

## A STUDY ON KNOWLEDGE AND AWARENESS OF BREAST CANCER AMONG FEMALE STUDENTS ALONGWITH ITS TREATMENT USING TRADITIONAL MEDICINE IN KASHMIR VALLEY

<sup>1</sup>DR. SYED SABAHAH ASHRAF, <sup>2</sup>DR. SHAYESTA RAHI AND <sup>3</sup>DR. BILAL AHMAD BHAT

<sup>1</sup>Regional Research Institute Of Unani Medicine, Naseem Bagh Campus, University of Kashmir, Hazratbal,  
Srinagar, Kashmir, J&K

<sup>2</sup>Department of Obstetrics and Gynaecology, Lalla Ded Hospital, GMC Srinagar, J&K

<sup>3</sup>Division of Social Science, FoFy, SKUAST-Kashmir, J&K

### ABSTRACT

*Breast cancer is one of the most common cancer among women in Kashmir valley and worldwide. Breast cancer patients in Kashmir are commonly presented at a relatively young age and with an advanced stage of disease. This could be due to lack of awareness, knowledge and beliefs about breast cancer and its management among females in Kashmir valley. The present study assessed the awareness and knowledge about the screening method (Breast self examination), risk factors and symptoms of breast cancer among 400 female students in Kashmir. The results of our study indicated that female students were well informed and aware about breast cancer in general but their knowledge of breast cancer symptoms was better than the risk factors of breast cancer. It was found that participant's understudy were having knowledge of common symptoms of breast cancer (71.75-90.25%) and the risk factors (46.75-85.75%). The study revealed that majority of the students knew that Breast self examination (BSE) is the most common and easy method of breast cancer detection but their knowledge regarding frequency and the appropriate time to practice BSE was not very good. Various herbal formulations in Unani system of medicine have been used for the prevention of breast cancer. A number of herbal drugs such as rehan, mulaithi, methi, alsic etc are being researched for their anti-cancerous properties. We also discuss in this paper, the traditional method of treating breast cancer. It is suggested that more educational programs should be designed to provide comprehensive information on breast cancer and BSE to improve female student's knowledge and awareness which can help in the early detection and reporting of breast cancer for the better treatment. Finally, it was reported that patients suffering from breast cancer told*

*the main socio-cultural factors like Ignorance, Stigma, Turmoil, Faith Healers, Myths and Misinformation, Shyness, Taboos, Non-availability of Female Oncologists and Late presentation contribute to the higher fatalities of women suffering from breast cancer in Kashmir valley.*

**Keywords:** *Breast cancer, breast self examination, carcinoma, Sartan-e-sadi, mortality, statistics.*

## INTRODUCTION

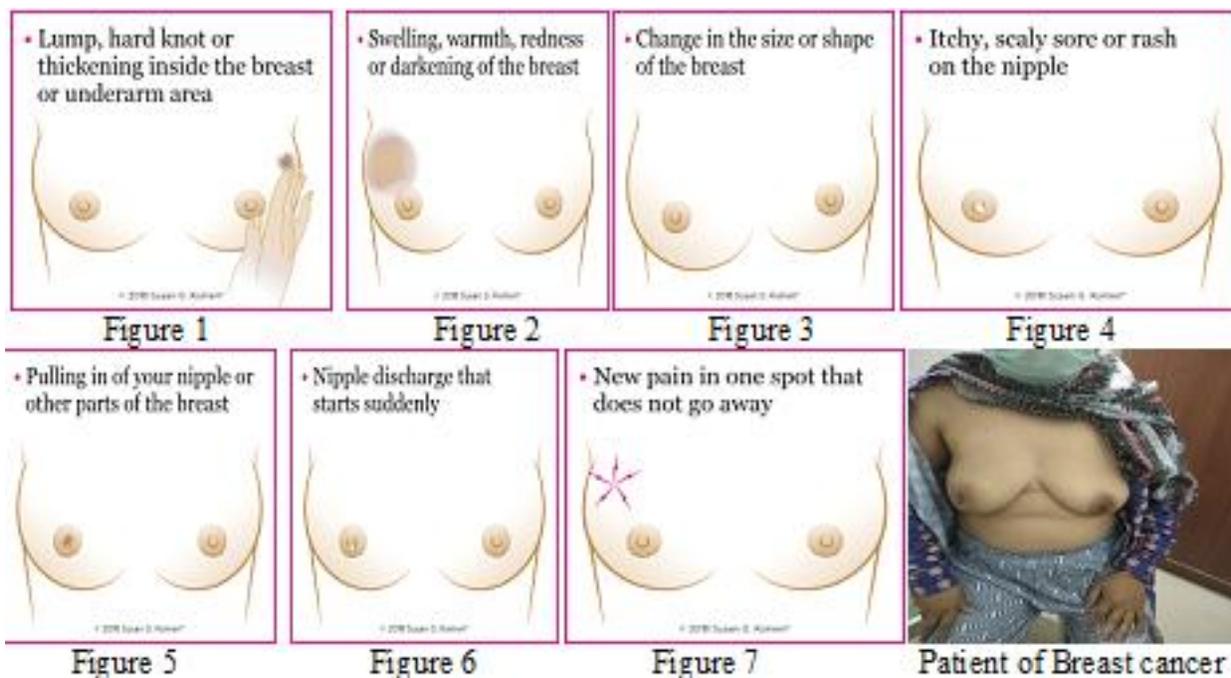
Cancer is one of the most dreaded diseases in the world and out of ten million new cases diagnosed every year, more than half are from developing countries. It is a leading cause of death among all racial and ethnic groups and the mortality burden is not distributed evenly among the various groups (ACS, 2009). It is a condition in which a group of cells grow abnormally forming a tumor and invade to other parts of the body. Cancerous cells have the ability to bypass the checkpoints in cell cycle (Fitzmaurice et al., 2015). It is observed that a number of factors are accountable for the development of cancer which causes the mutation of proto-oncogenes or tumor suppressor genes that allow a cancerous cell to row and divide uncontrollably. The studies (e.g., Agnihotri, 2017; Das, Kalita and Pal, 2017; Dwivedi, 2012 and Krishna, 2014) show that tobacco consumption, obesity, viral infections, radiation, stress, lack of physical activity, environmental pollutants and genetic factors are some of the factors which causes cancer. A lot of research all over the world is going on to develop the treatment strategies for cancer. A number of chemotherapeutic agents like Tamoxifen, Angiostatin, colchicine, etc are available in the market, which specifically target one or the other pathogenetic pathway of cancer (Kimyon C et al., 2017; Kohler et al., 2017). Radiotherapy is another treatment option for cancer in which specific cancer cells are killed (Vayne-Bossert et al., 2017). However, it is important to note that there is a big problem with cancer that it remains undetected until its last stage of metastasis which makes it quite difficult to target particular cancer cells that have spread to other body parts (Kim et al., 2017; Altman et al., 2017). Persons of low socio-economic status bear the greatest cancer burdens. The incidence of cancer is rising every year, and this is attributed to the changes in lifestyle and increase in life expectancy. There are various types of cancers and one among them is a breast cancer. Breast cancer is a malignant tumor (a collection of cancer cells) arising from the cells of the breast and predominantly occurs in women. Breast cancer is the leading cause of cancer associated death among women throughout the world (Al-Moundhri *et al.*, 2004), thus, making it the most common cause of female cancer death in both the developed and developing world. It has been reported that the most profound breast cancer risk factor is female gender, each year over 1.15 million women are diagnosed with breast cancer all over the world and more than a half million die from this disease (WHO, 2008). Despite the great progress made in the diagnosis and treatment of cancer, poor countries face lack of protective measures and estimates show that 50% of the people suffering from cancers are from these countries (Siddiqi and Preussmann, 1989). A woman's life time risk of developing breast cancer is about 1 in 8 or

