Preoperative Anxiety in Patients Scheduled for Minimally Invasive Abdominal Surgery: Institutional Experience

Vincent Jean Carlo García Gil[1], Laura Marcela Martínez Trujillo[1], Paula Andrea Cifuentes Gonzales[1], Eduardo José Díaz Gasca[1], María Sofía González Casagua[2]

[1]*Estudiante de Medicina Fundación Universitaria Navarra – UNINAVARRA.*
[2]*Magister Epidemiología y Salud - Fundación Universitaria Navarra – UNINAVARRA.*

KEYWORDS
Anxiety,
Preoperative period,
Laparoscopic cholecystectomy.

ABSTRACT:
Introduction: Preoperative anxiety is an unpleasant emotional state, characterized by feelings of tension, nervousness, fear, and intensified activation of the autonomic nervous system. According to the WHO, more than 4 million people undergo surgery annually in the world, and in about 50 to 75% of them, they develop some degree of anxiety during the course of the preoperative period. Objective: To analyze preoperative anxiety levels through the application of the Amsterdam Preoperative and Information Anxiety Scale (APAIS) in patients scheduled for laparoscopic cholecystectomy in a third-level health institution of complexity in the department of Huila during the first half of 2023. Methodology: Descriptive-cross-sectional study, the APAIS scale will be applied. The population will be patients over 18 years of age scheduled for laparoscopic cholecystectomy. The data obtained will be coded and tabulated in the SPSS statistical program. Results: Preoperative anxiety mostly affects mature adult women, Catholic and married. In addition, those who have had previous surgeries tend to experience less anxiety before the procedure, additionally it is observed that patients with a lower level of education tend to show lower levels of preoperative anxiety, however, despite this, all patients express a strong desire to receive more information about the procedure, which highlights the importance of clear and complete communication to help reduce anxiety before surgery. Conclusions: It is recommended to provide detailed information and to carry out early and individualized interventions to reduce preoperative anxiety and the desire for information. New research approaches may evaluate the reduction of anxiety in the face of different interventions.

1. Introduction

Preoperative anxiety is defined as the transient alteration of mood due to stress conditions associated with the surgical expectation and feelings of vulnerability, which cause the activation of the autonomic nervous system with biopsychosocial imbalances that generate behavioral, emotional and physical modifications, which are related to the increase in hospital stay. increased incidence of postoperative infections, increased postoperative pain, anesthetic accidents, and adverse events during the recovery phase (1–4).

According to international estimates, the incidence of preoperative anxiety ranges between 60-80%, that is, it affects approximately 4 million patients worldwide per year (5). In Latin America, the prevalence is close to 33.3%, although higher figures are reported in countries such as Peru (75%), Ecuador (60%) and Mexico (28-76%). In Colombia, there are limited studies that objectively describe the impact of preoperative anxiety in adult patients at the Shaio Clinic Foundation in Bogotá, the state of anxiety in patients undergoing laparoscopic cholecystectomy between April and July 2016 was determined through the Beck scale, finding higher levels of anxiety in patients without previous surgical history (6). At the University Hospital of Cartagena, a prevalence of 36.1% of preoperative anxiety was found, concluding that patients with a higher need for preoperative information have up to twice as much anxiety as those with fewer information requirements (7). Finally, in a study carried out by the Department of Anesthesiology at the Faculty of Health Sciences of the University of Cauca, it was found that the prevalence of preoperative anxiety is low, at 13%, concluding that the population studied has a low interest in the information of the procedure to be performed (8).

