

RESEARCH ARTICLE

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Perceived Importance of Information Needs on Breast Cancer among Adults: a Population-Based Survey in the District of Colombo, Sri Lanka

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Abstract

Background: Information needs of Breast Cancer (BC) and its perceived importance has not been adequately assessed in Sri Lanka. The present study aimed to assess cognitive information needs of BC among the adults. **Methods:** A household survey was conducted among a representative sample (n=1500) of over 18 years of age resident in the district of Colombo not having BC patients in the families. A validated interviewer-administered questionnaire collected information on general and cognitive information needs. Exploratory factor analysis assessed whether any of the aspects of informational needs are redundant and to group the needs. Results: Mean age of the participants was 37.21 (SD = ±9.7) years. Proportion of females was 51.7%, 82.9% were married and 44.1% had been educated up to General Certificate of Education (GCE) Ordinary Level. Exploratory factor analysis revealed all items of the questionnaire to form two groups that were named as “Factual information on BC prevention and early detection (screening and early diagnosis)” and “Factual information on BC diagnosis and treatment”. Results indicated that both groups of information needs were considered as highly important and the group “Factual information on BC diagnosis and treatment” (mean score 4.20 ± 0.75) was perceived as more important than the other group. The perceived importance of information needs was shown to be significantly different based on the sex of the adults, marital status, level of education and the employment status of the participants. **Conclusion:** This study demonstrates that cognitive information needs on BC are viewed as highly important by the general public. The study identified specific informational needs that are perceived as more important and some socio-demographic characteristics that are associated with higher perceived needs. The study recommends taking into account the findings of the study in designing the content and target groups for education on BC.

Keywords: Breast cancer- breast self-examination- early detection of cancer- health education- health literacy

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Introduction

Health literacy has been identified as an important aspect to health promotion and prevention of disease (Nutbeam, 2000). In Sri Lanka, health education is an essential component of any service package (Vithana et al., 2013). Traditionally health care professionals have relied on their own perceptions of information required and its relative importance when planning and developing health care information material. But, it is now realized that an assessment of clients' perception of their information needs and its perceived importance are essential elements in designing of education material.

Breast Cancer (BC) is a serious health concern for women and the society. It is the most frequent type of cancer among women worldwide (Parkin et al., 2005)

and in Sri Lanka (National Cancer Control Programme Sri Lanka, 2015). BC incidence and death rates show an increasing trend with age, particularly among women 40 and over (National Cancer Control Programme Sri Lanka, 2015). It is undoubtedly accepted that knowledge plays an important role in improving health seeking behavior. In Sri Lanka, there is research evidence that knowledge on BC among adults in general public is not so satisfactory (Ranasinghe et al., 2013; Kuruppu et al., 2015). Recently, Seneviratne et al., (2016) emphasized that knowledge on BC symptoms and detection method of female undergraduates at University of Moratuwa was not sufficient. The study highlighted that even though a few of them were aware about breast self-examination as a method of early detection, the technique of performing BSE was not known. The reason for this was found

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to be lack of awareness of the available services; thus indicating an important aspect of information needs related to BC. Therefore, an assessment of information needs in relation to BC and the perceived importance of such information have to be conducted in Sri Lanka. Ideally the informational preferences should be assessed using validated questionnaire to the local context.

Information needs can be classified into two as cognitive and affective. In terms of cancer-information needs, cognitive needs refers to needs on factual information about cancer prevention, detection, and/or treatment; and affective needs refer to needs on information which will aid in dealing with cancer emotionally (Johnson and Meischke, 1991).

Our objective was to assess cognitive information needs: factual information about breast cancer prevention, detection, and/or treatment, and its perceived importance among the adults in the general public. The data was generated to help health educators to design appropriate educational tools in an intervention to improve knowledge on BC among general public.

Materials and Methods

Study design

This was a community based household survey using the cross-sectional study design.