approximately 12%. The main reason for breast cancer escalating mortality is lack of awareness and late diagnosis of disease (Pinnoti *et al.*, 1995, Parkin, 1994). Thus, World Health Organization has emphasized on raising awareness among women for early detection and reporting of breast cancer to increase life quality, survival and to overcome the ever increasing burden of this deadly disease. Carcinoma of the breast is the major killer of middle aged women in western countries. The main causes of Breast cancer are (i) Age: It is very rare below the age of 20. The highest incidence is found between 40-60 years of age. (ii) 2 Chromosomal abnormalities, found in short arm of chromosome 17 in women with the family history of carcinoma of the breast. BRCA-1 and BRCA-2 are genes associated with increased risk (iii) Diet, increased risk has been found in post menopausal obese women and it is due to increased synthesis of Estrogen in the body fat. Alcohol intake is associated with a 1.5 fold increased risk of breast cancer. Vitamin C may have a protective value. Increased intake of saturated fat and reduced intake of phytoestrogens increase risk (iv) Endocrine Causes a) Longer the cumulative period of menstruation more the risk (early menarche late menopause b) More the cumulative period of lactation better the protection (more children, each child breast fed longer. c) More abortions and each occurring later increases risk. d) More estrogen content in OCP and OCP taken early in the reproductive life increases risk. HRT (Hormonal Replacement Therapy) increases risk if estrogen content is higher and if taken for more than 5 years (v) Female sex itself is a risk factor, as only 1 percent of patients with breast cancer are males (vi) Geographical Carcino of breast is disease of white people, western women. It is rare in Japan and Tiawan. Genetic predisposition exists in a few cases especially in bilateral breast carcinoma. Majority of the tumors arise in the ductal epithelium (90%) which is called ductal carcinoma and about 10% arises with lobular epithelium (lobular cancer). Those that infiltrate basement membrane is called infiltrating and which do not is called non infiltrating.

## WARNING SIGNS OF BREAST CANCER

There's no special technique and we don't need training to check our breasts. Everyone's breasts are different, so get to know how our breasts normally look and feel. That way, it's easier to spot anything unusual. The warning signs of breast cancer are not the same for all women throughout the world. The most common signs of breast cancer are: Lump, hard knot or thickening inside the breast or underarm area. It is a matter of concern if one feel a lump, swelling in the breast, upper chest or armpit (Figure 1), swelling, warmth, redness or darkening of the breast (Figure 2), Change in the size or shape of the breast (Figure 3), Itchy, scaly sore or rash on the nipple (Figure 4), pulling in of your nipple or other parts of the breast (Figure 5), Nipple discharge that starts suddenly or occurs without squeezing the nipple or occurs in only 1 breast or Is bloody or clear (not milky) (Figure 6), new pain in one spot that does not go away (Figure 7).

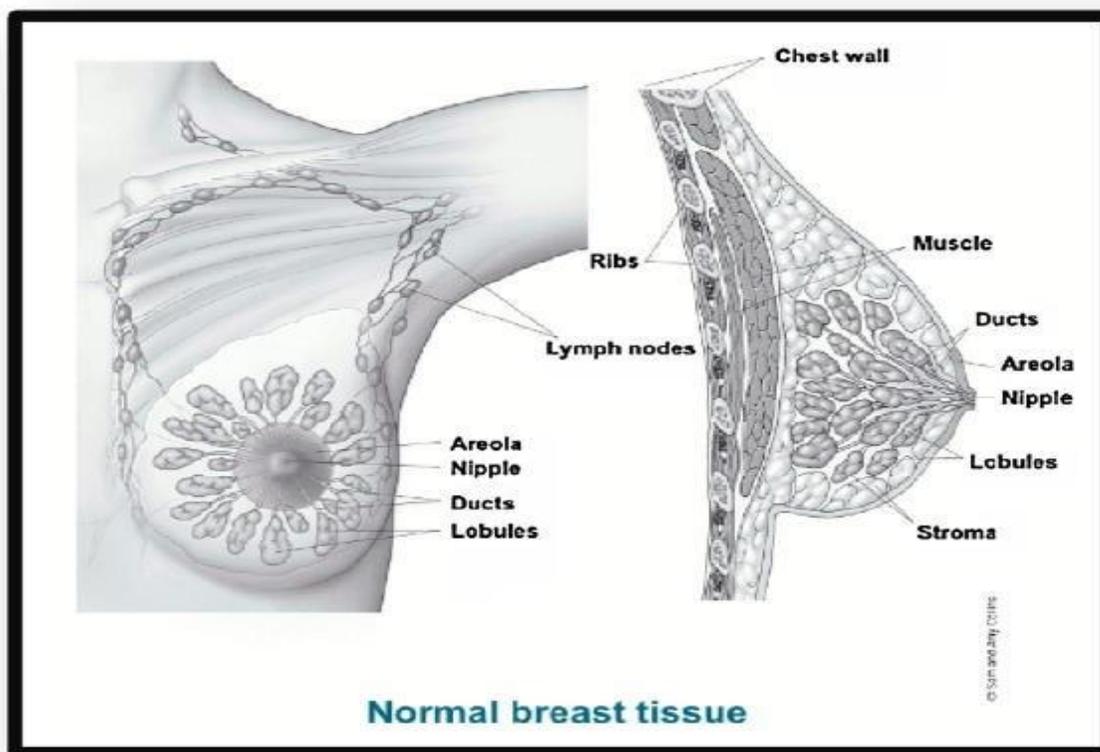
In the classical *unani* literature Breast cancer is described as *warme sartaane piston*, a form of *auraame baridah* classified as *warme saudawi*. *Unani* physicians have mentioned in the texts that the *warme sulb* usually develops in the *az'ae ratba* such as breast(pistaan), uterus(rehm), intestines, throat & lungs etc. which is why they are a common finding in females. Cancer breast is the commonest cancer in women in Europe, USA, Australia and in India it is second commonest cancer after cancer cervix. The treatment of breast cancer is based on the stage of diagnosis, a multidisciplinary approach involving surgery, radiation and medical oncology including chemotherapy or hormonal therapy is employed.