Various instruments have historically been used to estimate the degree of clinical anxiety, however, the Amsterdam Preoperative and Information Anxiety Scale (APAIS) is a tool designed to assess the level of anesthesia-related anxiety and the degree of preoperative information in surgical settings, demonstrating validity and reliability as reflected in different studies. A study of cancer patients who would undergo a surgical procedure as part of their treatment in Mexico and Costa Rica demonstrated the reliability and validity of the APAIS scale, finding a sensitivity >90% and a specificity ranging from 17% to 46% in a population of 117 women between the ages of 25 and 75 years. according to their score obtained. These values are acceptable,

finding a high sensitivity, which indicates that most patients who experience preoperative anxiety are identified through this scale, however, a low specificity can be obtained being affected by different factors and environments in which it is performed, but this without affecting its validity. being considered an adequate instrument (9).

In the southern region of Colombia there are institutions that stand out for their surgical potential and the high numbers of interventions, specifically for pathologies of abdominal origin. However, there are no local studies that determine the role of preoperative anxiety. Therefore, the objective of this study was to analyze preoperative anxiety levels through the application of the Amsterdam Preoperative and Information Anxiety Scale (APAIS) in patients scheduled for laparoscopic cholecystectomy in a high-complexity institution in the southern region of Colombia during the first half of 2023. In this way, it will be possible to establish and quantify a social problem that could require institutional and regional changes within surgical departments and care protocols; raising awareness and making visible the impact of mental health due to common procedures in daily clinical practice.

2. Methodology

A descriptive cross-sectional study was conducted with patients undergoing laparoscopic cholecystectomy in a high-complexity clinic in the city of Neiva between January and June 2023. Patients aged 18 years or older, who signed informed consent, were included. Information was collected from the search for sociodemographic variables and personal history (Annex 1); and variables of the APAIS scale (Annex 2). Patients with a history of psychoactive substance use, anxiety disorders, altered state of consciousness, and non-Spanish-speaking people were excluded.

Participants were selected using non-probability convenience sampling. The information was collected through a survey. The instrument was applied in a heteroadministered manner during the preoperative period in operating rooms; doubts were resolved and informed consent was filled out. Anxious patients were identified taking into account as a cut-off point the score greater than or equal to 11 in the combined anxiety component according to the APAIS scale; The need for evaluation by psychology was reported.

The data were analyzed using descriptive and inferential statistics of the data, taking into account the nature of the data according to the category and numerical variables collected in the SPSS version 29.0 program with institutional license; the Kolmogorov Smirnov test was applied for the analysis of the normality. Frequency measures were used for qualitative variables, while quantitative variables were analyzed using dispersion statistics and measures of central tendency. The variables marital status, place of residence, occupation, education, religion were correlated with the types of anxiety and the desire for information using the Kruskal-Wallis test. The variables

gender, existence of children, history of previous surgeries and psychiatric family history using the Mann-Whitney U test. A statistically significant p-value < 0.05 was considered.

Research instrument

The APAIS scale, an instrument designed by Moerman, et al. (1996), was used; translated and validated in Colombia by Pastrana and Pinzón (2017) to measure preoperative anxiety in adult patients undergoing different surgical procedures. The APAIS scale consists of 6 Likert-type items that are scored from 1-5, being 1: never, 2: sometimes, 3: frequently, 4: almost always and 5: always.

The instrument is subdivided into 4 scales, which are assessed separately.

1. Anesthesia-Related Anxiety, Sum A = 1 +2
2. Surgery-Related Anxiety, Sum S = 4 + 5
3. Information Desire Component, = 3 + 6
4. Combined anxiety component Sum C = Sum A + Sum S (1 + 2 + 4 + 5).

Scores on the APAIS Anxiety Scale (Sum C, Combined Anxiety Component) can range from 4 (non-anxious patient) to 20 (very anxious patient). The cut-off score of 11 produces good predictive value with an acceptable balance between false positive and false negative patients.

Scores on the APAIS information scale (information desire component = 3 + 6) can range from 2 (no need for information) to 10 (high need for information). Patients with a score of 5 or higher are considered to be those who need to receive more information on the topics they wish to be informed about. A score below 5 should be a signal not to provide more information (Figure 1) (11).

Table 1 Amsterdam Preoperative Information and Anxiety Scale (APAIS).

