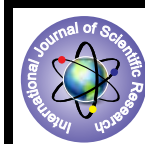


Health College Students 'knowledge about Breast cancer & Vitamin D in Riyadh City



Healthcare

KEYWORDS :

Dr. Ahlam Albuhairan

Assistant Prof. Hematology and Medical Genetic. College of Applied Medical Science. King Saud University. Kingdom of Saudi Arabia

Dr. Amany S. Badawy

Assistant Prof. of Maternal & Newborn health Nursing, Faculty of Nursing, Zagazig University. Zagazig. Egypt Corresponding Author

Prof. Dr. Salma Moawad

Professor of Maternity & Gynaecological Nursing, Diploma in Family Planning Licensed Midwife Family Planning Practitioner, College of Nursing. . King Saud University. Kingdom of Saudi Arabia

ABSTRACT

Breast cancer is an important public health problem on the grounds that it is frequently seen and it is a fatal disease, Breast cancer is the most prevalent form of cancer in the Kingdom of Saudi Arabia. Ecological studies have associated high levels of vitamin D might reduce the risk of breast cancer and mortality rates. This study aim to assess health college students' knowledge, regarding relation between breast cancer and vitamin D. A cross-sectional descriptive study was carried out between Jan 2014 to October 2014 among Health Colleges' female students at Riyadh city. The results of this study shows that the majority of the studied sample (46.9%) was aged 20 to 21 years & the study sample (89.1%) were Saudi Nationality, knowledge of the study sample regarding relationship between vitamin D and breast cancer: more than half of the sample answered I don't know 54.4% , 35.5% answered yes and 15.1% answered no. A chi-square test was used to test the association between socio-demographic data and exposure to the sunlight to get vitamin D & Calcium no significant association observed between age and exposure to the sunlight to get vitamin D & Calcium (X^2 3.411, $P=0.906$). A highly significant related to this variable and Nationality, exposed to sunlight, put sun block and take diet rich with Vitamin D & Calcium. A significant association between cover when exposed to sunlight and marital status (X^2 10.680, $P=0.0383^$). Conclusion our findings suggests that the health college students do not have good knowledge about the predisposing factors, signs & symptoms and methods of early detection and the relation between vitamin D and breast cancer. It is necessary to introduce preventive measures about breast cancer, vitamin D ... etc. Further research is also needed to compare between public and college student's knowledge, attitudes and practices regarding breast cancer and its relationship with vitamin D.*

Introduction

Breast cancer is an important public health problem on the grounds that it is frequently seen and it is a fatal disease, it accounts for 31% of cancers among women throughout the world, and 19% of death among women due to cancer are attributed to it. It is estimated that 519,000 women died in 2004 due to breast cancer, and although breast cancer is thought to be a disease of the developed countries. Breast cancer is the most prevalent form of cancer in the Kingdom of Saudi Arabia accounting for 11% of all female cancer^(1, 2). A with many other cancers, the etiology of breast cancer appears to be multifactorial. Both endogenous and exogenous factors are known to increase breast cancer risk. Age, family history, reproductive factors, and a previous history of benign breast disease have all been identified as determinants of risk⁽³⁾.

Ecological studies have associated high levels of sunlight exposure with low breast cancer incidence and mortality rates^(4, 5). These observations, together with experimental evidence showing anti-carcinogenic properties of vitamin D, have led to the hypothesis that high levels of vitamin D might reduce the risk of breast cancer. Many studies have examined the effects of vitamin D on mammary carcinogenesis in vitro and in animal models, and the data supports a protective role for vitamin D in breast cancer development.