Study Setting, sample size and selection

The study was conducted in the district of Colombo among a representative sample of 1500 adults selected using multi-stage cluster sampling method (Moser and Kalton, 1971). Sample size was calculated according to the formula to estimate the sample size for a prevalence study. [$n = z^2 p (1-p) / d^2$ (n= the required sample size; $Z = 1.96$ (Standard normal deviation for 5% α error); $p =$ prevalence of information needs of BC was taken as 50% in the absence of similar studies in Sri Lanka or any other country in the region and to maximize the sample size; $d =$ the degree of accuracy (precision) desired for margin of error, set at 0.05.)] (Lwanga and Lemeshow, 1991). Since cluster sampling method was carried out, the effect of clustering was overcome by making a correction for design effect by multiplying the sample by 3.5 (Moser and Kalton, 1971). The sample size required was 1344. By considering 10% of non-response rate, and rounding off the resultant 1479, the final sample was estimated as 1,500. Basic administrative division at field level called Grama Niladhari Division (GND) was considered as a cluster with the cluster size decided as 30 study units to keep the cluster effect minimal (Bennett et al., 1991) while considering feasibility of conducting the Divisional Secretariats (DS) in District of Colombo based on the proportion of adults residents. Within a cluster the index house as the point of commencement of the study was selected randomly by dropping a pin over a map of the cluster. The house that was closest to the pin head was selected as the index house. This house was visited and one eligible study unit in the house was recruited for the study after verifying the eligibility criteria. Considering this house as the index house and all the houses in the same

side of the road were selected to visit in search of eligible study units. When visiting the houses, the immediate adjacent house to the right front door of the index house was selected as the second house.

Study participants

Inclusion criteria for participants were 18 years of age or more and not having BC patients in the families. Those with psychological problems affecting their ability to respond to an interviewer administered questionnaire were excluded.

Study Instrument

The study utilized an interviewer-administered questionnaire which was developed and validated by the authors by confirming the judgmental validity of a panel of experts at consultative meetings. The validated questionnaire was in the local languages of Sinhala and Tamil and included three different sections. The first section covered sociodemographic characteristics of the participants. The second collected information on cognitive information needs and perceived importance of receiving such information. The areas covered were related to changes in breast, breast self-examination, risk factors, symptoms, testing methods of screening / diagnosis of BC and services on screening / diagnosis of BC. Twelve statements related to general and cognitive information needs were included in this section with provision to rank the level of importance in a five point scale - [1 (not important), 2 (slightly important), 3 (moderately important), 4 (very important) and 5 (extremely important)]. The third section collected data about and selection of media to obtain the information. The language was simple so that subjects could readily understand them. The questionnaire was pilot-tested among 50 adults. Exploratory factor analysis techniques were administered to assess whether any of the aspects of informational need are redundant and to group them.

Interview Procedures

The principal investigator (PI) recruited data collectors and trained them by a mock survey in the field which included application of eligibility criteria, obtaining informed verbal consent and administering the questionnaire. A house to house survey was conducted and the PI and the trained data collectors administered the study instruments in a location within the household of the selected study unit, during weekends and public holidays to ensure that the employed adults are included as subjects. When a household was visited, the household members were inquired into presence of eligible study units among the members living in that household. When there were more than one eligible study units in the household, only one of them was randomly selected. When the selected person was not available at the time of visiting the house, additional two visits were done to the house. In case of the selected study unit could not be contacted even after three consecutive visits, the study unit was considered as a non-respondent.

Statistical Analysis

Characteristics of the study sample and of response to the questionnaire were analyzed using descriptive statistics. Descriptive analysis was used to assess perceived importance of the information needs. A score of 5 was offered for those who perceived a need as 'extremely important' and a score 1 was offered to those who perceived a need as 'not important' with the in between categories being offered scores of 2 – 4. To assess the applicability of items (i.e. the information needs statements) to adults in general public, the initial scaling format of the questionnaire included the category of '0 (not a need)'. Following items analysis, any items with more than 10% of responses in the "not a need" option was designated for deletion.

