>
</tr>
<tr>
<td>Unmarried</td>
<td>21 (30.0)</td>
<td>8 (14.0)</td>
</tr>
<tr>
<td>Occupation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>47 (68.1)</td>
<td>44 (77.1)</td>
</tr>
<tr>
<td>Business</td>
<td>5 (26.1)</td>
<td>5 (8.8)</td>
</tr>
<tr>
<td>House wife/retired</td>
<td>18 (5.8)</td>
<td>8 (14.1)</td>
</tr>
<tr>
<td>Schooling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 5 years</td>
<td>23 (32.4)</td>
<td>2 (3.4)</td>
</tr>
<tr>
<td>6 to 12 years</td>
<td>43 (62.0)</td>
<td>54 (94.8)</td>
</tr>
<tr>
<td>≥13 years</td>
<td>4 (5.6)</td>
<td>1 (1.8)</td>
</tr>
</tbody>
</table>

Pre and post-intervention knowledge and practices were calculated using the Fisher’s Exact test.
about self-breast and self-testicular examination among
studied women and men is presented in Figure 1. 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 (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 (Wood
and Duffy 2004; McCullagh et al., 2005; Ali and Baig,
2006). Recently, an interventional study from Urban India
reported significant increase in awareness regarding breast
cancer screening among women (Khokhar, 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 to be even shoddier. The intervention and post-
intervention assessment was one time activity and not
followed over time to assess its impact over the longer
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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