# Factors associated with pre-surgical gastroenterological anxiety: a cross-sectional study

**RESUMO |** Objetivo: avaliar a associação de variáveis sócio demográficas e o nível de ansiedade pré-cirúrgica de pacientes submetidos a cirurgias gastrenterológicas. Método: estudo quantitativo, associativo e transversal, realizado na Santa Casa de Misericórdia de Avaré/SP. A amostra foi composta por 105 pacientes, cujos dados foram coletados do prontuário e por meio da aplicação da Escala de Hamilton para avaliação do nível de ansiedade. A coleta de dados foi realizada de maio e julho de 2019. Utilizou-se modelo de regressão linear múltipla para tratamento dos dados. Resultados: houve prevalência do sexo feminino, nível superior e religião católica. Maior parte possuía filhos e eram casados. Menos da metade era portador de alguma comorbidade e pequena porcentagem submetido a algum tratamento cirúrgico. Houve prevalência de acesso a informações sobre ao procedimento a qual seria submetido e quadro leve de ansiedade. Conclusão: pacientes que receberam informações sobre a cirurgia apresentaram menor quadro de ansiedade pré-cirúrgica.
**Descritores:** ansiedade; centros cirúrgicos; orientação, assistência de enfermagem; questionário de saúde do paciente.

**ABSTRACT |** Objective: to evaluate the association of demographic variables and the level of pre-surgical anxiety in patients undergoing gastroenterological surgery. Method: quantitative, associative and cross-sectional study, carried out at Santa Casa de Misericórdia in Avaré / SP. The sample consisted of 105 patients, certain data were collected from medical records and through the application of the Hamilton Scale to assess the level of anxiety. Data collection was carried out from May to July 2019. A multiple linear regression model was used for data treatment. Results: prevalence of females, higher education and Catholic religion. Most had children and were married. Less than half had any comorbidity and a small percentage underwent some surgical treatment. Prevalence of access to information about the procedure to be submitted and anxiety. Conclusion: patients who receive information about clinical surgery less preoperative anxiety.
**Keywords:** anxiety; surgical centers; guidance, nursing care; patient health questionnaire.

**RESUMEN |** Objetivo: evaluar la asociación de variables sociodemográficas y el nivel de ansiedad prequirúrgica en pacientes sometidos a cirugías gastroenterológicas. Método: estudio cuantitativo, asociativo y transversal, realizado en la Santa Casa de Misericordia de Avaré/SP. La muestra estuvo conformada por 105 pacientes, cuyos datos fueron recolectados de las historias clínicas y mediante la aplicación de la Escala de Hamilton para evaluar el nivel de ansiedad. La recolección de datos se llevó a cabo en mayo y julio de 2019. Para el procesamiento de los datos se utilizó un modelo de regresión lineal múltiple. Resultados: hubo predominio del sexo femenino, educación superior y religión católica. La mayoría tenía hijos y estaban casados. Menos de la mitad tenía alguna comorbilidad y un pequeño porcentaje había sido sometido a algún tratamiento quirúrgico. Prevaleció el acceso a la información sobre el procedimiento al que sería sometido y leve ansiedad. Conclusión: los pacientes que recibieron información sobre la cirugía presentaron menor ansiedad prequirúrgica.
**Palabras claves:** ansiedad; centros quirúrgicos; orientación, cuidados de enfermería; cuestionario de salud del paciente.

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## INTRODUCTION

Anxiety is a feeling of fear, vague and unpleasant, characterized by discomfort or tension derived from an anticipation of danger, something unknown or strange 1 that, when primary, it is an adaptive phenomenon necessary for coping with everyday situations. 2

The intensity and duration of anxiety vary from individual to individual and according to the different situations to which they are exposed. 2

It should be considered that fear occurs when an external triggering stimulus causes escape and avoidance

behavior, while anxiety is an aversive emotional state without clear triggers that obviously cannot be avoided. 3

Anxiety disorders differ from each other in the objects or situations that induce fear, anxiety, or defensive movement behavior. 4

In an attempt to reduce these levels, strategies are necessary for their detection and treatment in an attempt to alleviate these levels of anxiety, and interaction with the patient is essential, as they seek clarification on their doubts. Preoperative psychosocial assessment should be incorporated into routine nursing practice and every patient should receive preoperative information prior to surgery. 5

The nursing team, as well as the nurse, in the daily routine of their duties in the surgical center, often manages to alleviate this feeling, effectively collaborating in the postoperative recovery.