Reliability of the questionnaire was again assessed by estimating item-to- total correlation coefficient and Cronbach coefficient α .

All analyses were computed with SPSS software, version 21.0 (SPS Sinc. Chicago Illinois, USA).

Ethical Considerations

The project was approved by the Ethics Committee in the Faculty of Medicine, University of Colombo, Sri Lanka [EC-10-035].

Results

A total of 1543 eligible adults were invited to participate in the study to recruit (1500) consenting adults yielding a response rate of 97.2%. Mean age of the participants was 37.21 (SD = \pm 9.7) years. The minimum age was 18 years, while the maximum age of the adult in the sample was 80 years. Proportion of males and females was 725 (48.3%) and 775 (51.7%), respectively. With regard to marital status 1243 (82.9%) were married, 232 (15.5%) were unmarried and 25 (1.6%) were widowed, divorced, separated. Approximately, 662 (44.1%) of the participants had been educated up to General Certificate

Table 1. Distribution of the Study Population by the Socio- Demographic Characteristics

| Socio-demographic characteristics | n = 1500 | % |
|-----------------------------------|----------|------|
| Age in years | | |
| 18 - 24 | 53 | 3.5 |
| 25 - 34 | 566 | 37.7 |
| 35 - 44 | 568 | 37.9 |
| 45 - 54 | 230 | 15.3 |
| \leq 55 | 83 | 5.5 |
| Sex | | |
| Male | 725 | 48.3 |
| Female | 775 | 51.7 |
| Residence | | |
| Urban | 840 | 56 |
| Rural | 660 | 44 |
| Married status | | |
| Married | 1243 | 82.9 |
| Unmarried | 232 | 15.5 |
| Widowed/divorced/separated | 25 | 1.6 |
| Highest level of education | | |
| Passed Grade 5 | 52 | 3.5 |
| Passed Grade 9 | 91 | 6.1 |
| Passed G.C.E (O/L) Examination | 662 | 44.1 |
| Passed G.C.E. (A/L) Examination | 522 | 34.8 |
| University Degree / Diploma | 173 | 11.5 |
| Employment | | |
| Full time or part time | 976 | 65.1 |
| Unemployed or retired | 524 | 34.9 |

of Education (GCE) Ordinary Level and 552 (34.8%) were educated GCE Advance Level. The socio demographic characteristics of participants are shown in Table 1.

Results of the exploratory factor analysis revealed that all statements obtained factor loading values higher

Table 2. Rotated Component Matrix^a

| Group 1: "Factual information on breast cancer prevention and early detection (screening and early diagnosis)" | Component | |
|--|-----------|----------|
| | Factor 1 | Factor 2 |
| To know how / when can breast self-examination be done | 0.825 | 0.031 |
| To know about symptoms of breast cancer | 0.816 | 0.274 |
| To know about the risk factors of breast cancer | 0.755 | 0.234 |
| To know from which age should breast self-examination be initiated | 0.723 | 0.31 |
| To know about the changes in the breast when a cancer occurs | 0.637 | 0.511 |
| To know about cost for screening tests of breast cancer if done in the private sector | 0.566 | 0.109 |
| To know about common telephone number for the provision of information on breast cancer | 0.555 | 0.463 |
| Group 2: "Factual information on breast cancer diagnosis and treatment" | Factor 1 | Factor 2 |
| To know the places at which screening for breast cancer is offered | -0.029 | 0.866 |
| To know about the places that offer diagnostic services for breast cancer | 0.291 | 0.81 |
| To know whom to consult if any abnormalities show on the breast | 0.457 | 0.742 |
| To know who are the highest risk person of breast cancer and what should they do | 0.166 | 0.719 |
| To know about testing methods for diagnosis of breast cancer | 0.422 | 0.691 |

Extraction Method, Principal Component Analysis; Rotation Method, Varimax with Kaiser Normalization; a, Rotation converged in 3 iterations.