### UNANI VIEWPOINT OF BREAST CANCER

Cancer according to Unani medicine is due to sawda (black bile) and sawdawi mada develop into two as; tabayee mada sawda (normal black bile) which develop as warm e sulb (hard swelling) and if the tabayee mada sawda develops burning, it causes sartaan (Kitaabul Umdah). The well-known Unani physicians like; Jalinoos, Al Razi, Al Zahrawi and Ibn Sina have been explained their precious book about sartaan and its treatments. The first person who perform the classical removal of sartaan e sadi was Al Zahrawi (Saad, 2008). In the literature, we come across studies like Tabri, 1997; Zakaria, 2002 etc explaining the development of sartaan. The signs and symptoms of sartaan are (i) Presence of hard mass on breast, (ii) Colour of skin becomes reddish, blackish and hard (iii) Burning and pricking sensation in breast (Zakaria, 2002). There are a number of herbs mentioned in Unani classical books which posses anti-cancerous activity and scientifically proven to validated our Unani physicians as Kalonji (Gali-Muhtasib et al., 2004), Haldi (Aggarwal et al., 2004; LoTempio et al., 2005), Angoor (Zahra et al., 2013), Khulanjan

(Aswiyanti et al., 2016), Methi (Alkaabi, 2005), Kachnar (Mishra, 2003). The studies show that use of common *unani* herbs like Tomato leaves (*Lycopersicum esculentum*), *Mako* (*Solanum nigrum L*), *Flaxseeds* (*Linum usitassimum*), *Garlic* (*Alium sativum*), *Turmeric* (*Curcuma longa*), *Banafsha* (*Viola odorata*), *Fenugreek* (*Trigonella foenum*) possess antitumor activity.



A constellation of breast cancer risk factors have been identified and are classified as; Genetics/family history, Diet, Age at first birth, BMI, Age at menopause, Race/ethnicity, Exercise, Breast feeding, Height, Smoking. The prevention of breast cancer can be achieved by reducing the modifiable and the potentially modifiable risk factors. The Conventional breast cancer prevention includes (i) mammography, an important part of preventive care (ii) BSE (breast self examination), beginning in the 20s, women should be told about the benefits and limitations of BSE. The importance of prompt reporting of any new breast symptoms to a health professional should be emphasized. The logic for the earlier detection in an average risk women under age 40, of palpable tumors with CBE or BSE can lead to earlier therapy. The evidence supporting the value of CBE and BSE as methods of reducing breast cancer mortality is limited and mostly inferential (iii) CBE (clinical breast examination) (iv) chemoprevention, uptake of tamoxifen and raloxifen as chemo preventive agents is variable and optimal methods needs to be developed to explain the risk, the benefit/risk ratio of treatment (v) diet, the effect of individual components of diet is controversial. The risk of ER negative tumors may be reduced by high vegetable intake while

lowering fat intake may reduce both cancer risk and relapse after surgery, and (vi) physical activity, observational evidence shows that a physically active lifestyle after cancer treatment prevents relapse and reduces the risk of all cause mortality. However, the optimal exercise regime and timing are uncertain and randomized trials are required to assess the preventive benefits. The state of J&K has shown an increasing trend in the incidence of cancer and the the major sites of cancer in males are lungs, prostate, colorectal, stomach, esophageal and gastro esophageal tract, while in females major sites include breast, stomach, lungs, esophageal, colorectal, cervical and ovarian cancers (e.g., Wani et al., 2014; Yasmeen et al., 2010). In an alarming scenario, Jammu and Kashmir state has witnessed an unprecedented 87 percent rise in cancer cases during last 7 years, government figures reveal. According to official figures cancer cases in 2017 were recorded as 5731 which is 87 percent higher than the cases recorded 7 years ago in 2011 when 3057 such cases were witnessed. In a major health concern, the occurrence of breast cancer among women in Kashmir valley has risen considerably and its incidence showing an increasing tendency over the last couple of decades. Breast cancer has emerged as a major concern among the female population of the Kashmir Valley but there is no actual database available, yet preliminary indications point towards a rise. The Officials at the Oncology Department of SKIMS and Shri Maharaja Hari Singh hospital (SMHS) say that on an average 1-2 patients suffering from breast cancer alone come for the treatment every single day. The government, in an official communiqué, has admitted that cancer cases are on rise in Kashmir valley of J&K state. Tobacco is one of the major risk factor for majority of cancers and is probably leading to increase in the number of patients. Poor personal hygiene, unsanitary living conditions and low immunity are related with few cancers like cancer of cervix. The consumption of adulterated food, fruits and vegetables laden with pesticides and environmental pollutions are also a major risk factor. Many cancers like colon and breast are increasing due to change in lifestyle, late age at first child birth, obesity, fatty diet lower in fiber, increase consumption of red meat and sedentary contribution to it. The radiotherapy treatment was being delivered free of cost as per government policy and the poor patients, falling under the income group of less than Rs 20,000 per month, are given financial assistance under the cancer treatment management fund. Further, PET-CT facility has been made operational in the valley. There are many socio-cultural factors like Ignorance, Stigma, Turmoil, Faith Healers, Myths and Misinformation, Shyness, Taboos, Non-availability of Female Oncologists and Late presentation contribute to the higher fatalities of women suffering from breast cancer in Kashmir valley. In view of the above discussion and literature cited, we chose present study with an objective to know about breast cancer awareness and knowledge of risk factors among female students studying in higher educational institutions of Kashmir valley.

## METHODOLOGY

A survey was conducted in the year 2017-2018 in the Kashmir valley of J&K State. A total of 400 female students with no personal history of breast cancer and ability to understand the semi –structured questionnaire were recruited and randomly selected from various higher educational institutes of Kashmir valley. A verbal consent was obtained from all the students who agreed to participate in the study. The questionnaire was developed and validated based on information drawn from the literature available. Data were collected from 400 students who completely filled and returned the self administered questionnaire. The patients suffering from breast cancer were also interviewed in order to know the problems they face due to this disease. The collected data was analyzed using standard statistical tools with the help of SPSS (version 20.0) software.

## RESULTS AND DISCUSSION

The data presented in Table 1, reveals that a total of 329 (82.25%) correctly responded to the statement change in shape of breast (asymmetry) is a symptom of breast cancer, 358 (89.5%) correctly responded to the statement Breast lump is a symptom of breast cancer, 327 (81.75%) correctly responded to the statement Nipple discharge is a symptom of breast cancer, 287 (71.75%) correctly responded to the statement Nipple retraction is a symptom of breast cancer, 361 (90.25%) correctly responded to the statement Breast pain is a symptom of breast cancer and 331 (82.75%) correctly responded to the statement Lump or swelling in the armpit is a symptom of breast cancer. Statistically, it has been observed that in all statements there is a significant difference in the opinion of the respondents in all statements ( $p < 0.01$ ).