Vitamin D is produced in the skin through the conversion of 7-dehydrocholesterol to pre-vitamin D₃ following sufficient exposure to ultraviolet B (UV-B) radiation from sunlight. Vitamin D is also found in supplements and a few foods (e.g., fatty fish, fortified milk). Vitamin D from sun, diet, and supplements undergoes hydroxylation in the liver to the circulating form 25-hydroxyvitamin D (25(OH)D). Breast cells, among other cells in the body, are capable of locally converting 25(OH) D to the active hormone 1,25-dihydroxyvitamin D (1,25(OH)₂D), which has been shown in laboratory studies to have anti-carcinogenic properties^(6, 7, 8). Several observational studies and 2 meta-analyses have reported some inverse associations between vitamin D intake (from diet

or supplements) and breast cancer risk, often among specific subgroups only. Although not without limitations, serum 25(OH) D is considered to be the best measure of vitamin D and reflects both dietary sources and cutaneous production. Meta-analyses have found no association between pre-diagnosis serum 25(OH) D levels and breast cancer risk, although an inverse association was found when case-control studies with post diagnosis 25(OH) D measures were included^(9, 10, 11).

Several external tissues in the body, including the breast, contain the 1- α -hydroxylase enzyme required for generation of the active vitamin D metabolite, 1, 25(OH)₂D, from circulating 25(OH) D. The concentration of circulating 25(OH) D appears to be the key factor regulating tissue-specific synthesis of the active form of vitamin D. The locally synthesized 1, 25(OH)₂D can bind to VDRs present in the breast epithelium to regulate the expression of many genes. In addition, breast cells also contain 24-hydroxylase enzyme (CYP24), which converts 1, 25(OH)₂D into less active metabolites such as 24, 25-dihydroxyvitamin D₃ and 1, 24, 25-trihydroxyvitamin D₃. Therefore, breast cells contain all the components of a vitamin D signaling axis that coordinates the local synthesis and metabolism of one, 25(OH)₂D and its signal transduction via VDRs.

Moreover, high serum levels of dietary vitamin D were inversely related to risk of breast cancer in a dose dependent manner. Studies considering factors that influence the practice of cancer prevention in women have begun to determine the attitudes, beliefs, and demographic characteristics of women. Several researches have also investigated various frameworks related to healthy behaviors such as Health Belief Model (HBM). The Health Belief Model (HBM) assumes that an individual's perception of the susceptibility and severity of an illness produces the readiness to take a health action to reduce the health threat. The model includes four dimensions: (a) perceived personal susceptibility to a disease, (b) perceived severity if contracted the disease, (c) perceived benefits of a particular health action and (d) perceived barriers taking a particular health action. The concept

of health motivation, that is defined, as an individual's health concern will result in behaviors to promote health, was later added into the HBM ⁽¹²⁾. Early detection has been shown to significantly lower mortality and promote women's overall quality of life. Thus, making cancer screening information and services available to women is essential for reducing high rates of cancer and cancer deaths.

This study will be conducted on female students of selected health colleges in Riyadh city. The reasons those students were chosen to be the study population are; a) this study aim to assess health college students' knowledge, regarding relation between breast cancer and vitamin D, since the general population is much dependent on the advice and motivation of the health professionals due to information asymmetry, b) most health policy makers are health professionals, so if somehow this group can be motivated, then they will put public health problems in a way to be addressed more efficiently. In addition, educating young females about early diagnostic method of breast cancer is critically important to increasing their breast cancer awareness and practice of breast self-examination at an early age thus increasing the probability of continuing it later ^(13,14).

Objectives of the Study:

Assess the knowledge of health colleges' female students about breast cancer in Riyadh City.

Explore the level of knowledge of the students regarding vitamin D and breast cancer.

Methodology:

Study Design:

A cross-sectional descriptive study was carried out between Jan 2014 and October 2014 among Health Colleges' female students at Riyadh city.