Table 3. Item-to- Total Correlation Coefficient and Cronbach Coefficient α

| Item | Corrected Item- Total Correlation | p-value |
|---|--------------------------------------|---------|
| To know about common telephone number for the provision of information on breast cancer | 0.551 | p<0.01 |
| To know about the risk factors of breast cancer | 0.874 | p<0.01 |
| To know who are the highest risk person of breast cancer and what should they do | 0.878 | p<0.01 |
| To know from which age should breast cancer self-examination be initiated | 0.804 | p<0.01 |
| To know how / when can self-breast investigation test for breast cancer be done | 0.802 | p<0.01 |
| To know the places at which screening for breast cancer offered | 0.669 | p<0.01 |
| To know about the symptoms of breast cancer | 0.873 | p<0.01 |
| To know about the changes in the breast when a cancer occurs | 0.845 | p<0.01 |
| To know whom to consult if any abnormalities show on the breast | 0.786 | p<0.01 |
| To know about places that offer diagnostic services for breast cancer | 0.885 | p<0.01 |
| To know about testing methods for diagnosis of breast cancer | 0.813 | p<0.01 |
| To know about cost for the screening tests of breast cancer if done in the private sector | 0.756 | p<0.01 |
| Cronbach coefficient α | 0.95 | |

than 0.55 indicating that none were redundant. The 12 informational needs statements were shown to be clustered in two groups, one accounting for 33.15% of the variability and the other accounting for 30.54% of the variability. The two groups were named as “Factual information on breast cancer prevention and early detection (screening and early diagnosis)”. Because the statements contain prevention (breast cancer risk factors) statements and early detection (screening and early detection) statements. Discussing about breast self-examination is related to early diagnosis (down

staging) of cancer under the early detection. Discussing about screening mammography is related to screening of breast cancer under early detection of cancer. The other group is named as ‘Factual information on breast cancer diagnosis and treatment’. Because, the statements contain confirmatory diagnostic tests (disgnostic mammography) and treatments. The results of rotated component matrix are depicted in Table 2.

Assessment of reliability was confirmed item-to-total correlation coefficient which was more than 0.33 for each item. The overall internal consistency reliability was also

Table 4. Rank Ordering of Importance of Information Needs by Mean and Distribution Frequency of the Study Population

| Statement: Informational needs | 1 n (%) | 2 n (%) | 3 n (%) | 4 n (%) | 5 n (%) | $\bar{x} \pm SD$ |
|--|------------|------------|------------|------------|------------|--------------------------|
| Group: “Factual information on breast cancer prevention and early detection (screening & early diagnosis)” | | | | | | $\bar{x}: 4.00 \pm 0.73$ |
| To know how / when can breast self-examination be done | 41 (2.7) | 110 (7.3) | 268(17.9) | 643 (42.9) | 438 (29.2) | 4.30 \pm 0.80 |
| To know about symptoms of breast cancer | 0 (0) | 43 (2.9) | 323 (21.5) | 599 (39.9) | 535 (35.7) | 4.08 \pm 0.84 |
| To know about the risk factors of breast cancer | 0 (0) | 47 (3.1) | 335 (22.3) | 568 (37.9) | 550 (36.7) | 4.08 \pm 0.93 |
| To know from which age should breast self-examination be initiated | 27 (1.8) | 53 (3.5) | 299 (19.9) | 650 (43.3) | 471 (31.4) | 3.99 \pm 0.90 |
| To know about the changes in the breast when a cancer occurs | 41 (2.7) | 14 (0.9) | 294 (19.6) | 743 (49.5) | 408 (27.2) | 3.97 \pm 0.87 |
| To know about cost for screening tests of breast cancer if done in the private sector | 1 (0.1) | 32 (2.1) | 339 (22.6) | 695 (46.3) | 433 (28.9) | 3.95 \pm 0.89 |
| To know about common telephone number for the provision of information on breast cancer | 29 (1.9) | 36 (2.4) | 402 (26.8) | 580 (38.7) | 453 (30.2) | 3.93 \pm 0.91 |
| Group: ‘Factual information on breast cancer diagnosis & treatment’ | | | | | | $\bar{x}: 4.20 \pm 0.75$ |
| To know the places at which screening for breast cancer is offered | 0 (0) | 49 (3.3) | 117 (7.8) | 583 (38.9) | 751(50.1) | 4.36 \pm 0.76 |
| To know about the places that offer diagnostic services for breast cancer | 0 (0) | 40 (2.7) | 306 (20.4) | 476 (31.7) | 678 (45.2) | 4.20 \pm 0.85 |
| To know whom to consult if any abnormalities show on the breast | 0 (0) | 29 9 (1.9) | 377 (25.1) | 368 (24.5) | 726 (48.4) | 4.19 \pm 0.88 |
| To know who are the highest risk person of breast cancer and what should they do | 0 (0) | 52 (3.5) | 295 (19.7) | 567 (37.8) | 586 (39.1) | 4.12 \pm 0.84 |
| To know about testing methods for diagnosis of breast cancer | 0 (0) | 44 (2.9) | 459 (30.6) | 335 (22.3) | 662 (44.1) | 4.08 \pm 0.93 |

