

Relationship Between the Level of Knowledge and Breast Examination in the Students of Cu Uaem Valle De Chalco, 2024

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Abstract: *In Mexico, breast cancer is the leading cause of death among women, with an average annual treatment cost of \$110,459 per patient due to late diagnosis (Dorantes Aguilar, 2008). Consequently, breast cancer represents a serious health issue due to its high incidence among women. In most cases, this condition can be detected early through breast self-examination. Prevention efforts can reduce the number of new cases and deaths among women, while also mitigating the economic impact associated with treatment. This study aims to evaluate the relationship between the level of knowledge regarding breast cancer and the practice of breast self-examination among female students at the UAEM Valle de Chalco University Center in 2024. Breast self-examination is recommended starting at age 20 and is considered key to detecting changes in the breasts. The objective of this work is to identify the relationship between the students' level of information and the correct practice of breast self-examination, promoting it as a fundamental method for breast cancer detection. A quantitative methodology was employed for this study, conducted at the UAEM Valle de Chalco University Center with a sample of 185 nursing students aged 19 to 29. A questionnaire developed by author Edith Páucar Mendoza was administered to assess knowledge regarding breast self-examination. Nursing personnel play a crucial role in health promotion and community education. Studies have shown that educational interventions aimed at nursing students can significantly improve their knowledge and attitudes regarding breast self-examination. Administering the questionnaire to nurses aged 20 to 29 allows for the assessment of their knowledge level and, if necessary, the implementation of educational strategies to strengthen it. The results showed that 45% of the participants possessed moderately good knowledge regarding breast cancer, yet their understanding of the breast self-examination technique was rated as fair. Furthermore, the majority identified key detection factors, such as changes in breast size or color, or the presence of lumps. It is therefore concluded that educational institutions must promote workshops, talks, and educational resources on breast cancer—not only to increase general knowledge but also to improve the practical skills required for breast self-examination and early detection.*

Keywords: knowledge, cancer, breast, students, nursing

INTRODUCTION

In Mexico, breast cancer is the leading cause of cancer-related death among women and ranks second among all causes of death for women. The average annual cost per patient with this disease amounts to 110,459.00 Mexican pesos, with diagnosis at an advanced stage being one of the factors that most contributes to the high cost of treatment. (Instituto Mexicano del Seguro Social, 2008) In other words, the consequences impact not only the economic sphere but also the social, psychological, occupational, and emotional dimensions of both the patient and her family environment (Palmero et al., 2022).

According to the National Institute of Statistics and Geography (INEGI), 97,323 deaths due to malignant tumors were recorded in Mexico in 2020. Of these, 7,880 were attributed to breast cancer, representing approximately 8% of the total (INEGI, 2021). INEGI (2021) reports that 7,821 women and 58 men died from the disease in 2020, marking the highest death rate among women; the vulnerable age group is identified as those aged 60 and older.

It is evident that breast cancer is a serious health problem in Mexico. The World Health Organization (WHO) defines breast cancer as a disease in which breast cells multiply uncontrollably, forming malignant tumors that, if left untreated, can spread throughout the body and cause death (WHO, 2023).

According to the WHO (2023), risk factors that increase the likelihood of developing breast cancer are categorized into modifiable and non-modifiable factors. Modifiable factors include obesity, alcohol consumption, smoking, radiation exposure, exposure to chemical substances, diet, and a sedentary lifestyle. Non-modifiable factors include age, sex, family history, personal medical history, hormonal changes, dense breast tissue, and heredity.

Osorio et al. (2020) state that the factors most closely... factors related to the development of the disease include family history, mutations in the BRCA1 and BRCA2 genes, and excess body weight. Some of these elements can be modified through a healthy lifestyle, while others—such as age or genetic inheritance—are beyond the individual's control. Delgado et al. (2020) conclude that this disease, like many other oncological conditions, has multiple contributing factors. These include radiation exposure, being over 50 years of age, female sex, obesity, a sedentary lifestyle, excessive alcohol consumption, late menopause, a personal history of breast cancer, immunosuppression, smoking, and certain viral infections such as hepatitis B.