Guidance is a way to clarify doubts, which often act as a trigger for the development of anxiety in the face of a surgical intervention. In view of this, the nurse is a professional who, in addition to being prepared to perform it, is legally and morally obliged to perform it, preparing the patient for the surgery to be performed, for pre and post-procedure care, risks and benefits in accessible language. 6

In pre-surgical patient care, the nursing team is responsible for their preparation, establishing and developing various care actions according to the specifics of the surgeries.

The nursing team that works in the surgical clinic has a fundamental role in reducing the anxiety level of patients. Therefore, through knowledge of the level of anxiety, it is possible for nurses to list effective interventions to provoke behavioral changes and facilitate acceptance of the hospitalization process and the surgical procedure.

Knowing the predictors, profile, characteristics, signs and symptoms of the patient who demonstrates anxiety in the preoperative period provides support for action planning and evidence-based nursing care and individualization of care. 7

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In this context, nurses are challenged to offer quality care, which involves, in addition to physical preparation, the psychological preparation of the patient, seeking to minimize discomfort and lack of information, which would damage their recovery after the surgery.

Thus, considering the few studies in the literature, understanding the interference of anxiety in people's daily lives and how factors are associated can contribute to the development of health policies and the improvement of care services, aiming at the quality and safety of care provided to surgical patients.

This study aims to evaluate the association of sociodemographic variables and the pre-surgical level of anxiety in patients undergoing surgical procedures in the specialty of gastroenterology.

## METHOD

This is a quantitative, associative and cross-sectional study carried out at the Santa Casa de Misericórdia de Avaré, classified as a large hospital, with 174 beds distributed as follows: 109 for the SUS and the other beds for medical insurance. It is a reference for service in 17 municipalities, according to the organization of the SUS service network.

The surgical clinic has 48 beds for general surgery specialties such as vascular, neurological, plastic, urological, gynecological, gastroenterological surgeries and 6 beds for orthopedics/traumatology. The specialty of gastroenterology was chosen, considering the greater demand for the procedure.

For data collection, prior contact was made with the nurse of the surgical clinic to verify the possibility of establishing a time for the presentation of the project. Subsequently, the best time for data collection was verified, which occurred daily by the researcher, for a delimited period of two months, from May to June 2019.

As inclusion criteria, we used a minimum age of 18 years, having a schedule for surgery in the gastroenterology specialty during the data collection pe-

riod and agreeing to participate in the research by signing the Informed Consent Form (ICF). The exclusion criteria were age below 18 years, not having a schedule for surgery in the gastroenterology specialty during the data collection period and not agreeing to participate in the research by signing the Free and Informed Consent Form (ICF).

Each patient was informed about the purpose of the research and invited to participate in the study after signing the ICF.

The research was approved by the Research Ethics Committee of the Faculty of Medicine of Botucatu, Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP, under the number CAAE 12167119.1.0000.5411.

As data collection instruments, the patient's chart was used for sociodemographic characterization and the Hamilton Anxiety Assessment Scale - HAM-A validated in Brazil in 1998. 8 The Scale comprises 14 symptom groups, subdivided into two groups; seven related to symptoms of anxious mood and seven related to physical symptoms of anxiety. Each item is evaluated according to a scale ranging from 0 to 4 intensity (0=none 1=mild 2=moderate 3=severe 4=extremely severe). The sum of the scores obtained in each item results in a total score, which varies from 0 to 56. Its elaboration was based on the principle that the more severe the manifestation of a pathology, the greater the number of characteristic symptoms that present themselves. If the number of symptoms is relatively high, the symptom count becomes a useful, reliable and valid quantifying instrument. 9

For sample characterization, the following variables were adopted: age, sex, marital status, if you have children, religion, education level, occupation, surgical procedure to which you will be submitted, illness, if the patient had any kind of information about the surgery and who informed him and if the information was satisfactory.

To assess the association between socio-demographic variables and anxiety level, a multiple linear regression model with normal or symmetrical responses was adjusted. The assumptions of the final model chosen were checked by residual and diagnostic analysis.