Questionnaire Design:

A self-administer questionnaire prepared by the researchers was employed. The questions were partly drawn using information about breast cancer and vitamin D intake from the literature. Pretest was conducted in 10 female health college students, some questions were modified to improve clarity, these 10 students were not part of the study population. The questionnaire was of four parts; the FIRST was to elicit socio-demographic data such as age, level of study, nationality, marital status and menstrual history. The SECOND part of the questionnaire was composed of questions related to knowledge about breast cancer causes, types, prevention, risk factors (4 items), and 11 items of different statements of relative risk for breast cancer were included and they were to generate "yes", "no", or "I don't know" response. The THIRD part consisted of 7 questions related to signs and symptoms and 5 questions regarding the knowledge about methods of early detection of breast cancer. While the FOURTH part was composed of 9 questions including queries about the relationship between vitamin D and breast cancer which included questions related to if there is a relation between vitamin D and breast cancer, and did the student undergo any test for vitamin D deficiency, does she consume food rich in vitamin D and calcium or any vitamin D supplement, as well as questions regarding exposure to healthy sun light, and if while doing so the student applies sun block, and finally a question about the sources of her information.

Sample Size:

There are approximately 311 students from the college of nursing, college of applied medical sciences and college of medicine from the 3rd and 4th years, who agreed to participate in the study and who filled in the questionnaire completely. The questionnaire was distributed in the waiting area after informing them about the aim and objectives of the study the students were asked to participate in answering the questionnaire.

Data Collection:

At the beginning the aim of the study was informed to the targeted health college students, and then every student of the 3rd and 4th year was invited to participate and to complete the questionnaire. An informed consent was signed by those who agreed to participate in the study

Instrument & Scoring System:

Socio-demographic characteristics included age, college, marital status... etc. For knowledge of breast cancer, the total score was 38. A score of 0-25 was considered a "fair" level of knowledge; 26-29 was considered a "good" level of knowledge, 30-33 was considered a "very good" level of knowledge, while 34-38 was considered an "excellent" level of knowledge.

Ethical Consideration:

Each participant was well informed about the aim and potential benefit of the study and their consent and confidentiality was ensured.

Limitation of the Study:

The proposed study population was a specific group; they are the highly educated and not merely representing the general population of the country. However, by assessing the knowledge, attitude and practice of health college students we can set a standard and can compare the knowledge and attitude in the general lower educated group.

Data Analysis

To analyze the collected data we used Statistical Package for Social Sciences (SPSS) program version 22 for data entry then data were analyzed. Data were coded and transferred into specially designed formats. The following statistical analyses were performed:

- A. Descriptive analysis, which included frequency, percentage, means and standard deviation.
- B. Significant chi -square were used to test for significance difference between study Socio-demographic data, marital status & Knowledge of vitamin D & breast cancer. The level of significance selected for this study was 0.01 and 0.05

Result

Table (1) frequency distribution of the study sample according to Socio- demographic data.

	Frequency/ N = 311	Percent/%
Student Age		
< 20	30	9.6
20 – 21	146	46.9
22 – 23	101	32.5
24- 25	28	9.0
>25	6	1.9
Mean: 24.662 ±.SD 86022		
Nationality		
Saudi	277	89.1
Non Saudi	34	10.9
Marital status		
Single	238	76.5
Married	58	18.6
Divorced	10	3.3
Widow	5	1.6
Study Level		
Level Three	5	1.6
Level four	70	22.5
Level five	39	11.9
Level six	79	25.4
Level seven	41	13.2
Level eight	79	25.4
Family Income		
Weak	7	2.3
Average	163	52.4
excellent	141	45.3

The majority of the studied sample (46.9%) was aged 20 to 21 years, 32.5% were aged of 22 to 23 years, while 9.6 % of the study sample their age was less than 20 years aged and only 1.9 % were younger than 25 years old. With regard to the educational level of the student, 25.4% in level six & eight, 22.5 % were fourth level, and 1.6% in level three. The majority of the study sample (89.1%) were Saudi Nationality, As regard to the marital status, it was found that 76.5% single, 18.6% was married while 52.4% had Average income (Table 1).

Table (2) frequency distribution of the study sample according to menstrual history.