1, Not Important; 2, Slightly Important; 3, Moderately Important; 4, Very Important); 5, Extremely Important

Table 5. Association between Socio- Demographic Characteristics of the Study Population and Perceived Importance of Informational Needs by Mean from Very Important (5) to Not Very Important (1) within the Two Groups

| Socio-demographic characteristics | All items in Group 1 | Significance | All items in Group 2 | p-value |
|-----------------------------------|----------------------|---------------------------|----------------------|----------------------------|
| Sex | | | | |
| Female | 4.41± 0.48 | F(1,1498)=60.18, p<0.0001 | 4.63 ± 0.45 | F(1,1498)=106.41, p<0.0001 |
| Male | 3.55 ± 0.69 | | 3.72 ± 0.72 | |
| Age in years | | | | |
| 18 – 24 | 4.03 ± 0.68 | F(4,1499)=11.24, p<0.0001 | 4.16 ± 0.79 | F(4,1499)=4.59, p<0.001 |
| 25 – 34 | 4.13 ± 0.74 | | 4.20 ± 0.75 | |
| 35 – 44 | 3.86 ± 0.62 | | 4.10 ± 0.64 | |
| 44 – 54 | 4.05 ± 0.92 | | 4.35 ± 0.93 | |
| 55≤ | 3.83 ± 0.75 | | 4.21 ± 0.82 | |
| Married status | | | | |
| Married | 3.99 ± 0.73 | F(1,1498)=0.45, p=0.50 | 4.21 ± 0.75 | F(1,1498)=6.82, p=0.009 |
| Unmarried / Widowed | 3.98 ± 0.74 | | 4.09 ± 0.73 | |
| Highest level of education | | | | |
| Passed G.C.E (O/L) or less | 3.89 ± 0.66 | F(1,1498)=27.49, p<0.0001 | 4.11 ± 0.71 | F(1,1498)=22.71, p<0.0001 |
| Passed G.C.E. (A/L) or higher | 4.11 ± 0.79 | | 4.28 ± 0.78 | |
| Employment | | | | |
| Full time or part time | 3.59 ± 0.67 | F(1,1498)=1.31, p=0.25 | 3.83 ± 0.78 | F(1,1498)=21.58, p<0.0001 |
| Unemployed or retired | 4.21 ± 0.67 | | 4.38 ± 0.65 | |

assessed using Cronbach coefficient α which was found to be 0.95 (Table 3).