Furthermore, Delgado et al. (2020) add that breast cancer can be classified into three types. The first is sporadic breast cancer, which occurs in individuals with no family history and accounts for 70% to 80% of cases. The second type is familial breast cancer, which appears in those with a family history but without a specific, single genetic mutation; this type has a multifactorial basis and represents 15% to 20% of

diagnoses. Finally, hereditary breast cancer stems from a specific mutation in a single gene transmitted via monogenic inheritance and is estimated to account for 5% to 10% of cases.

Unfortunately, most breast cancer is considered unavoidable; however, early detection is possible. Therefore, implementing prevention strategies is crucial, as this helps reduce mortality and preserve quality of life, enabling the use of less invasive treatments and minimizing side effects.

Rodríguez (2021) Early detection is considered a key strategy in identifying breast cancer through breast self-examination, a technique aimed at spotting changes in the breasts that could indicate abnormalities. Consequently, it is recommended to begin this practice at age twenty and repeat it monthly. Ideally, it should be performed one week after menstruation or on a fixed day following menopause. Self-examination consists of two phases: visual inspection, to look for irregularities in shape or size, and palpation, to detect lumps or areas of hardening (Rodríguez, 2021).

If any symptoms are detected or present, undergoing a diagnostic mammogram is essential; while generally recommended starting at age 40, it can be used for timely diagnosis if risk factors or symptoms are identified. It is important to note that the healthcare system faces limitations regarding timely access.

RESEARCH METHOD AND PROGRAM

Study approach: Quantitative

Study design: Non-experimental

Research type: Cross-sectional, prospective, and analytical

Study universe: The research was conducted at the UAEM Valle de Chalco University Center

Study population: Nursing students

Selection criteria

1. Inclusion

- a. Students over 18 years of age
- b. Clinically free of breast lesions

2. Exclusion

a. Students with any neurological disorder

3. Elimination

a. Instruments with no responses

Sample

Comprised 185 participants, with 95% confidence and a 0.05 margin of error.

Sampling

Simple random

Data collection plan

A questionnaire developed by author Edith Páucar Mendoza was used; it was originally applied in her research titled “Knowledge and practices regarding breast self-examination among adolescent girls at a national educational institution (2016),” conducted at the National University of San Marcos.

This questionnaire consists of 14 multiple-choice questions regarding general data relevant to the study problem; it includes a title, an introduction, and instructions.

The instrument assesses knowledge and practice regarding breast self-examination; knowledge will be evaluated based on the response scale:

Knowledgeable: 9–14 points

Not knowledgeable: 0–8 points

The instruments were administered using Google Forms; the link was distributed via WhatsApp by the tutor or group leader to facilitate administration.

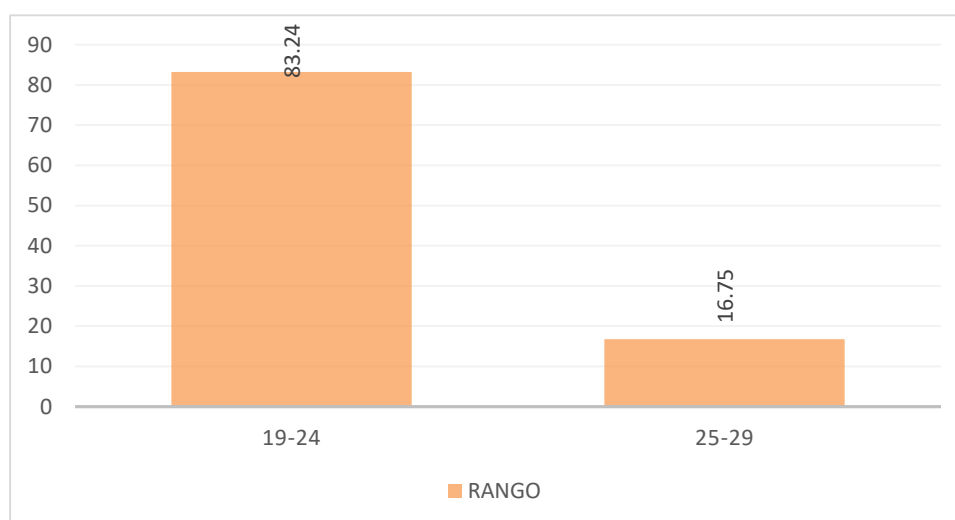
Analysis plan

A data entry template in Excel software will be used to generate descriptive and inferential statistics, which will be presented in tables and figures.