	Frequency N = 311	Percent %
Menstrual history		
Regular	176	56.6
Irregular.	135	43.4
Age at Menarche		
< 13	143	46.0
13 – 16	166	53.4
> 16	2	0.6
Mean 15.466±SD 0.5114		
Menstrual duration		
3- 5	178	57.2
6 – 8	125	40.2
> 8	8	2.6
Pain during Menstruation		
Yes	162	41.0
No	23	17.0
Sometimes	126	42.0

Table 2 represents the student's distribution according to the menstrual history, results of the study revealed that the majority of the students had the regular menstrual cycle 56.6 %. More than third of the students indicated pain during menstruation 41.0 %. As regarded the duration of the menstruation 57.2 % 3- 5 days and only 2.6 % more than 8 days duration . The mean age of the students at the onset of menstruation 15.46 ± 0.511

Table (3) frequency distribution of the study sample according to knowledge about breast cancer.

	Frequency N = 311	Percent %
Each breast tumors cancerous tumors		
Yes	33	10.6
No	252	81.0
I don't Know	26	8.4
Breast cancer tumors can spread to the lung and bone.		
Yes	161	51.8
No	63	20.2
I don't Know	87	28.0
Breast cancer causes known.		
Yes	91	29.3
No	147	47.3
I don't Know	73	23.5
Breast cancer can be prevented completely		
Yes	125	40.2
No	121	38.9
I don't Know	65	20.9

Concerning knowledge of the study sample about breast cancer, this table shows the question about this knowledge, the question "Each breast tumors cancerous tumors" more than two third of the study sample answered (No) 81.0% & only 10.6% answered (yes). Regarding the question "Breast cancer tumors can spread to the lung and bone", 51.8% answered (yes) 28.0 % (don't know) and 20.2 % answered (No). "The Breast cancer causes known" question 47.3% answered (No) 29.3 % answered (yes) and 23.5 % answered (don't know). The last question is "breast cancer can be prevented completely" 40.2 % answered (yes) while 38.9 % answered (no) and 20.9 % answered (don't know).

Table (4) frequency distribution of the study sample according to knowledge about Risk factors of breast cancer. (N=311)

Risk Factors	Yes		No		I don't Know	
	N	%	N	%	N	%
Family History of Breast Cancer	242	77.8	55	17.7	14	4.5
Smoking	192	61.7	79	25.4	40	12.9
Obesity	180	57.9	56	18.0	75	24.1
No breastfeeding	219	70.4	33	10.6	59	19.0
Exposure the breast to radiation	236	75.9	39	12.5	36	11.6
Eating fatty foods or consumption of fatty foods	148	47.6	71	22.8	92	29.6
The use of contraceptives pills	120	38.6	71	22.8	120	38.6
Age Progress	179	57.6	55	17.7	77	24.8
The beginning of the menstrual cycle at age less than 12 years	104	22.4	88	28.3	119	38.3
The first pregnancy, at age 30 years or more	108	34.7	74	23.8	129	41.5
Late menopausal age to 50 years or more	94	30.2	78	25.1	139	44.7

Table (4) shows the knowledge of the study sample about risk factors of breast cancer, 77.8 % answered yes only 17.7 % answered (no) related to the question about family history of the breast cancer. 57.9% answered (yes) and 18.0 answered (no) related the knowledge about the risk of obesity, on the other hand 70.4 % answered yes and 10.6% answered no related to the knowledge about "no breast feeding". As regard the knowledge of the study sample about smoking as a risk factors of cancer 61.7 %, answered yes and 25.4 % answered (no) , while 75.9 % answered (yes) and only 12.5 % answered no related knowledge about exposure to radiation, regarding the knowledge about risk factor related to use of contraceptive pills 38.6% answered (yes) and 22.8% answered (no) and regarding the item related to "the first pregnancy at age 30 years or more" 34.7% answered (yes) and 23.8% answered (no). More than half of the sample consider the "age progress" is a risk factor of the cancer 57.6%. answered yes and 17.7% answered (no). Lastly, items "the menopausal age more the 50 years is a risk factor for cancer" 30.2% of the study sample answered yes , 25.1 % answered (no) and 44.7% answered (don't know) .

Table (5) frequency distribution of the study sample according to knowledge about the Signs & Symptoms of Breast Cancer (N = 311).