	1	2	3	4	5
I'm for anesthesia					
Anesthesia is in my mind constantly					
I would like to know more about anesthesia					
I'm worried about the surgery					
Surgery is on my mind constantly					
I would like to know more about the surgery					

1 is never, 2 is sometimes, 3 frequently, 4 almost always, 5 always

Bias control

The patients included in the research met the inclusion criteria, which prevented the exclusion or erroneous inclusion of participants, thus avoiding selection bias. The information collected through a heteroadministered tool allowed the explanation of the instrument by the researcher, but the interviewee was the one who chose a number on the APAIS scale, thus avoiding interviewer bias, in turn, subjectivity bias was controlled since it is a Likert-type scale, without the possibility of open answers. Finally, the information collected by the researchers was carried out in a cross-sectional section, thus avoiding the bias that occurs when evaluating the exposure of an individual inherent in longitudinal studies.

Ethical and bioethical aspects

The ethics, bioethics and research committee of the Navarra University Foundation and the Medilaser SAS Clinic approved the implementation of this project. This research was considered to be of minimal risk taking into account Resolution 8430 of 1993. In addition, the confidentiality of the information is guaranteed and bioethical principles are preserved, as follows:

- Non-maleficence: During this research, the patients who will be interviewed will be guaranteed that at no time will harm be inflicted on them, since the research is oriented towards the application of a scale to assess preoperative anxiety levels. Likewise, the participants were notified to receive psychological support that would allow the control of their symptoms (12).

- Benefit: Identification of levels of preoperative anxiety generated by cholecystectomy and definition of possible predisposing factors to establish intervention routes (12).

- Justice: Racial conditions, religious beliefs, and additional sociocultural determinations were not taken into account for the application of the questionnaire; all participants had equal opportunities to be selected (12).

- Autonomy: During the research, the opinion of the participants was respected; two informed consents were used, one that guaranteed that the participants took part in the study voluntarily, including possible, risks and benefits; and the other allowed the referral of patients, with moderate to severe levels of anxiety, to the psychology service. In addition, patients were told that they had the option of ending their participation in the research at any time (12).

3. Results

Table 2 shows the sociodemographic characteristics of the population studied. It was evidenced that most of the patients were women (66.70%), with an average age of 50.05 years; Likewise, most of the participants were married (36%), Catholic (86%), had a basic education (39.3%), were engaged in household activities (37.2%), had children (87.23%), had a previous surgical history (54.26%) and most of them had no relatives with a psychiatric history (97.87%).

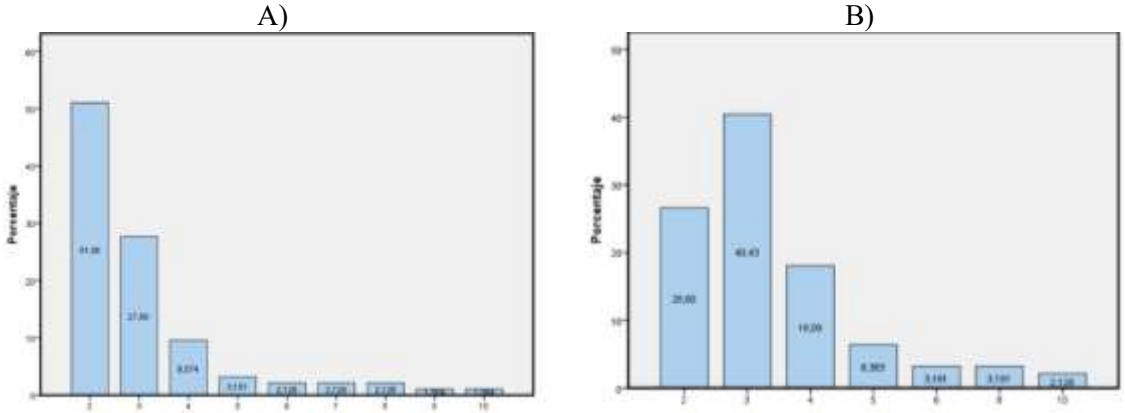
Table 2 Sociodemographic variables.