[...] considering the few studies in the literature, understanding the interference of anxiety in people's daily lives and how factors are associated can contribute to the development of health policies and the improvement of care services, aiming at the quality and safety of care provided to surgical patients

Associations were considered statistically significant and p< 0.05. The analysis was performed using the Statistical Package for the Social Sciences-SPSS v 210 software.

## RESULTS

Regarding sociodemographic aspects, it can be observed that, of the total of 105 people, 49.5% were male and 51.5% were female. Of these, only 13.3% had a higher education level. As for religion, 64.8% said they belonged to the Catholic religion. Of those interviewed, 82.9% had children and 69.5% claimed to be married, as shown in Table 1:

Table 2 shows the health profile, with 40% having some comorbidity before the indication for surgery and 26.7% having received some surgical treatment prior to the current surgery. Regarding access to information about the procedure to which it would be submitted, a satisfactory result was obtained, with a percentage of 97.1% of respondents. According to the application of the Hamilton-A scale, 91.4% of the interviewees obtained a score lower than 17 points, a result considered normal in relation to anxiety and 8.6% had a mild anxiety condition.

In order to verify whether there is an association between independent variables (sociodemographic data, data on health history and clinical conditions) and pre-surgical anxiety, a logistic regression model was adjusted (Table 3). Table 3 shows that the chance of pre-surgical anxiety was on average 6.8% higher among patients who had higher education, compared to patients who had education up to high school (p=0.010). It was also observed that the chance of pre-surgical anxiety was lower among married patients compared to unmarried patients (p=0.024).

In Table 4, the multiple logistic regression model shows that the chance of pre-surgical anxiety was

4.11 times higher among patients with higher education, compared to patients who had education up to high school; however, the association was significant (p=0.153).

It was also shown that the chance of pre-surgical anxiety was lower among patients with comorbidity (or comorbidities) compared to patients who do not have comorbidity (s) (p=0.006).

**Table 1. Distribution of patients according to sociodemographic variables. Avaré/SP, Brazil, 2019.**

| Sample Profile (n=105) | |
|---|---|
| **Variables** | **n (%)** |
| **Sociodemographic aspects** | |
| Male gender | 52 (49.5%) |
| Median age (minimum-maximum) | 43 (18-80) |
| Has higher education | 14 (13.3%) |
| Catholic religion practitioner | 68 (64.8%) |
| Has children | 87 (82.9%) |
| Median number of children (minimum-maximum) | 2 (0-10) |
| Married | 73 (69.5%) |

Source: Survey data/2019.

**Table 2. Distribution of patients according to health variables and anxiety level. Avaré/SP, Brazil, 2019.**

| Sample Profile (n=105) | |
|---|---|
| **Variables** | **n (%)** |
| **Do they have any comorbidities?** | 42 (40.0%) |
| The patient has a surgical history | 28 (26.7%) |
| Surgery guidelines | |
| The patient received information about the surgery | 102 (97.1%) |
| Anxiety | |
| Median HAM-A score (minimum-maximum) | 7 (0-23) |
| HAM-A score < 17 | 96 (91.4%) |
| HAM-A score 18-24 | 9 (8.6%) |

Source: Survey data/2019.

**Table 3 – Bivariate associations for the chance of moderate pre-surgery anxiety. Avaré/SP, Brazil, 2019.**

| Variable | OR | IC95% | | P |
|---|---|---|---|---|
| **Male gender** | **,26** | **,05** | **1,33** | **,106** |
| **Age (years)** | 1,02 | ,98 | 1,07 | ,268 |
| Higher education (Ref.: up to high school) | 6,88 | 1,58 | 29,89 | ,010 |
| Catholic religion practitioner | 2,01 | ,40 | 10,20 | ,401 |
| Does the patient have children? | ,37 | ,08 | 1,65 | ,192 |
| Number of children | ,87 | ,58 | 1,31 | ,511 |
| Married marital status (Ref.: Others) | ,19 | ,04 | ,80 | ,024 |
| Has comorbidity(s) | 3,33 | ,78 | 14,16 | ,103 |
| Has a surgical history | ,77 | ,15 | 3,94 | ,753 |
| Received information about the surgery | ,17 | ,01 | 2,09 | ,166 |

Source: Survey data/2019.