**Table 1: Knowledge of breast cancer symptoms.**

S.No.	Statements	Correct response (%)	Incorrect response (%)	P-value
1.	Change in shape of breast (asymmetry)	329 (82.25)	71 (17.75)	<0.01
2.	Breast lump	358 (89.5)	42 (10.5)	<0.01
3.	Nipple discharge	327 (81.75)	73 (18.25)	<0.01
4.	Nipple retraction	287 (71.75)	113 (28.25)	<0.01
5.	Breast pain	361 (90.25)	39 (9.75)	<0.01
6.	Lump or swelling in the armpit	331 (82.75)	69 (17.25)	<0.01

When the students under study were asked about their knowledge regarding BSE, it was found as shown in Table 2 that 246 (61.5%) participants were well informed that BSE is used as a screening method for breast cancer,

however, only 321 (80.25% ) knew the correct procedure to perform BSE. Only 352 (88 %) participants correctly identified that BSE should be performed monthly on a regular basis, though only 239 (59.75%) respondents understudy knew the correct timing for performing BSE. Statistically, it has been observed that in all statements there is a significant difference in the opinion of the respondents ( $p < 0.01$ ).

**Table 2: Knowledge of Breast Self Examination.**

S.No.	Variables	Correct response (%)	Incorrect response (%)	P-value
1.	Can BSE help in the early detection of breast cancer?	246 (61.5)	154 (38.5)	<0.01
2.	Do you know how to perform BSE?	321 (80.25)	79 (19.75)	<0.01
3.	What is the Frequency of BSE?	352 (88)	48 (12)	<0.01
4.	When is the appropriate time for performing BSE?	239 (59.75)	161 (40.25)	<0.01

The data presented in Table 3, shows that in response to statement Have you heard of Clinical Breast Examination (CBE), 80.25% respondent have knowledge, in response to statement Do you know that CBE is a useful tool for detection of breast cancer, 30.75% respondent have knowledge, in response to statement CBE is done using Ultrasound 42.25% respondents told and in response to statement How often should CBE be done, majority (32.75%) respondents told that they feel when abnormality is found on BSE. Statistically, it has been observed that in all statements there is a significant difference in the opinion of the respondents ( $p < 0.01$ ).

**Table 3: Knowledge and Practice of Clinical Breast Examination.( CBE)**

S.No.	Statement	Response	Frequency	%	P-value
1.	Have you heard of Clinical Breast Examination (CBE)?	Yes	321	80.25	<0.01
		No	79	19.75	
2.	Do you know that CBE is a useful tool for detection of breast cancer?	Yes	123	30.75	<0.01
		No	277	69.25	
3.	CBE is done using:	Ultrasound	169	42.25	<0.01
		Mammography	33	8.25	
		Hand	147	36.75	
		No Idea	51	12.75	
4.	How often should CBE be done?	Daily	18	4.5	<0.01
		Weekly	21	5.25	
		Monthly	41	10.25	
		Yearly	92	23	
		When abnormality is found on BSE	131	32.75	
		No Idea	97	24.25	

The data presented in Table 4, reveals that in response to statement Have you heard of mammography, 78.75% told yes, in response to statement, Is mammography a useful tool for the early detection of breast cancer, in response to statement, Is mammography a useful tool for the early detection of breast cancer, 61.75% respondents told yes, in response to statement, At what age should mammography be started, majority (31.75%) of the respondents told from 40 years, in response to statement, how often should mammography be done, majority (44.5 %) told yearly and in response to statement, Is there any Problem in doing mammography, majority ( 74.5 %) told that they are not old enough. Statistically, it has been observed that in all statements there is a significant difference in the opinion of the respondents ( $p < 0.01$ ).

**Table 4: Knowledge and Practice of Clinical Breast Examination.(CBE)**

S.No.	Statement	Response	Frequency	%	P-value
1.	Have you heard of mammography?	Yes	315	78.75	<0.01
		No	85	21.25	
2.	Is mammography a useful tool for the early detection of breast cancer?	Yes	247	61.75	<0.01
		No	110	27.5	
		No Idea	43	10.75	
3.	At what age should mammography be started?	From birth	7	1.75	<0.01
		From puberty	73	18.25	
		From 20 year	43	10.75	
		From 40 years	127	31.75	
		After menopause	123	30.75	
		No Idea	27	6.75	
4.	How often should mammography be done?	Weekly	9	2.25	<0.01
		Monthly	39	9.75	
		Yearly	178	44.5	
		After every 3 years	71	17.75	
		No Idea	103	25.75	
5.	Have you ever done a mammography?	Yes	3	0.75	<0.01
		No	397	99.25	
6.	Is there any Problem in doing mammography?	Not old enough	298	74.5	<0.01
		Financial constraint	73	18.25	
		Others	29	7.25	

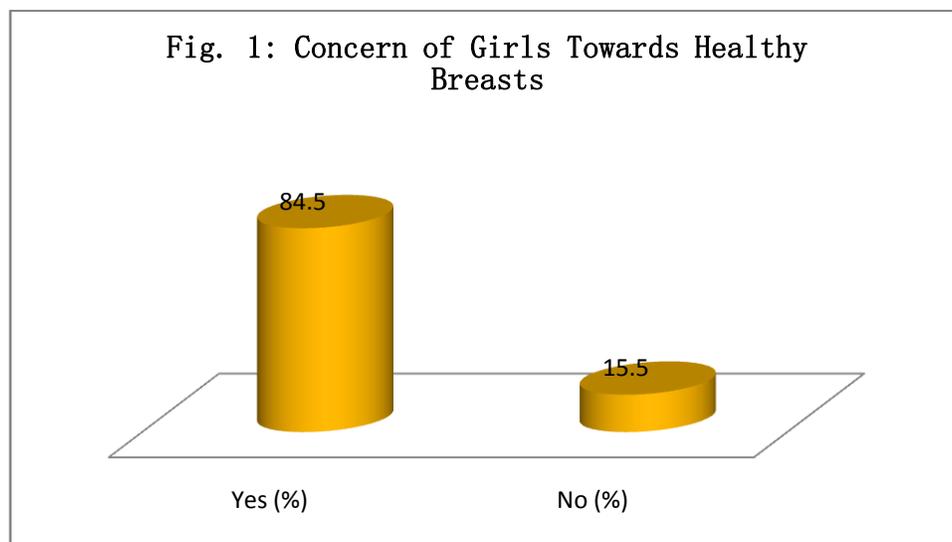
The data presented in Table 5, reveals that a total of 317 (79.25%) correctly responded to the statement old age is a breast cancer risk factor, 343 (85.75%) correctly responded to the statement family history is a breast cancer risk factor, 337 (84.25%) correctly responded to the statement cigarette smoking is a breast cancer risk factor, 339 (84.75%) correctly responded to the statement high fat diet is a breast cancer risk factor, 247 (61.75%) correctly responded to the statement no breast feeding is a breast cancer risk factor, 187 (46.75%) correctly responded to the statement early menses is a breast cancer risk factor, 252 (63.0%) correctly responded to the statement contraceptive use is a breast cancer risk factor and 241 (60.25%) correctly responded to the statement late

menopause is a breast cancer risk factor. Statistically, it has been observed that in all statements there is a significant difference in the opinion of the respondents ( $p < 0.01$ ).