Variables	Indicators	Frequency	%
Age	18-29 years old	10	10,64
	30-39 years	14	14,89
	40-49 years old	27	28,72
	50-59 years old	14	14,89
	60-69 years old	19	20,21
	70-79 years old	8	8,51
	80-89 years old	2	2,13
	Average (SD)	50.05 ± 15.6	
Sex	Female	66	70,21
	Male	28	29,79
Marital status	Married	36	38,30
	Common-law marriage	35	37,23
	Bachelor	16	17,02
	Widower	5	5,32
	Divorced	2	2,13
Schooling	Basic Primary	37	39,36
	Basic secondary	34	36,17
	Technical	9	9,57
	Technologists	1	1,06
	University professional	5	5,32
	Graduate	2	2,13
	None	6	6,38
Place of residence	Huila	88	93,62
	Cauca	2	2,13
	Putumayo	2	2,13
	Cundinamarca	1	1,06
	Caquetá	1	1,06
Occupation	Housewife	35	37,23
	Merchants	15	15,96
	Farmers	7	7,45
	Layoffs	5	5,32
	Student	5	5,32
	Miscellaneous trades	4	4,26
	None	3	3,19
	Community area	3	3,19
	Driver	2	2,13
	Lawyers	1	1,06
	Commercial Advisor	1	1,06
	Administrative Assistant	1	1,06
	Nursing Assistant	1	1,06
	Administrator	1	1,06
	Crane Operating Assistant	1	1,06
	Transport Vehicle Helper	1	1,06
	Events	1	1,06
	Mechanic	1	1,06
	Messenger	1	1,06
	Confectionery	1	1,06
	Fisherman	1	1,06
	Supervisor	1	1,06
	Public Health Technician	1	1,06
	Vigilant	1	1,06
Religion	Catholic	81	86,17
	No	7	7,45
	Christian	6	6,38

Children	Yes	82	87,23
	No	12	12,77
Previous surgeries	Yes	51	54,26
	No	43	45,74
Psychiatric family history	Yes	2	2,13
	No	92	97,87

Taking into account the score of the APAIS scale and its studied items (combined anxiety, anxiety related to surgery, anxiety related to anesthesia, desire for information), the statistics of the patients are studied according to the results obtained in the survey. Of the 94 patients studied, 51.1% did not present anesthesia-related anxiety (score of 2 on the subscale), while 48.9% had some degree of anesthesia (Figure 1A). On the other hand, 26.6% of the patients surveyed did not present any degree of anxiety related to the surgery, while 73.4% of the patients presented some degree of anxiety related to the surgical procedure to be performed (Figure 1B).

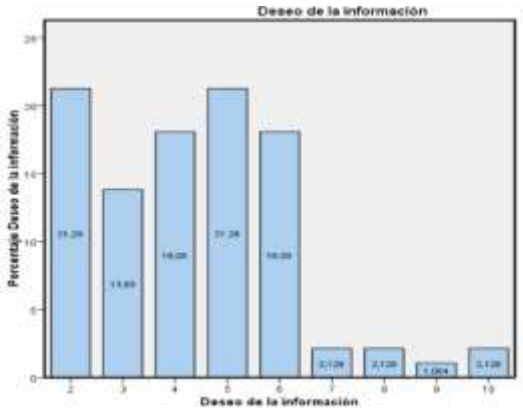
Figure 1 Anxiety assessment according to the APAIS scale.



Note. A) Anxiety related to anesthesia. B) Anxiety related to surgery.