Signs & Symptoms	Frequency N=311	Percent %
Sense of mass in the breast		
Yes	289	92.9
No	18	5.8
I don't Know	4	1.3
Sense of mass or lump under axillary		
Yes	244	82.0
No	40	19.2
I don't Know	16	5.1
Bloody nipple discharge, or abnormal breast secretion		
Yes	263	84.6
No	17	5.5
I don't Know	31	10.0
Pain in the breast area		
Yes	219	70.4
No	68	21.9
I don't Know	24	7.7
Wrinkling in the skin of the breast		
Yes	223	71.7
No	36	11.6
I don't Know	52	16.7

Change in the breast shape or size		
Yes	262	84.2
No	25	8.1
I don't Know	24	7.7
Inverted nipple		
Yes	182	58.5
No	48	15.4
I don't Know	81	26.1

Table (5) showed the knowledge of the study sample about the Signs & Symptoms of Breast Cancer. The response of the student related to “Sense of mass in the breast” more than two third answered yes 92.9% and only 5.8 answered no. regarding to “Sense of mass or lump under axillary” 82.0 % of the sample answered yes and 19.2 answered no. on the other hand 84.6 % answered yes and only 5.5 % answered no related to the item” bloody nipple discharge, or abnormal breast secretion”. “Pain in the breast area” the answered of the study sample 70.4 % answered yes and 21.9 % answered no and 7.7% answered I don't know. The response of the study sample related to “Wrinkling in the skin of the breast” 71.7% answered yes and 11.6% answered no. also this table shows the response of the study sample related the “Change in the breast shape or size” as the sign of breast cancer 84.2% of the study sample answered yes while 8.1% answered no and 7.7% answered I don't know. Regarding the “inverted nipple” more the half of the study sample answered yes 58.5%. 15.4% answered no and 26.1% answered I don't know.

Table (6) frequency distribution of the study sample according to knowledge about Methods of early detection of Breast Cancer.

Early detection	Frequency N = 311	Percent %
Doing a blood test		
Yes	86	27.7
No	159	51.1
I don't Know	66	21.2
Breast examination by mammogram.		
Yes	254	81.7
No	21	6.8
I don't Know	36	11.6
Magnetic imaging of the breast.		
Yes	205	65.9
No	48	15.5
I don't Know	58	18.6
Breast screening at the doctor.		
Yes	268	86.2
No	29	9.3
I don't Know	14	4.5
Breast self-examination		
Yes	278	89.4
No	23	7.4
I don't Know	10	3.2

Table (6) summarized the knowledge about Methods of early detection of Breast Cancer. As regarding the first method was “Doing a blood test” more the half of the sample answered no 51.1% and 27.7 % answered yes. The second method for detection of breast cancer is “Breast examination by mammogram” 81.7 % answered yes , 11.6% answered I don't know and only 6.8 % answered no. The third method for early detection in this study is “Magnetic imaging of the breast”. More than half of the sample answered yes 65.9% , 18.6% answered I don't know and 15.5% answered no. regarding the item for the method of early detection is “Breast screening at the doctor” 86.2% with this method answered yes 9.3% answerer no and 4.5% answered I don't know. “Breast self-examination” is a last item 89.4 % answered yes, 7.4% answered no and only 3.2% answered I don't know.

Table (7) frequency distribution of the study sample knowledge as regarding relationship between vitamin D and breast cancer .

	Frequency N =311	Percent %
Is there a relationship between vitamin D and breast cancer		
Yes	95	35.5
No	47	15.1
I don't Know	169	54.4
Do you conducted an analysis of vitamin D and calcium in blood		
Yes	101	32.5
No	210	67.5
Do you exposure to the sunlight to get vitamin D & Calcium		
Yes	143	43.7
No	168	56.3
Do you put sun block when exposed to sunlight		
Yes	84	27.0
No	127	40.8
Sometimes	100	32.2
Do you cover when exposed to sunlight		
Yes	143	46.0
No	47	15.1
Sometimes	121	38.9
Do you take diet rich with Vitamin D & Calcium		
Yes	164	52.7
No	57	18.4
Sometimes	90	28.9
Do you take Vitamin D Tablets		
Yes	99	31.8
No	212	68.2
Do you take calcium tablet?		
Yes	52	16.7
No	259	83.3
Who is prescribed for you?		
doctors	87	28.0
friend	9	2.9
myself	27	8.6
not applicable	188	60.5