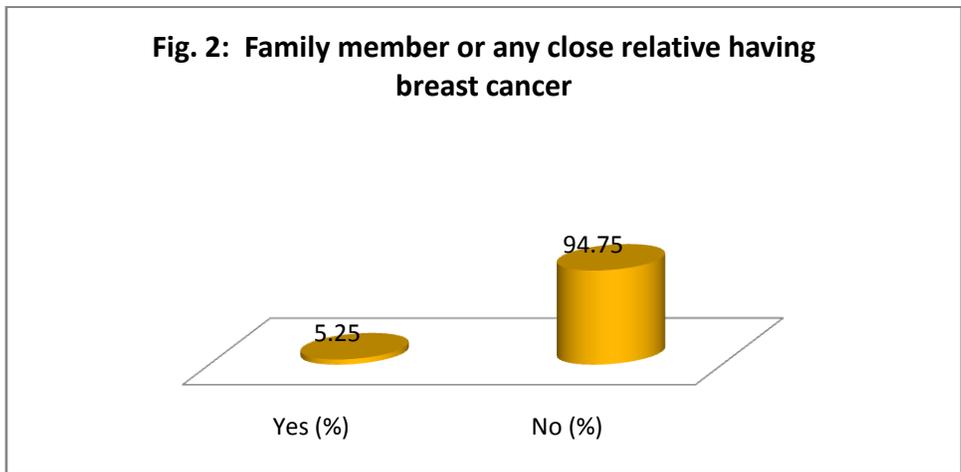
**Table 5: Knowledge of breast cancer risk factors**

S.No.	Statements	Correct response N (%)	Incorrect response N (%)	P-value
1.	Old age	317 (79.25)	83 (20.75)	<0.01
2.	Family history	343 (85.75)	57 (14.25)	<0.01
3.	Cigarette smoking	337 (84.25)	163 (15.75)	<0.01
4.	High fat diet	339 (84.75)	161 (15.25)	<0.01
5.	No breast feeding	247 (61.75)	153 (38.25)	<0.01
6.	Early menses	187 (46.75)	213 (53.25)	<0.01
7.	Contraceptive use	252 (63.0)	148 (37.0)	<0.01
8.	Late menopause	241 (60.25)	159 (39.75)	<0.01

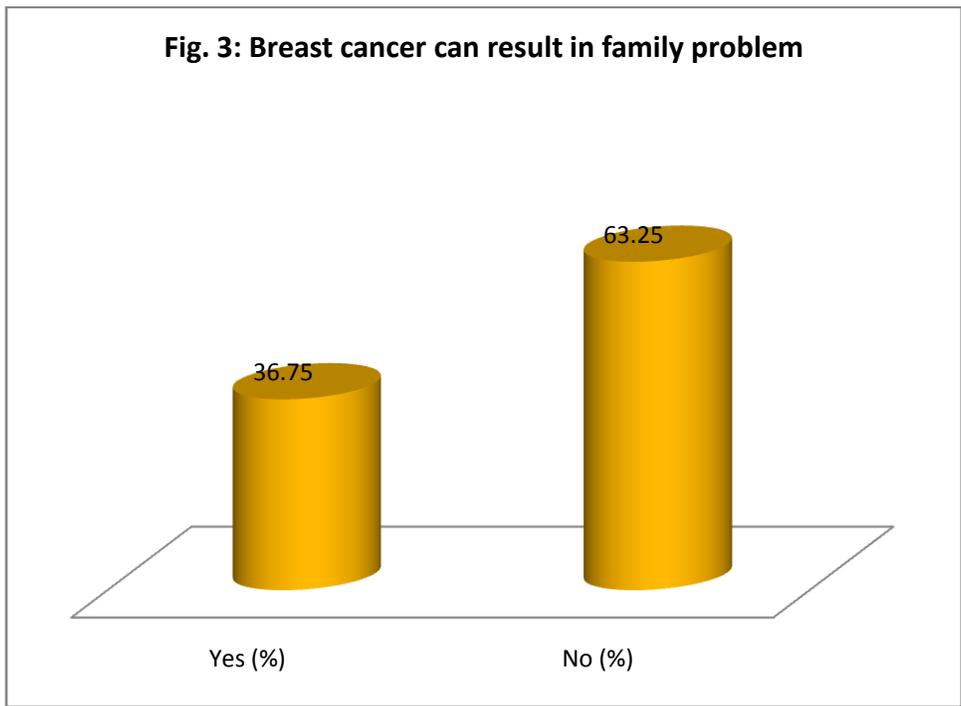
The data presented in Fig. 1, shows that majority (84.5%) respondents told that they are concerned towards breasts and want healthy breasts whereas only 15.5% respondents told that they are not concerned much towards breasts. Majority of girls feel breasts are related to fertility and is related to marriage or getting good life partner. Researchers report that infertile women had more dense tissues in the breast. The size of the breasts can be increased by taking proper diet and sufficient fruits regularly. Statistically, it has been observed that there is a significant difference in the opinion of the respondents ( $p < 0.01$ ).



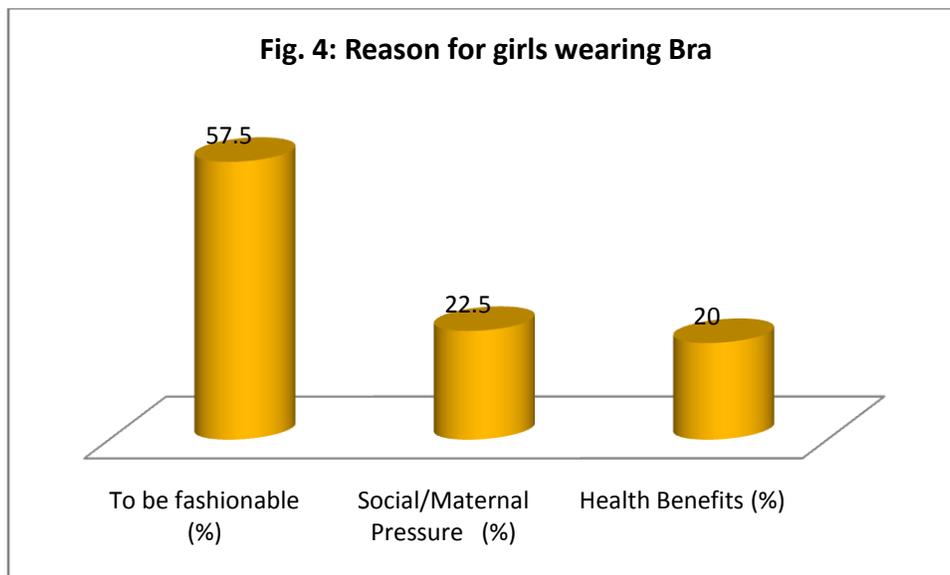
The data presented in Fig. 2, shows that majority (94.75%) respondents told that they do not have witnessed any family member or relative having breast cancer. The respondents who had any family member or relative suffering from breast cancer were more concerned towards this disease than others.