## DISCUSSION

In addition to the biological and social factors that may contribute to the difference between the percentages of mental disorders between men and women, some risk factors seem to be common to both, such as psychosocial conditions and support, socioeconomic status, lifestyle and health status. 10

The woman expresses her anxiety more easily than the man. 11 Several studies suggest that genetic factors and female sex hormones may play important roles in the expression of these gender differences. 12

Regarding the question of age, it was a sociodemographic data, where we can link to the current moment to which the individual is exposed, of tension or discomfort due to surgery, considering that anxiety can affect all age groups.

In Brazil, there are few studies indicating the prevalence of the diagnosis of anxiety in society. 13

It was found in this study that the association between education and anxiety is greater in individuals with higher education. Patients with preoperative trait anxiety and lower levels of formal education had higher long-term mortality, followed for ten years. 14 However, there is a lack of knowledge in this regard.

As the majority of the patients mentioned the practice of religion, being mostly practitioners of the Catholic religion. In this sense, religiosity has a positive influence on the health pro-

cess.

When a physical illness arises, religion and spirituality become important factors in coping with patients who have to deal not only with unpleasant physical symptoms,

but also with the stress of hospitalization, latent conflicts regarding separation and loss, as well as threatening the person's sense of control and adequacy. Hospitalization makes patients undergoing surgery abandon their usual roles in society, assume a more dependent role and face the unknown. Religious or spiritual beliefs can help patients deal with these stressful experiences. 15

Regarding marital status and children, it was evidenced in the literature that patients welcomed by family members improved their anxiety symptoms. A study pointed out that the best sources of social support are related to family members, followed by neighbors, friends, health professionals and co-workers/bosses. 16

In the assessment of preoperative comorbidities, the present study showed that a considerable part of the patients reported such a situation, which may interfere with recovery in the postoperative period, depending on the type of comorbidity.

Patients who had already undergone surgical procedures were the minority. Even so, any new or unknown event generates in people a feeling of anxiety as a reaction to danger or threat. Scientifically, immediate or short-term anxieties are defined as fight and flight reactions, as in the context of surgery. Negative or positive cognitive evaluations depend on the reality data that the individual has, which are constituted through the experiences he/she has had throughout his/her life, the meanings attributed to these events and his/her formulations about the surgery. 17

**Table 4 – Multiple logistic regression for the chance of moderate pre-surgery anxiety. Avaré/SP, Brazil, 2019.**

| Variable | OR | IC95% | | P |
|---|---|---|---|---|
| **Male gender** | ,22 | ,02 | 2,44 | ,215 |
| **Higher education (Ref.: up to high school)** | 4,11 | ,59 | 28,42 | ,153 |
| Marital status: Married (Ref.: Others) | ,08 | ,01 | ,70 | ,022 |
| Has comorbidity (comorbidities) | 17,66 | 2,25 | 138,90 | ,006 |
| Received information about the surgery from the nursing staff | ,02 | ,00 | 1,52 | ,076 |

Source: Survey data/2019.

An individualized intervention plan in the preoperative period, with an understanding of the demands that each patient has, allows the development of strategies that impact and influence care. Planned care, together with preoperative health education, facilitates postoperative recovery and alleviates anxiety, in addition to providing treatment adherence (18-19), which can be verified by the anxiety level of the patients in this study, who received guidance and information about the surgery, having a low anxiety level score.

Some limitations of the study should be pointed out, such as the short follow-up time of the patients and the route to the postoperative period, the small sample size and the scarcity of updated literature on the subject.

Anxiety is a feeling that may not be shown by some people right away, which needs further study and deepening.

## CONCLUSION

The present study revealed that patients who received information about the surgery had less preoperative anxiety. There was a predominance of mild anxiety, according to the assessment of the proposed scale, more present in women, with higher education and among those married and with children.

Such congruences signaled the importance of presenting information to the patient regarding their surgery, making them aware of all the operative steps and, consequently, strengthening the bonds of reliability with the professionals who will be part of their treatment.

It is also considered that the nursing team is often the professional closest to the patient throughout the treatment, in order to favor the identification of needs in the context of mental health, as well as the guarantee of immediate interventions.

This study confirmed the possibility of using the anxiety scale in inpatient surgical patients. It also showed that the assessment of anxiety in the preoperative period should be performed, regardless of whether or not the patient has serious clinical and/or surgical disease, some type of differentiated care and mental health diseases.

We must consider it as an important reflection on how to humanize the care and the moment before the surgery of these people and, thus, reduce the suffering and anguish, collaborating in their recovery.

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