Table (7) shows the knowledge of the study sample regarding relationship between vitamin D and breast cancer. This table consisted of the nine question. The first question “Is there a relationship between vitamin D and breast cancer” more than half of the sample answered I don't know 54.4% , 35.5% answered yes and 15.1% answered no. regarding the question “Do you conducted an analysis of vitamin D and calcium in blood” 67.5% answered no and 32.5 % answered yes. As related to the question “Do you exposure to the sunlight to get vitamin D & Calcium” about 56.3% answered no and 43.7% answered yes. While the answered of the question “Do you put sun block when exposed to sunlight” 40.8 % answered no, 32.2 % answered sometimes and 27.0 % answered yes. On the other hand the question related to “Do you cover when exposed to sunlight” more than third of the sample answered yes 46.0%, 38.9 answered sometimes and 15.1% answered no. “Do you take diet rich with Vitamin D & Calcium” more than half of the sample answered yes 52.7% , 28.9% answered sometimes and 18.4 % answered no. question about “Do you take Vitamin D Tablets” 68.2 % answered no while 31.8 % answered yes. Related to “Do you take calcium tablet” 83.3% answered no, less than quarter of the sample answered yes 16.7. The last question “Who is prescribed for you” 28.0 answered doctors, 2.9% answered friend only 8.6 % answered myself and 60.5 % not applicable.

Table (8) Relation between study Socio-demographic data & Knowledge of vitamin D & breast cancer.

	Age		Nationality		Study Level		Family Income	
	X ²	P	X ²	P	X ²	P	X ²	P
Is there a relationship between vitamin D and breast cancer	28.813	0.001	1.181	0.554	21.981	0.015	6.960	0.138
Do you conducted an analysis of vitamin D and calcium in blood	7.597	0.474	6.725	0.696	10.357	0.410	7.150	0.128
Do you exposure to the sunlight to get vitamin D & Calcium	3.411	0.906	10.480	0.005	25.710	0.004	2.977	0.562
Do you put sun block when exposed to sunlight	15.317	0.053	3.661	0.160	27.487	0.002	1.110	0.893
Do you cover when exposed to sunlight	7.664	0.467	0.404	0.817	12.939	0.227	5.135	0.274
There is need to take Vit Supplementation.	8.853	0.355	5.967	0.051	5.272	0.872	4.725	0.317
Do you take diet rich with Vitamin D & Calcium	4.171	0.841	5.593	0.061	13.257	0.210	6.103	0.192
Do you take Vitamin D Tablets	12.414	0.015	1.213	0.271	3.694	0.594	0.587	0.746
Do you take calcium tablet?	5.662	0.685	0.185	0.912	14.376	0.157	2.346	0.672
Who is prescribed for you?	11.729	0.164	4.470	0.107	18.799	0.043	0.944*	0.918