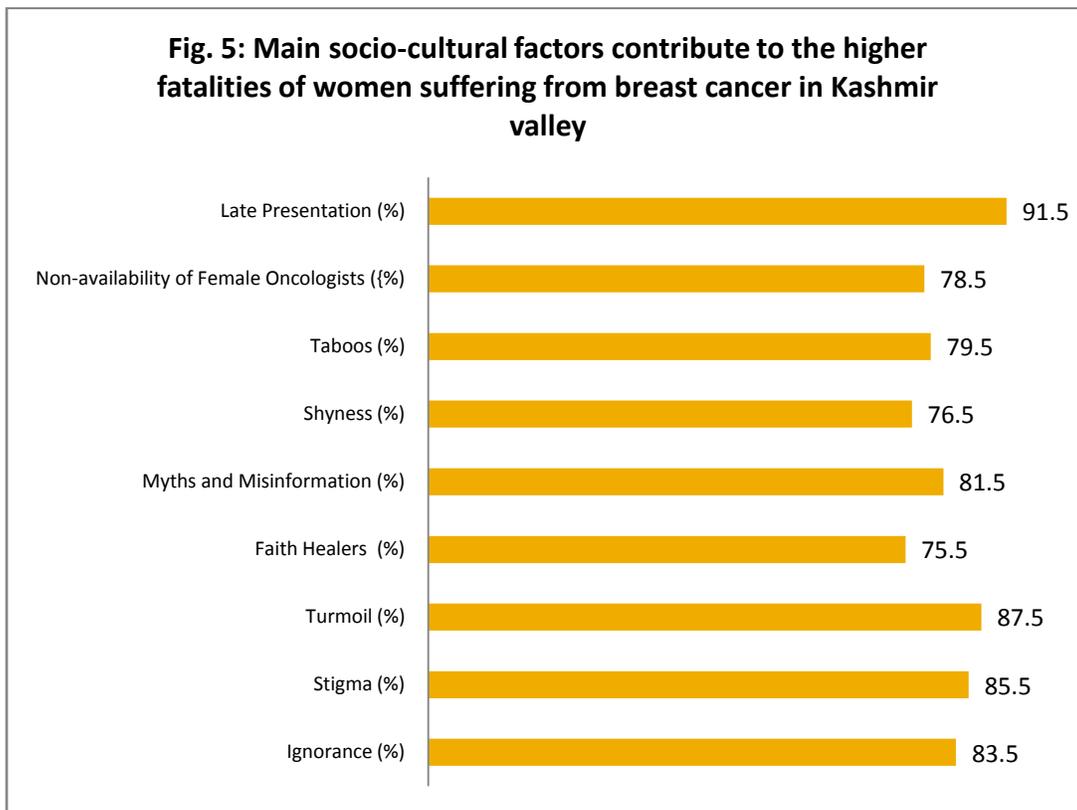
The data presented in Fig. 3, shows that majority (63.25%) respondents told that they do not believe breast cancer can create family problems. However, 36.75% believe it can create family disturbances and even can cause divorce. A breast cancer diagnosis can have a major impact on the whole family especially on the relationship of husband and wife if they are young. In Kashmir it is not considered a major cause of divorce but in some countries it is one of the cause of divorce.



The data presented in Fig. 4, shows that majority (57.5%) respondents told that they wear bra to be fashionable, 22.5% told they wear because of social/maternal pressure and 20% respondents told they wear bra for health benefits. Scientifically speaking, the most notorious research on bras and breasts came out few years ago. The researchers told that wearing a bra from an early age did nothing to help support the chest, reduce back pain or prevent breast sagging. Further, researchers believe that young women would gain more tone and supporting breast tissue if no bra were used. Majority of the people encourage wearing bra due to many reason like social, psychological etc. It is important bra should be constructed of soft fabric, having no wires, custom-fitted to each woman’s size and configuration. The Muslim scholars allow women to wear a bra to protect stiffness of women chest. However, if some women uses bra to keep the chest erected or pointed out, than its haraam because Islam does not allow women to show her body parts to anyone except to her husband. The corpse is typically wrapped generally in a white cloth to serve as the shroud. Men generally use three pieces of cloth and female five. That shows importance of wearing proper dress as per Islam. Kashmir is a Muslim dominated area and a woman who uses proper Islamic dress is making a statement about her identity. According to Islam, the proper Islamic dress code is practiced in order to build one's self-esteem and maintain one's self-respect and dignity amongst society and its members.



The data presented in Fig 5, reveals that majority (>75%) of the respondents understudy reported that the main socio-cultural factors contribute to the higher fatalities of women suffering from breast cancer in Kashmir valley are Ignorance, Stigma, Turmoil, Faith Healers, Myths and Misinformation, Shyness, Taboos, Non-availability of Female Oncologists and Late presentation .



## CONCLUSION

The cancer related studies provide prized information about the control of cancer in our region in particular and to the state of J&K in general. The information on leading sites of cancer in population of the state not only gives a hint about causation, but also provides an insight into the early detection and designing better treatment strategies of these leading cancers, besides initiating preventive measures for the general population. This study provided important data about the knowledge and awareness of risk factors and symptoms of breast cancer among female students in Kashmir valley. We found that the study participants were having better knowledge of common symptoms of breast cancer (71.75-90.25%) than the risk factors (46.75-85.75%). This finding is similar to the results of study conducted in Malaysia (Hadi *et al.*, 2010). The most widely known risk factor among participants was family history (85.75%), which is consistent with a cross-sectional study of knowledge and belief regarding breast cancer conducted among British women (Grunfeld *et al.*, 2002), but higher than the results of a study conducted in Yemen (Ba’Amer, 2010). The participants of our study (61.75%) believe that no breast feeding is also a cause of breast cancer which is consistent with the study (Danash and Al-Mohaimed, 2007). Further, more than 53.25 % of the respondents were unable to recognize early onset of menses as the complex risk factor of breast cancer. Good knowledge of breast cancer symptoms is very essential for early diagnosis and treatment of breast