PRESENTATION OF RESULTS

The collected information was analyzed using an Excel database into which the result data were entered; percentages were then calculated and subsequently presented in graphs and tables.

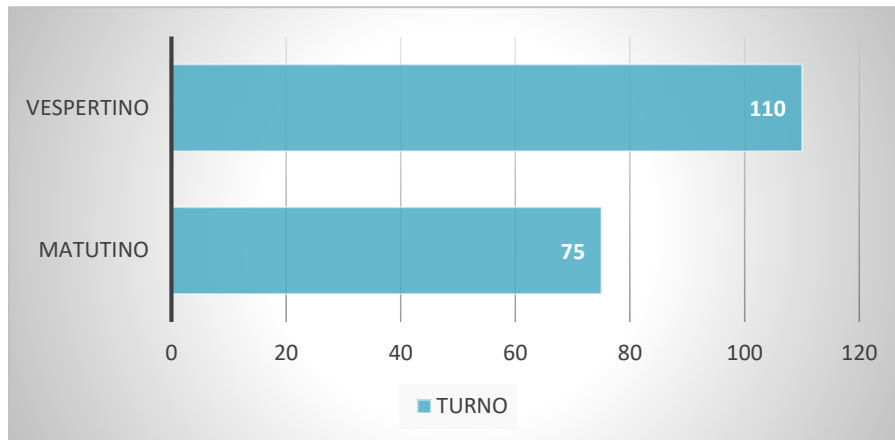
FIGURE 1. Age range of female students participating in the study, CU UAEM Valle de Chalco, 2024.



SOURCE: Survey conducted, own data.

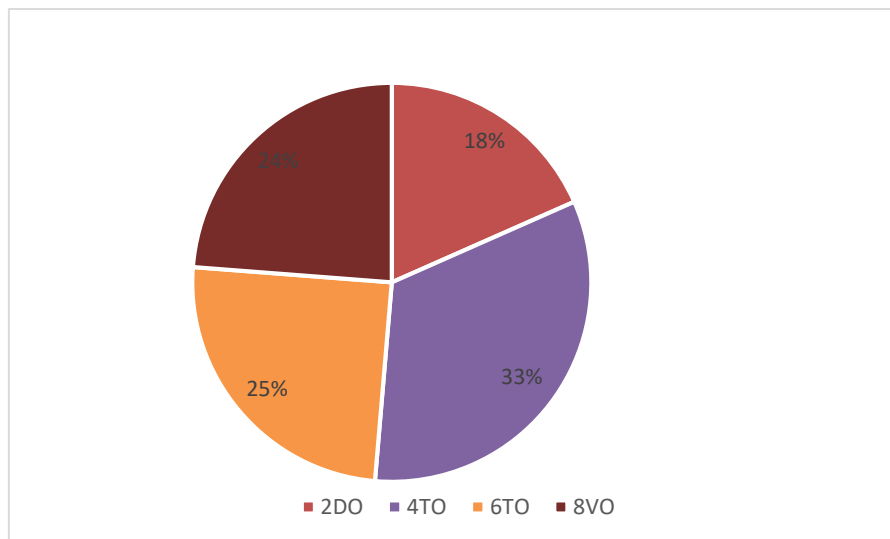
Figure 1 shows the age distribution of the participants. Of the 185 students, 83.24% fall within the 19–24 age range, while the remaining 16.75% are in the 25–29 age range. Meanwhile, Figure 2 shows that the majority of respondents attend the afternoon session, with a total of 110 participants, whereas 75 belong to the morning session.

FIGURE 2. Shift of the female students participating in the study, CU UAEM Valle de Chalco, 2024.



SOURCE: Survey conducted, own data.