Table (8) present the relation between study Socio-demographic data & Knowledge of vitamin D & breast cancer. A chi- square test was used to test the association between age, Nationality, Study Level and Family Income. The variable of "Is there a relationship between vitamin D and breast cancer" a highly significant was observed with the sample age (X^2 28.81, $p=0.001$). No significant relation with the nationality (X^2 1.18, $p= 0.554$). The variable of study level a significant association was observed related to this variable (X^2 21.981, $p = 0.015$). The variable of Family Income not significant associated with relationship between vitamin D and breast cancer. As regard the association between the socio-demographic data and "Do you conducted an analysis of vitamin D and calcium in blood" with age no significant association (X^2 3.411, $p = 0.474$), no significant association also was observed in this variable with nationality and study level (X^2 6.725, $p= 0.696$ & X^2 10.357, $P= 0.410$ respectively) related to family income not significant associated (X^2 7.150, $P= 0.128$). A chi-square test was used to test the association between socio-demographic data and exposure to the sunlight to get vitamin D & Calcium no significant association observed between age and exposure to the sunlight to get vitamin D & Calcium (X^2 3.411, $P=0.906$). A highly significant association between this variable and Nationality (X^2 10.480, $P=0.005$) also the signification association between the variable and study level (X^2 25.710, $P= 0.004$) no significant association between this variable and family income. The relation between put sun block when exposed to sunlight and socio- demographic data significant association between this variable and age (X^2 15.317, $p= 0.053$). No significant association between the variable and nationality. Significant association between this variable and study level (X^2 27.48, $P= 0.002$) no significant association between this variable and family income. As regarding the socio-demographic data and "Do you cover when exposed to sunlight" no significant association between this variable and socio-demographic data. There is need to take Vit Supplementation the result of this study shows a significant association between this variable and Nationality (X^2 5.967, $P=0.051$). the relation or variable Do you take diet rich with Vitamin D & Calcium a significant association between this variable and nationality (X 5.59, $P= 0.061$). A chi-square test was used to test the association between socio-demographic data and Do you take Vitamin D Tablets a significant association was observed with the age (X^2 12.414, $P= 0.015$). Do you take calcium tablet with socio-demographic data no significant association? Regarding "Who is prescribed vitamin D and Calcium" a significant association between this variable and study level (X^2 18.799, $P= 0.043$)

Table (9) Relation between marital status & Knowledge of Vitamin D & breast cancer.

	Marital status	
	X ²	P
Is there a relationship between vitamin D and breast cancer	9.738	0.0464*
Do you conducted an analysis of vitamin D and calcium in blood	6.722	0.0351*
Do you exposure to the sunlight to get vitamin D & Calcium	8.902	0.541

Do you put sun block when exposed to sunlight	15.109	0.0128*
Do you cover when exposed to sunlight	10.680	0.0383*
There is need to take Vit. Supplementation.	8.292	0.0600
Do you take diet rich with Vitamin D & Calcium	15.040	0.131
Do you take Vitamin D Tablets	6.104	0.296
Do you take calcium tablet?	8.257	0.604
Who is prescribed for you?	4.505	0.922

Table (9) present the relation between marital status & Knowledge of Vitamin D & breast cancer. A chi- square test was used to test the association between marital status and the variable "Is there a relationship between vitamin D and breast cancer" a significant association between this variable and marital status (X^2 9.738, $P=0.0464^*$). This table also represent a significant association between conducted analysis of vitamin D and calcium in blood and marital status (X^2 6.722, $P= 0.0351^*$). No significant association was found between marital status and exposure to the sunlight to get vitamin D & Calcium. As regarding put sun block when exposed to sunlight and marital status as significant association (X^2 15.109, $P= 0.0128^*$). This table shows a significant association between cover when exposed to sunlight and marital status (X^2 10.680, $P= 0.0383^*$). On the other hand no significant association related to need to take Vit. Supplementation (X^2 8.292 $p= 0.0600$). While no significant association was found between marital statuses and take diet rich with Vitamin D & Calcium (X^2 15.040 $P= 0.131$). As regard the take Vitamin D and calcium tablet no significant association with the marital status.

Discussion

Many studies have examined the effects of vitamin D on mammary carcinogenesis in vitro and in animal models, and the data supports a protective role for vitamin D in breast cancer development. Vitamin D is produced in the skin through the conversion of 7-dehydrocholesterol to pre-vitamin D₃ following sufficient exposure to ultraviolet B (UV-B) radiation from sunlight.

The initial step for developing effective health education programs is to identify the factors that cause people to behave the way they do in any situation. Knowledge is one of the factors that influence individuals' behaviors; therefore the main purpose of this paper is to identify the knowledge deficit among college students regarding breast cancer and its relationship to vitamin D.