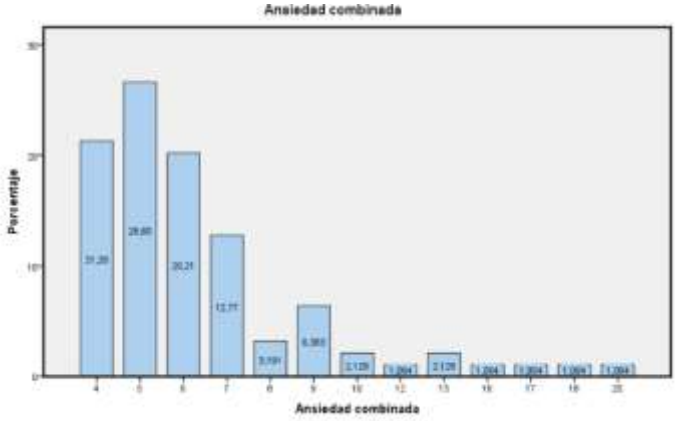
Of the patients surveyed, 21.3% did not wish to receive more information about the surgical procedure to be performed or about the anesthesia they were going to receive (score of 2 on the scale applied); while 53.2% of patients did not require the administration of more information (score <5). On the other hand, 46.8% of the patients required greater administration of information either regarding the anesthesia to be used during the surgical procedure or specifically the surgery (Figure 2).

Figure 2 I want more information.



Similarly, in the assessment of combined anxiety in patients, from the cut-off point with a value of 11 on the APAIS scale, it was found that 92.6% of patients had a score below this value, while 7.4% (n=7) of patients obtained a score greater than 11 (Figure 3).

Figure 3 Combined anxiety.



Regarding the association between the different subscales of the APAIS tool and the characteristics evaluated in the population, inferential statistics were carried out taking into account the normality of the numerical variables. Finding a statistically significant correlation (P<0.05) with schooling. Patients without schooling (n=6) were not classified as anxious. Of those who received education up to preschool and primary (n=37) and basic secondary (n=34), only 2.7% (n=1) and 2.9% (n=1) were classified as anxious, respectively. In contrast, patients with technical education (n=11) classified 33.3% as anxious. Only one patient whose level of education was technologist was identified, who was classified as non-anxious. Of the 5 patients identified with university higher education studies, 40% presented combined anxiety, while of the patients with a postgraduate degree, none presented combined anxiety, understood as a score greater than 11 on the APAIS scale.

It was evidenced that there is no statistically significant relationship in the presentation of combined anxiety, anxiety due to anesthesia or anxiety about surgery and/or desire for information in relation to the variables of occupation, marital status, sex, surgical history, personal or previous family psychiatric pathologies, nor in patients who had children. A statistically significant relationship was found in anxiety about surgery and desire for information according to religion and place of residence (Table 3).

Table 3 Statistical relationship between APAIS categories and population characteristics.

Characteristics of the population	Combined anxiety	Anxiety due to anesthesia	Anxiety about surgery	Desire for information
Gender	0.104	0.458	0.062	0.131
Marital status	0.621	0.663	0.677	0.060
Place of residence	0.051	0.347	0.033	0.035
Occupation	0.116	0.195	0.140	0.146
Schooling	0.003	0.002	0.002	0.473
Religion	0.319	0.679	0.015	0.040
Children	0.773	0.321	0.735	0.276
Previous surgeries	0.462	0.238	0.667	0.396
Psychiatric family history	0.148	0.202	0.232	0.788

Note. The values shown represent the result of the p-value according to the statistical tests applied as a function of normality.

4. Discussion

Anxiety is an unpleasant emotional state, characterized by feelings of tension, nervousness, and fear that conditions the intensified activation of the autonomic nervous system, which is triggered as an adaptive response to situations that generate emotional stress (13). The importance of anxiety in the preoperative period lies in the fact that it has been associated with a worse prognosis compared to the postoperative state, as a result of physiological adaptive changes on the part of the sympathetic nervous system, which could lead to a greater consumption of analgesics and sedatives, generating a scenario that prolongs the patient's hospital stay after the procedure and exposing the patient to greater morbidity and mortality (2)(10)(14).