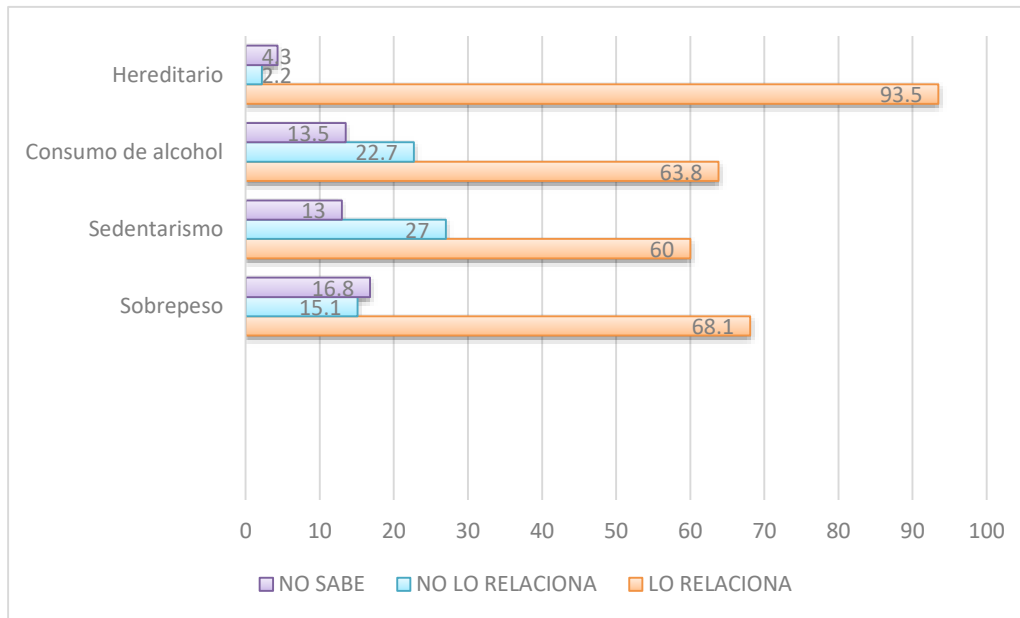
FIGURE 3. Semester of the female students participating in the study, CU UAEM Valle de Chalco, 2024.



SOURCE: Survey conducted, own data.

Finally, Figure 3 shows the distribution by semester, highlighting that 33% of the participants are in their fourth semester, 25% are sixth-semester students, 24% are in their eighth semester, and 18% are in their second semester.

FIGURE 4. Level of knowledge regarding breast cancer-related factors among female students participating in the study, CU UAEM Valle de Chalco, 2024.



SOURCE: Survey conducted, own data.

Figure 4 presents an analysis of the students' level of knowledge regarding breast cancer risk factors, specifically highlighting four key factors. Regarding the hereditary factor, 93.5% of the students acknowledged that genetic inheritance plays a significant role in the development of breast cancer; however, 4.3% did not consider it a factor, and 2.2% stated that it has no connection to the onset of the disease.

Another factor evaluated was being overweight, which 68.1% of the participants identified as a risk factor, while 15.1% did not consider it relevant, and 16.8% lacked information regarding its link to breast cancer.

Regarding alcohol consumption, 63.8% of the respondents linked it to breast cancer, whereas 27% disagreed, and 13.5% indicated they had no knowledge of the influence of alcohol abuse on the disease. Finally, regarding a sedentary lifestyle, 60% of the students recognized it as a risk factor, in contrast to 27% who did not consider it as such and 13% who had no knowledge of this topic.

TABLE 1. Level of knowledge regarding breast cancer risk factors among female students participating in the study, CU UAEM Valle de Chalco, 2024.

ANTECEDENTES	FRECUENCIA	PORCENTAJE
Edad que se presenta con mayor frecuencia el CM	20 a 30 años	14 7.6%
	31 a 40 años	89 48.1%
	41 a mas	82 44.3%
Mayor riesgo a tener CM	Hombre	3 1.6%
	Mujer	180 97.3%
	No relaciona	2 1.1%
Ligeramente riesgo de contraer CM	Mujeres con un hijo	30 16.2%
	Mujeres con 2 hijos	30 16.2%
	Mujeres que nunca tuvieron hijos	125 67.6%
Si la primera menstruación fue antes de los 12 años puede tener riesgo de CM	Si	70 37.8%
	No	47 25.4%
	No lo relaciona	68 36.8%

SOURCE: Survey conducted, own data.