The corner stone of primary prevention of breast cancer is adequate information about the risk factors and availability of screening tools. Low cancer awareness contributes to delay in presentation and diagnosis, which may result in grieve outcome⁽¹⁵⁾. The present study was an attempt to assess the knowledge regarding breast cancer among Health College students, the results revealed that the students have poor knowledge regarding the causes of breast cancer, 70% of the students didn't know what causes breast cancer, 59.8% didn't know that breast cancer can be prevented, while 50%, 52.4% and 61.4%, did not know that obesity, fatty & fast food, and the use of oral contraceptive pills, respectively, are considered risk factors for breast cancer.

These results are similar to other studies^(16, 17). On the other hand, regarding their knowledge about breast feeding, exposure to radiation, family history of breast cancer; the students showed a good level of knowledge regarding these issues. This is also similar to previous finding. Regarding the signs and symptoms of breast cancer, more than two third of the sample identified that the presence of a mass in the breast tissues, or under auxiliary, bloody discharge, pain, wrinkling in the skin of the breast and shape. All of these elements are considered as signs and symptoms of breast cancer, similar results are obtained by other studies^(18, 19).

Concerning methods of early detection of breast cancer, this study reported that more than two thirds have knowledge about these methods, such as mammograms, MRI, self-breast examination, screening by the doctor in the clinic. On the other hand, they did not know that blood test is considered as a method of detection of breast cancer, these findings are consistent with the results of other studies^(18, 20, and 21). As early detection has been overwhelmingly cited as a primary element in the fight against breast cancer in Saudi Arabia, thus increasing the knowledge and overall awareness of breast cancer at an earlier age could lead to positive, long-lasting effect on these students' quality of life. More education-based programs targeting emerging adult college students should be a primary consideration among health education / health promotion practitioners. The second part of this research article is to assess knowledge towards vitamin D.

Vitamin D is now being linked to decreasing many chronic diseases and conditions, such as breast cancer, cardiovascular diseases, diabetes, bone health and depression^(22, 23). College students are in very influential years for attaining peak bone mass and osteoporosis could be a problem for them later in life⁽²⁴⁾. Moreover, breast cancer is a leading malignancy among Saudi women comprising about 26% of all malignancies⁽²⁵⁾, and hence the relation of vitamin D as a potential mediator of breast cancer risk. The VDR may represent an important target for breast cancer prevention, which will be achieved through sharing students and public to have a greater understanding of the importance of vitamin D and its sources in order to decrease the incidence of its deficiency.

The results of the study regarding the student's information about vitamin D, more than two thirds of the students did not know if there is a relationship between vitamin D and breast cancer, and they haven't done any examination or lab test to detect the level of vitamin D, there was also a significance between this issue and the age of the student. Similar studies have found the same result^(26, 27).

Regarding sunlight exposure, 43.7% of the sample does not get any exposure to sunlight, and even those who get exposure, they only expose their hands and face and the use sun block. There was a significant relationship between the age and the two previous points, same results were achieved by^(28, 29, and 30). Knowledge regarding food rich in vitamin D, nearly 50% mentioned that they don't know the food rich in vitamin D, more than two thirds do not take any supplements (Vitamin D or C), and there is a significant relationship between these two items and the age and the level of study, these results are the same as those obtained by^(31, 32). The students who are studying at health college show lack of knowledge in most of the information related to vitamin D and its relation to prevent breast cancer, therefore, there is a need to enhance knowledge of women regarding issues related to breast cancer prevention and relation between vitamin D and breast cancer in the curricula of health colleges and other health care training institutions, so that graduates of such schools are better informed about the disease.

Conclusion:

Our findings suggests that the health college students do not have good knowledge about the predisposing factors, signs & symptoms and methods of early detection and the relation between vitamin D and breast cancer. It is necessary to introduce preventive measures about breast cancer, vitamin D ... etc. Further research is also needed to compare between public and college student's knowledge, attitudes and practices regarding breast cancer and its relationship with vitamin D.

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