In this study, the spectra of presentation of preoperative anxiety and the desire for additional information about the procedure were analyzed through the application of the APAIS scale in a center of high level of complexity in the city of Neiva-Huila. Most of the patients were mature adult women who professed the Catholic religion, which was consistent with that found by López-Graciano, et al (2021) in Mexico and Muñoz-Pérez (2018) in Cartagena-Colombia (7). This is possibly associated with the fact that the court of patients evaluated had a diagnosis of lithiasic pathology, which is commonly associated with age, genetic factors, lifestyle, and hormonal factors, among which the level of estrogen and progesterone stands out (14) (15).

In addition, it is concluded that the large percentage of Catholics is due to the fact that in our country it is the religion that is most professed, however, this has no relevance in the clinical setting, more than in our study no participant professed the evangelical religion, which is the most limited in this aspect (16).

Regarding other sociodemographic characteristics, it was found that most of the population studied were married people, followed by those who are in a common-law union, in addition to the fact that the greatest occupation of this population is household activities, data similar to that investigated by Catacora-Choque, et al (2019) in Peru. This is associated with the fact that both studies obtained a population where most of them were women who were married or cohabiting in a common-law union and were engaged in household chores, possibly because we are part of a culture where women assume a traditional role of caring for the home and family (17).

It was observed that the highest level of schooling achieved by most patients was elementary school and basic secondary, while a minimum percentage of people registered a university degree; likewise, most of the study population had already undergone a surgical procedure, data consistent with what was found by Vergara-Romero, et al (2017). Based on the information, it is hypothesized that patients with a history of surgery are less likely to experience high levels of anxiety, and this could indicate that previous experience with surgical procedures may influence emotional control with respect to future procedures (4) (18). In addition, a statistically significant association was identified in both studies with respect to the level of schooling and any form of anxiety. The above, without a clear conclusion, so it is proposed that people with a low level of education are more likely not to suffer from preoperative anxiety, perhaps associated with lack of knowledge, unlike patients with a higher degree of study who may have a greater understanding of the procedure and anesthesia. as well as a greater introspection of the risks that generate an increase in the feeling of fear and fear of the procedure (18). (18).

Quevedo-Preciado, et al (2023) in Mexico, reported that most of their study population presented preoperative anxiety associated mainly with the surgical procedure and the requirement for more information (19), however, in our study it was found that most of the population did not present some level of anxiety, but it should be noted that in the population that did present it, was similarly associated with surgical intervention but with a lower information requirement, this may be due to the fact that in the research, most of the population had already been operated on previously and in addition to this they were of a lower level of education, which is related to low levels of anxiety.

It was established that most patients required additional information in the pre-surgical state, therefore, this aspect is considered to be very relevant for clinical practice, especially in healthcare personnel closely related to those in the surgical context, since in accordance with the study carried out by Alvarado-Rios, et al (2022) Lima-Peru, the lack of adequate information correlates with high levels of anxiety, Consequently, it is suggested that the modification of this factor could mitigate the appearance of mood alterations, for this reason, health complications would be avoided during the immediate postoperative period (20).

5. Conclusions

In this study, it was possible to analyze the levels of preoperative anxiety in patients scheduled for laparoscopic cholecystectomy in a health institution of third level of complexity in the department of Huila, characterized by its high flow of patients and its relevance as a reference care center in southern Colombia. Finding findings similar to national and international courts regarding the identification of some form of anxiety and desire for information prior to the surgical procedure.

It is well known that high levels of preoperative anxiety and the information provided by the health care team impact the need for anesthesia, analgesia, postoperative complications, length of hospital stays, morbidity and mortality. Therefore, through this research it was concluded that place of residence, religion and educational level have an influence on the appearance of anxiety; likewise, about half of the patients required more information regarding anesthesia or the surgery to be performed. This information serves as a regional reference for the identification of health needs from the educational aspect for patients and care personnel.