Perceived importance of informational needs on breast cancer among adults in the general public

The study population ranked the information needs based on their importance in the given scale from 'Not important' to 'Extremely important'. The distribution of the study population by their ranking of the importance of information needs and average score for each statement are shown in Table 4. Results indicated that both groups of information needs were considered as highly important. Within the two broad groups of informational needs, the group of "Factual information on breast cancer diagnosis and treatment" (mean score 4.00 ± 0.73) were perceived as more important by the study units than the group of "Factual information on breast cancer prevention and early detection (screening and early diagnosis)" (mean score 4.20 ± 0.75). This was also evident through the distribution of the rank ordering of the needs. The highest ranked information need among the group "Factual information on breast cancer prevention and early detection (screening and early diagnosis)" was 'To know how/when the breast self-examination can be done' while the highest ranked information need among the group "Factual information on breast cancer diagnosis and treatment" was 'To know the places at which screening for breast cancer is offered'.

The lowest ranked information need among the group "Factual information on breast cancer prevention and early detection (screening and early diagnosis)" was 'To know about common telephone number of the provision of information on breast cancer' while the lowest ranked informational need among the group 'Factual information on breast cancer diagnosis and treatment' was 'To know

about testing methods for diagnosis of breast cancer' (Table 4).

The socio-demographic factors associated with information needs on "Factual information on breast cancer prevention and early detection (screening and early diagnosis)" and "Factual information on breast cancer diagnosis and treatment" was shown in Table 5. Females perceived both the groups of information needs as significantly more important when compared to males ('Factual information on breast cancer prevention and early detection (screening and early diagnosis)' – $p<0.0001$ and 'Factual information on breast cancer diagnosis and treatment' – $p<0.0001$).

Those in the age group of 25 -34 considered the group 'Factual information on breast cancer prevention and early detection (screening and early diagnosis)' as significantly more important than the other age groups ($p<0.0001$). When considering the group 'Factual information on breast cancer diagnosis and treatment' it was the age group of 44-54 years that considered it significantly more important ($p<0.001$).

Those who were married considered 'Factual information on breast cancer diagnosis and treatment' as significantly more important than those unmarried / widowed ($p=0.009$). The differences of perception of importance of the information needs related to 'Factual information on breast cancer prevention and early detection (screening and early diagnosis)' were similar among married and unmarried / widowed ($p=0.5$).

Those in the higher level of education among the study population considered both the group of information needs as significantly more important when compared to the lower educational groups ('Factual information on breast cancer prevention and early detection (screening and early

diagnosis) – $p < 0.0001$ and ‘Factual information on breast cancer diagnosis and treatment’ – $p < 0.0001$).

When considering the employment status the unemployed or retired considered ‘Factual information on breast cancer diagnosis and treatment’ as more important ($p < 0.0001$), while there was no significant difference between the employed and unemployed / retired with regards to their perceived information needs on ‘Factual information on breast cancer prevention and early detection (screening and early diagnosis)’ ($p = 0.25$).

Desired Sources of information for adults in the general public

The study units listed their preferred sources of information on BC. “Television programmes” as electronic media was the top choice ($n = 1,424$, 94.9%) while the second was “books” ($n = 1,305$, 87%). Newspapers ($n = 1,199$, 80%) was the preferred printed media. Electronic mail ($n = 424$, 28.3%) and internet ($n = 647$, 43.1%) were listed by a minority.

The Public Health Midwife was listed as a preferred source of information regarding BC by 1,473 (98%), while 1,250 (83%) preferred specialist doctors. The choice of informal sources of information was also assessed and 1,446 (96.4%) preferred family or the extended family.

Discussion

This is the first household survey conducted in the country on the perceived importance of information needs on BC. A validated interviewer-administered questionnaire, which was shown to be highly reliable, was applied on a representative sample of adults of the general public in the district of Colombo, Sri Lanka. The distribution of study sample by the level of education and marital status was similar to the adult population of the district of Colombo as found in the population census 2012 indicating the representativeness of the sample to the target study population (Department of Census and Statistics Sri Lanka, 2012).