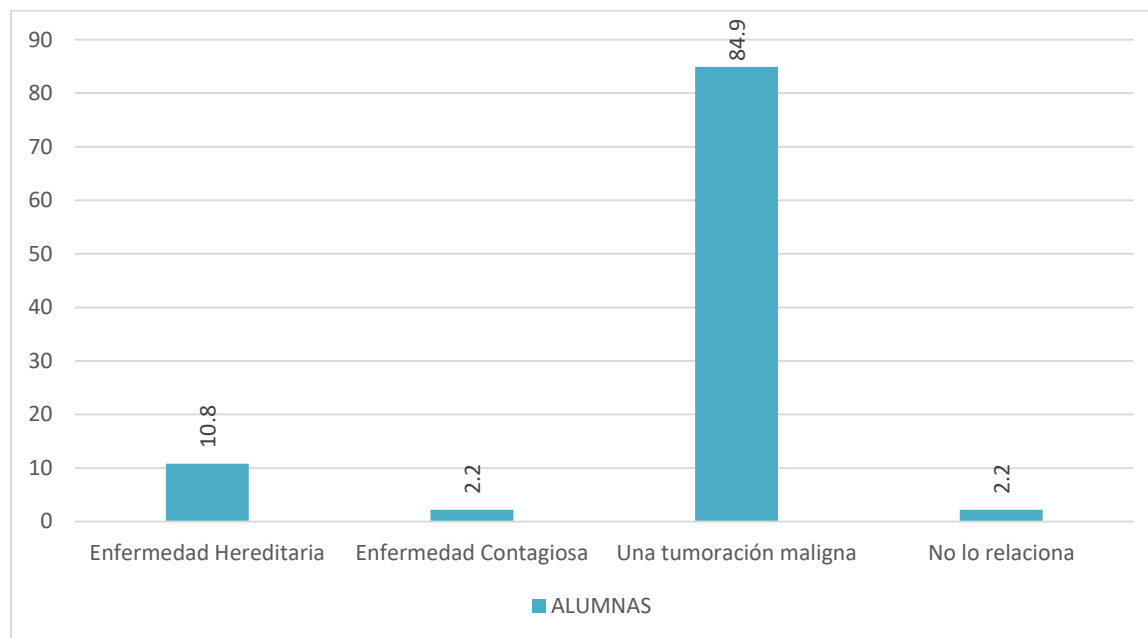
Table 1 presents the level of knowledge among students at CU UAEM Valle de Chalco regarding factors associated with breast cancer.

It was observed that 89 students identified the 31–40 age group as having the highest frequency of breast cancer onset, while 82 responded that individuals aged 41 and older are at the greatest risk. Conversely, 14 students stated that the highest risk lies with individuals between the ages of 20 and 30.

Of the 185 respondents, 97.3% acknowledged that women are at higher risk of developing breast cancer, whereas 1.6% believed men are more prone to the disease, and only 1.1% indicated having no knowledge of the subject.