cancer. Our study results revealed that female students had adequate knowledge about breast cancer symptoms and a vast majority of the participants (90.25%) considered breast pain as the most common presenting symptom. The second most common symptom reported by the students was breast lump (89.5%) which is higher than the results of other similar studies done in UK (85%) (Ba' Amer, 2010), Iran (57%) (Haji *et al.*, 2002) and Nigeria (53%) (Odusanya, 2001). It was also observed that only 28.25% female students under study did not know that nipple retraction is the warning sign of breast cancer. This increased awareness about the early sign, symptoms and risk factors of breast cancer among female students could be attributed to their age and educational level as reported in the literature (Hadi *et al.*, 2010; Bresolw *et al.*, 1997 and Paul *et al.*, 1999). This study also assessed the knowledge of Breast self examination (BSE) and (CBE) among the study students under study, one of the important steps for identifying breast tumors at an early stage (Marinho *et al.*, 2003). Regular practice of BSE could protect women from severe morbidity and mortality due to Breast cancer. It is noticed from our study that 61.5% respondents believed that BSE could help in early detection of breast cancer. Majority of the (92.5%) respondents reported that Kashmir conflict is a one of the major health issue and cause of fatal diseases like cancer. On interacting with breast cancer patients it was recorded that patients suffering from breast cancer in Kashmir valley told that the socio-cultural factors like Ignorance, Stigma, Turmoil, Faith Healers, Myths and Misinformation, Shyness, Taboos, Non-availability of Female Oncologists and Late presentation add to the higher fatalities of women suffering from breast cancer. The data obtained suggest that we need more education programs on BSE, screening method and traditional method of treatment of breast cancer to increase the knowledge and awareness among students of Kashmir valley which can help in the early detection and reporting of breast cancer for the better treatment.

## RECOMMENDATIONS

### (i) Science Education

Ignorance being the main factor behind the growing number of fatalities in rural areas of Kashmir valley, education can go a long way in controlling this disease.

### (ii) Female expertise needed

Due to a strong grip of traditions, females in rural areas of Kashmir due to religious/cultural issues feel shy and hesitant of getting examined by a male doctor. So there is a strong need of female oncologists. There is an increasing trend of females opting for pediatrics, gynecology or dermatology in Kashmir. The need of the hour is that more and more females excel in critical fields of oncology especially breast cancer. Kashmir need female

specialists for treating breast tumors at appropriate time. This will definitely impact the survival years of the patients.

**(iii) Organization of awareness camps by female experts**

In Kashmir valley, dedicated breast cancer screening clinics are nonexistent and hence increased breast cancer awareness camps by female experts can be a hope to fight this disease as rural women especially share their problem with their peers. Many of the myths associated with breast cancer in Kashmir like breast cancer being infectious, non-treatable and non-curable, and the fear of breast removal can be removed.

**(iv) Role of Non Government Organizations**

There are a number of NGO's working on different fronts in Kashmir valley but very few NGO's are working actively in terms of cancer awareness, screening, detection and treatment. So there is a need of more and more organizations for unfortunate cancer patients. Further these organizations need to be funded sufficiently.

**(v) Clinicians and religious persons work together**

The clinicians and religious persons work together within the context of religious beliefs to enhance early detection and survival from breast cancer. The studies show that women who were less educated and older, correlated strongly with the intention to delay presentation of a self-discovered breast lump.

**(vi) Resolution of the Kashmir conflict**

The state government of Jammu and Kashmir, Union Government of India, Pakistan and the international bodies should make sincere efforts to resolve the burning issue of Kashmir without any delay because the worst sufferers of this turmoil are the women folk and their health.

**(vii) Media's Role in Creating Awareness on Health**

Media is critical to decreasing cancer-related stigma, raising cancer awareness, and disseminating cancer education. We need a well developed communication system in terms of mass media to disseminate the breast health education in Kashmir valley.

**Acknowledgement:** The authors acknowledge with thanks the breast cancer patients who shared their views on the topic and the support of the students who participated in this study.

## Conflict of interests

The authors declare that there is no conflict of interest.

## REFERENCES

1. ACS (2009). *Cancer Facts and Figures 2009*.
2. Aggarwal S, Takada Y, Singh S, Myers JN, Aggarwal BB. Inhibition of growth and survival of human head and neck squamous cell carcinoma cells by curcumin via modulation of nuclear factor-KB signaling. *International Journal Cancer*.2004;111:679-692.
3. Agnihotri V, Gupta A, Kumar R, Upadhyay AD, Dwivedi S, Kumar L, et al. Promising link of HLA-G polymorphism, tobacco consumption and risk of Head and Neck Squamous Cell Carcinoma (HNSCC) in North Indian population. *Human immunology*. 2017 Feb;78(2):172-8. PubMed PMID: 28040535. Epub 2017/01/04. eng.
4. Alkaabi AAA, Al-Falasi SA, Daoud S. Chemo preventive activities of *Trigonella foenum graecum* (Fenugreek) against breast cancer. *Cell Biology International*. 2005;29(8):687-94.
5. Al-Moundhri A, Al-Bahrani B, Pervez I . The outcome of treatment of breast cancer in a developing country—Oman. *Breast*. 2004; 13(2): 139–145.
6. Altman AD, Lambert P, Love AJ, Turner D, Lotocki R, Dean E, et al. Examining the Effects of Time to Diagnosis, Income, Symptoms, and Incidental Detection on Overall Survival in Epithelial Ovarian Cancer: Manitoba Ovarian Cancer Outcomes (MOCO) Study Group. *International journal of gynecological cancer : official journal of the International Gynecological Cancer Society*. 2017 Jul 12. PubMed PMID: 28704327. Epub 2017/07/14. eng.
7. Aswiyanti Asri, Susanto Winarko Antiproliferative Activity by Ethanolic Extract of Red *Alpinia galanga* (L) Willd in Inoculated Breast Carcinoma Cells of C3H Mice. *Journal of Advances in Medical and Pharmaceutical Sciences* 2016;5(4): 1-9.
8. Ba' Amer A A. Awareness of breast cancer and BSE among Yemeni university students. *Asian Pacific Journal of Cancer Prevention*. 2010; 11:101-105.
9. Bresolw RA, Serkin JD, Frey CM, Kessler LG. Americans knowledge of cancer risk and survival. *Preventive Medicine*. 1997; 26: 170-177.
10. Danash K.F, Al-Mohaimed A. Knowledge, attitude, and practice surrounding BC and screening in female teachers of Buraidah, Saudi Arabia. *International Journal of Health Sciences*. 2007; 1: 75-85.