Perceived importance of information needs on breast cancer among the adults in the general public

This study confirmed the degree of importance accorded by the general public of the most populous district of Sri Lanka on both groups of informational needs on BC that indicated their receptiveness to health education programs. However, the assessment of information needs among the adults in the general population indicated that they perceived ‘Factual information on breast cancer diagnosis and treatment’ to be more important by the study units than ‘Factual information on breast cancer prevention and early detection (screening and early diagnosis)’. This is an issue that should be given due consideration by the public health practitioners who should take every effort to improve the importance given by the public to seek information on diagnosis. Further analysis indicated that a higher proportion of females in the sample considered both categories of factual information as important compared to males ($p < 0.0001$) which can be viewed as a favourable

situation considering the fact that females are at most risk of BC. Moreover, the fact that females of younger ages perceiving the domain of prevention and early detection as more important ($p < 0.0001$) is also a favourable situation. This analysis pointed out that lower education groups ($p < 0.0001$) as a group to be targeted in improving the factual information on breast cancer prevention and early detection (screening and early diagnosis).

The information need most frequently identified as vital was information about the places at which BC screening is offered. Other highly rated needs addressed were whom to consult if any abnormalities show on the breast and the places which offer BC diagnostic services. In other factual information groups, symptoms of BC, risk factors and age for breast cancer self-examination are identified as the information needs of general public. The greater level of importance accorded to obtaining ‘Factual information on breast cancer diagnosis and treatment’ over and above ‘Factual information on breast cancer prevention and early detection (screening and early diagnosis)’ indicates that health education related to prevention needs strengthening.

Based on the highest importance being accorded to information needs related breast self-examination and where screening for breast cancer is offered indicate the potential for primary and secondary prevention of BC among members of the general public through provision of greater information.

There is paucity on health information needs on BC, particularly in South Asia. Many researchers have focused mainly on knowledge on BC which can be considered as indirect information on informational needs. Such studies have been mostly among women with breast cancer in various stages of disease and spread. The knowledge among them have been assessed based on the time of diagnosis (Dagner et al., 1997; Northouse et al., 1997; Kilpatrick et al., 1998), therapeutic modalities (Galloway et al., 1997; Graydon et al., 1997; Luker et al., 1996). Only a few studies have been performed among the general public where most were confirmed to the female gender. Furthermore, unlike the present study the subjects areas assessed have focused on fewer aspects. A study carried out by the Iranian Institute of Health Science Research (IHSR) (Montazeri et al., 2008) revealed that women’s awareness of breast cancer warning signs and effective screening methods were very inadequate. Vahabi (2011) in their study on Iranian women’s knowledge of breast cancer and screening has revealed that information about breast cancer, screening and physiological risk factors were lacking. Women having breast cancer in their first degree relatives required information mainly about the screening, treatment, risk factors and performing breast self-examination (Chalmers et al., 2003; Tunin et al., 2010; Stacey et al., 2002; Iredale et al., 2003). In the present study, similar needs arose as very important or important for adults in general public.

In the present study, among the demographic factors, sex showed significant association with information needs on ‘Factual information on breast cancer prevention and early detection (screening and early diagnosis)’

and 'Factual information on breast cancer diagnosis and treatment' with females perceiving both aspects of informational needs as more important than males. Similarly, the study identified that the perception of importance varies based on the age, educational level and the employment status of the study unit. Given the importance of all adults being educated on BC, the findings may be utilized to identify specific groups that need to be encouraged to obtain information on BC.

The study also assessed the best preferred method of communication of information on BC and the majority indicated television programmes as the electronic media and a book as the printed media. Therefore we propose that any educational efforts on BC to target the general public should be designed based on the current findings.

In conclusion, this study demonstrate that cognitive information needs on breast cancer related to 'Factual information on breast cancer prevention and early detection (screening and early diagnosis)' as well as "Factual information on breast cancer diagnosis and treatment" are viewed as highly important by the general public. It is recommended that specific informational needs on self-examination and screening facilities be instituted to target the public. These aspects were identified as important needs on BC.

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