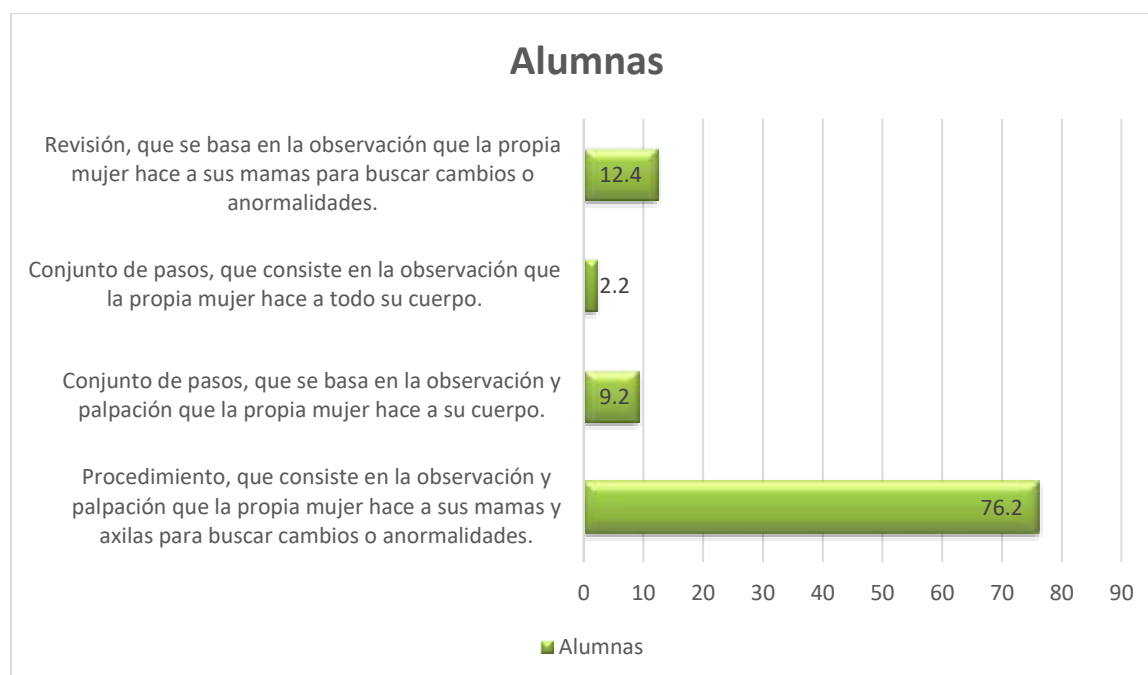
Additionally, the survey inquired about factors related to whether or not women have had children. 16.2% of the students stated that women who have had one or two children face a very low risk of developing breast cancer, while 67.6% considered that women who have not had children are at higher risk of developing the disease.

FIGURE 5. Level of knowledge among female students regarding the definition of breast cancer at CU UAEM Valle de Chalco, 2024.



SOURCE: Survey conducted, own data.

FIGURE 6. Level of knowledge among female students regarding the definition of breast self-examination at CU UAEM Valle de Chalco, 2024.



SOURCE: Survey conducted, own data.

Figure 6 shows results regarding knowledge of the definition of breast self-examination, indicating that 76.2% of participants recognized that the process involves both observation and palpation of the breasts and underarms to identify potential changes or abnormalities.

A total of 12.4% considered it to be an examination based solely on observing the breasts to detect abnormalities. 9.2% of respondents defined it as a series of steps involving observation and palpation of the body, while 2.2% viewed it as a set of steps focused exclusively on observing the entire body.

CONOCIMIENTOS GENERALES DE LA AUTOEXPLORACIÓN DE MAMA		FRECUENCIA	PORCENTAJE
	1 día después del primer día de la menstruación	46	24.9%
	3 días después del primer día de la menstruación	51	27.6%
	15 días después del primer día de la menstruación	27	14.6%

MOMENTO PARA REALIZAR EL AUTOEXAMEN	7 días después del primer día de la menstruación	61	33%
CUÁNTAS VECES SE DEBE REALIZAR EL AUTOEXAMEN DE MAMAS	Una vez al mes	112	60.5%
	Todos los días	14	7.6%
	Una vez por semana	33	17.8%
	Una vez por año	26	14.1%

SOURCE: Survey conducted, own data.

Table 2 presents the level of knowledge among the surveyed women regarding general aspects of breast self-examination. Thirty-three percent indicated that the self-examination should be performed seven days after the first day of menstruation, while 27.6% stated it should be done three days after the start of the menstrual cycle. A further 24.9% responded that it should be performed one day after the first day of menstruation, and 14.6%—representing the minority—stated that it should be done 15 days after the onset of menstruation.

Regarding the frequency of self-examination, 60.5% of the 185 participants (the majority) indicated that it should be performed once a month. 17.8% commented that it should be done once a week, 14.1% were of the opinion that it should be done once a year, and 7.6% considered that it should be done daily.

Regarding the proper position for performing the self-examination, 95% of the respondents agreed that it should be done while lying down and in front of a mirror. However, 5% believed the correct posture was standing, and 3% stated that the observation should be performed while lying down.

FIGURE 7. Level of knowledge regarding correct palpation for breast self-examination among female students at CU UAEM Valle de Chalco, 2024.