Therefore, the early identification of preoperative anxiety has a positive impact on the patient's recovery and prognosis, for this reason, it is recommended to intervene early in patients with modifiable factors attributable to anxiety, such as lack of knowledge. However, each patient must be individualized in terms of their health care needs, since detecting problems early allows them to create and work on strategies that are personalized to their beliefs or educational level.

When a correlation is established between anxiety and the lack of information presented by the patient, the care staff is called upon to make detailed explanations, where the surgical act and the anesthetic procedure are clearly described, inviting the patient to resolve all doubts, having as a principle a good doctor-patient relationship and thus reduce the anxiety attributed to ignorance.

Among the limitations of this study is that the sample was collected exclusively in a health care center, which prevents extrapolating the results to the local and regional level, the increase in the size of the sample could have increased the power of the study and therefore, it could have shown more statistically significant results. Likewise, only patients scheduled for a single type of surgical procedure were analyzed, restricting the possibility of identifying predisposing conditions for anxiety due to operative conditions.

The present study serves as a basis for designing case-control investigations where interventions for the control of preoperative anxiety are tested, and future research may focus on comparing the validity of the different scales to assess anxiety. On the other hand, this study can be continued with a retrospective evaluation focused on determining what complications or associated factors were found in the postoperative period.

6. Recommendations

It is recommended to the high-complexity tertiary institution that, due to the lack of information from patients, mental health strategies should be designed in a preventive manner in the company of the psychology service to focus on the preoperative anxiety of these patients, helping them with different emotional interventions

Also propose educational programs on the procedure that will be performed before each surgical intervention, thus making known the procedure that will be performed in a simple way, reducing lack of knowledge and preoperative anxiety. Therefore, it is suggested that future studies that focus on this topic intervene immediately in these patients to make a comparison with the different studies.

References:

[1] Matthias AT, Samarasekera DN. Preoperative anxiety in surgical patients - experience of a single unit. Acta Anaesthesiologica Taiwanica. 2012 Mar 1; 50(1):3–6.

[2] Pastrana Londoño OA, Pinzón Bayona MY. Validation of the Amsterdam Preoperative Anxiety Information Scale (APAIS) in a Colombian Case [Internet]. 2017. Available from: https://repository.urosario.edu.co/bitstream/handle/10336/12853/version%20final%20APAIS%202017.pdf;jsessionid=22362E43788F9C02AB02494E62E6BF6D?sequence=1

[3] Acosta M, Concepción L, Rodríguez A. Treatment of preoperative anxiety. Canary Islands Medical and Surgical . 2003; 1(1).

[4] Quintero A, Yasnó DA, Riveros OL, Castillo J, Borráez BA. Anxiety in the pre-surgical patient: a problem that affects us all.

[5] Gordillo León F, Arana Martínez JM, Mestas Hernández L. Treatment of anxiety in presurgical patients. Clinical Journal of Family Medicine [Internet]. 2011 Oct; 4(3):228–33. Available from: http://scielo.isciii.es/scielo.php?script=sci_arttext&pid=S1699-695X2011000300008&lng=es&nrm=iso&tlng=es

[6] Quijano Andonaire SC. Level of anxiety of the patient in the preoperative period in the surgery service of the Hospital Nacional Dos de Mayo – 2013. Repository Universidad Nacional Mayor de San Marcos [Internet]. Available from: https://hdl.handle.net/20.500.12672/13513

[7] Muñoz Pérez X. Risk factors associated with preoperative anxiety in elective surgeries at the Hospital Universitario del Caribe in Cartagena, Colombia [Internet]. [Cartagena]: University of Cartagena; 2018. Available from: https://repositorio.unicartagena.edu.co/handle/11227/6214