11. Das V, Kalita J, Pal M. Predictive and prognostic biomarkers in colorectal cancer: A systematic review of recent advances and challenges. *Biomedicine & pharmacotherapy = Biomedecine & pharmacotherapie*. 2017 Mar;87:8-19. PubMed PMID: 28040600. Epub 2017/01/04. eng.
12. Dwivedi S, Goel A, Mandhani A, Khattri S, Pant KK. Tobacco exposure may enhance inflammation in prostate carcinoma patients: an explorative study in north Indian population. *Toxicology international*. 2012 Sep;19(3):310-8. PubMed PMID: 23293472. Pubmed Central PMCID: PMC3532779. Epub 2013/01/08. eng.
13. Fitzmaurice C, Dicker D, Pain A, Hamavid H, Moradi-Lakeh M, MacIntyre MF, et al. The Global Burden of Cancer 2013. *JAMA oncology*. 2015 Jul;1(4):505-27. PubMed PMID: 26181261. Pubmed Central PMCID: PMC4500822. Epub 2015/07/17. eng.
14. Gali-Muhtasib H, Diab-Assaf M, Boltze C, Al-Hmaira J, Hartig R, Roessner A, et al. Thymoquinone extracted from black seed triggers apoptotic cell death in human colorectal cancer cells via a p53- dependent mechanism. *International Journal of Oncology*. 2004; 25: 857-866.
15. Grunfeld EA, Ramirez AJ, Hunter MS, Richards MA. Women's knowledge and beliefs regarding breast cancer. *British Journal of Cancer*. 2002; 86: 1373-1378.
16. Hadi MA, Hassali MA, Shafie AA, Awaisu A. Evaluation of Breast cancer awareness among female university students in Malaysia. *Pharmacy Practice*. 2010; 8(1):29-34.
17. Hadi MA, Hassali MA, Shafie AA, Awaisu A. Knowledge and perception of Breast cancer among women of various ethnic groups in the state of Penang: A cross-sectional survey. *Medical Principles and Practice*. 2010; 19:61-67.
18. Haji Mahmoodi M, Montazeri A Jarvandi S, Ebrahim M, Haghghat S, Harichi I. Breast self examination: Knowledge attitudes and practices among female healthcare workers in Tehran, Iran. *Breast Journal*. 2002; 8(4):222-225.
19. Ibn-Sina. *Al-Qanoon Fit tib*, Urdu translation, by Hkm. Ghulam Hussain Kantoori. Published by Idara Kitab-Us- Shifa New Delhi, India. 2010; 4:1278-1280
20. Kim J, Bamlet WR, Oberg AL, Chaffee KG, Donahue G, Cao XJ, et al. Detection of early pancreatic ductal adenocarcinoma with thrombospondin-2 and CA19-9 blood markers. *Science translational medicine*. 2017 Jul 12;9(398). PubMed PMID: 28701476. Epub 2017/07/14. eng.
21. Kimyon Comert G, Turkmen O, Karalok A, Basaran D, Bulbul D, Turan T. Therapy Modalities, Prognostic Factors, and Outcome of the Primary Cervical Carcinosarcoma: Meta-analysis of Extremely Rare Tumor of Cervix. *International journal of gynecological cancer : official journal of the International Gynecological Cancer Society*. 2017 Jul 13. PubMed PMID: 28708788. eng.

22. Kohler BC, Waldburger N, Schlamp K, Jager D, Weiss KH, Schulze-Bergkamen H, et al. Liver cancers with stem/progenitor-cell features - a rare chemotherapy-sensitive malignancy. *Oncotarget*. 2017 Jun 05. PubMed PMID: 28709146. eng.
23. Krishna A, Singh RK, Singh S, Verma P, Pal US, Tiwari S. Demographic risk factors, affected anatomical sites and clinicopathological profile for oral squamous cell carcinoma in a north Indian population. *Asian Pacific journal of cancer prevention : APJCP*. 2014;15(16):6755-60. PubMed PMID: 25169521. Epub 2014/08/30. eng.
24. LoTempio MM1, Veena MS, Steele HL, Ramamurthy B, Ramalingam TS, Cohen AN, et al. Curcumin suppresses growth of head and neck squamous cell carcinoma. *Clinical Cancer Research*. 2005; 11:6994-7002.
25. Marinho LA, Costa-Gurgel MS, Cecatti JG, Osis MJ. Knowledge, attitude and practice of Breast Self Examination in health centres. *Rev Saude Publica*. 2003; 37(5):576-578.
26. Mishra R, Kaur G. Aqueous ethanolic extract of *Tinospora cordifolia* as a potential candidate for differentiation based therapy of glioblastomas. *Plos One*. 2013; 8(10): 1-13
27. Munjal YP, Sharma SK, Agarwal AK, Gupta P, Kamath SA, Nadkar MY, et al. *API Textbook of Medicine*. Edn 9, Vol. 2, The Association of Physicians of India, JP Brothers Medical Publishers (P)Ltd., 2012.
28. Odusanya OO. Breast cancer: knowledge, attitudes and practice of female school teachers in Lagos, Nigeria. *Breast Journal*. 2001; 7, 171-75.
29. Parkin DM, Cancer in developing countries. *Cancer Survey*. 1994; 19-20: 519-56.
30. Paul C, Barratt A, Redman S, Cock-burn J, Lowe J. Knowledge and perception about breast cancer incidence, fatality and risk among Australian women. *Australian New Zealand Journal of Public Health*. 1999; 23: 394-400.
31. Pinotti JA, Barros AC, Hegg R, Zeferino LC. Breast cancer program in developing countries. *Breast diseases*. 1995; 8: 243-250.
32. Saad, B, Azaizeh H, Said O. Arab Herbal Medicine. *Botanical Medicine in Clinical Practice*. 2008; 4: 31
33. Shahid U. Herbal Treatment Strategies for Breast Cancer. October, 2013. [www.esciencecentral.org/ebooks](http://www.esciencecentral.org/ebooks).
34. Siddiqi M & Preussmann R (1989). Oesophageal cancer in Kashmir – an assessment. *Journal of Cancer Research and Clinical Oncology*; 115: 111-7.
35. Tabri AHBM. Al-moalijaate Buqraatiya. Part II, 1997. P 245
36. Vayne-Bossert P, Haywood A, Good P, Khan S, Rickett K, Hardy JR. Corticosteroids for adult patients with advanced cancer who have nausea and vomiting (not related to chemotherapy, radiotherapy, or surgery). *Cochrane database of systematic reviews (Online)*. 2017 Jul 03;7:CD012002. PubMed PMID: 28671265. Epub 2017/07/04. eng.

37. Wani M, Jan F, Khan N, Pandita K, Khurshid R, Khan S. Cancer trends in Kashmir; common types, site incidence and demographic profiles: National Cancer Registry 2000-2012. Indian journal of cancer. 2014 April 1, 2014;51(2):133-7. World Health Organization: Cancer.
38. Yasmeen J, Qurieshi MA, Manzoor NA, Asiya W, Ahmad SZ. Community-based screening of cervical cancer in a low prevalence area of India: a cross sectional study. Asian Pacific journal of cancer prevention : APJCP. 2010;11(1):231-4. PubMed PMID: 20593962. Epub 2010/07/03.eng.
39. Zahra Esfahanian *et al.* Evaluation of Anticancer Activity of Fruit and Leave Extracts from Virus Infected and Healthy Cultivars of *Vitis vinifera*. Cell journal(Yakhteh), 2013: 15(2); 116-123.
40. Zakaria Rhazi. Kitab Al-Hawi. Urdu Translation, Published by Central Council for Research in Unani Medicine. Ministry of Health & Family Welfare.of India New Delhi.2002; 12: 9-24.