[8] Leon-Girón LF, Cañas JB, Orozco-Chamorro CM, Cabra-Bautista GP, Calvache JA. Evaluation of preoperative anxiety in patients undergoing general anesthesia. Observational study. RFS Revista Facultad de Salud [Internet]. 2017 Jan 9; 9(1):27–34. Available from: https://journalusco.edu.co/index.php/rfs/article/view/1990/3726

[9] Méndez-Meneses KJ, García Rebolledo LM, Chacón Díaz S, Rodríguez Vázquez LA, Acosta Maldonado B, Maya-Mantilla B, et al. Validation of the Amsterdam Preoperative Anxiety and Information Scale (APAIS) in Latin American Women with Breast Cancer: Mexico-Costa Rica Study. Psycho-oncology (Pozuelo de Alarcón) [Internet]. 2019 Jan 1; 16(1):73–88. Available from: https://revistas.ucm.es/index.php/PSIC/article/view/63649

[10] Wilder Bustamante H, Velasquez Oyola MB. Qualitative study of graduates' opinions and expectations in the performance and development of the nursing profession [Internet]. 2012. Available from: https://repositorio.unjfsc.edu.pe/handle/20.500.14067/1476

[11] Moerman N, Van Dam FSAM, Muller MJ, Oosting H. The Amsterdam Preoperative Anxiety and Information Scale (APAIS). Anesth Analg [Internet]. 1996; 82(3):445–51. Available from: https://pubmed.ncbi.nlm.nih.gov/8623940/

[12] Siurana Aparisi JC. The principles of bioethics and the emergence of an intercultural bioethics. Veritas [Internet]. 2010 Mar; 22(22):121–57. Available from: http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0718-92732010000100006&lng=es&nrm=iso&tlng=es

[13] Fernández López O, Jiménez Hernández B, Alfonso Almirall R, Sabina Molina D, Cruz Navarro J. Manual for diagnosis and treatment of anxiety disorders. MediSur [Internet]. 2012; 10(5):466–79. Available from: http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S1727-897X2012000500019&lng=es&nrm=iso&tlng=es

[14] Martínez Urrego JC, Barrera Manrique CE. Incidence of cholelithiasis diagnosed by ultrasound at the Hernando Moncaleano Perdomo University Hospital in Neiva. March to June 2005. Repository Universidad Surcolombiana [Internet]. 2005; Available from: http://repositoriousco.co:8080/jspui/handle/123456789/1079

[15] Gaitán JA, Martínez VM. Biliary lithiasic disease, experience in a fourth-level clinic, 2005-2011. Colombian Journal of Surgery [Internet]. 2014 Sep 20; 29(3):188–96. Available from: https://www.revistacirugia.org/index.php/cirugia/article/view/397

[16] Characteristics and attitudes of Colombians according to their religion. Observatory of Democracy. 2017 Jul 8.

[17] Catacora Choque ÁR. Anxiety levels, preoperative information and associated factors in patients scheduled for surgery in the surgery department of the Goyeneche Hospital – February 2019 [Internet]. 2019. Available from: https://repositorio.ucsm.edu.pe/handle/20.500.12920/8794

[18] Vergara Romero, M. Validation of the Spanish version of the Amsterdam preoperative anxiety and information scale for the assessment of preoperative anxiety [Internet]. [Malaga]: University of Malaga; 2017. Available from: http://orcid.org/0000-0002-2170-2824

[19] Quevedo Preciado AG. "Prevalence of preoperative anxiety in the area of pre-anesthetic care, in patients scheduled for general surgery at the General Hospital of zone #3, Jesus María. [Aguascalientes]: Universidad Autónoma de Aguascalientes; 2023.

[20] Alvarado Ríos V, Huamaccto Caballero YC. Preoperative anxiety in pregnant women scheduled for surgery at the National Maternal Perinatal Institute [Internet]. [Lima]: University of Sciences and Humanities; 2022. Available from: www.uch.edu.pe