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Uncertainty prior to Taking an Endoscopy or Colonoscopy

La incertidumbre previo a la toma de una endoscopia o colonoscopia

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ABSTRACT:

Introduction. Uncertainty is one of the difficulties in defining the meaning of situations related to diseases; it is also a significant source of psychosocial stress during their trajectory. Endoscopic exams, although minimally invasive, generate fear and uncertainty. Cancer (gastric, colorectal) is a premature cause of mortality; diagnostic aids are necessary for its detection, which generate uncertainty.
Objective. This work sought to determine the level of uncertainty in people prior to an endoscopy or colonoscopy procedure, according to Mishel's theory.
Materials and Method. Quantitative, descriptive, cross-sectional study, non-probability convenience sampling. The sample was made up of 477 participants who were administered "Merle Mishel's uncertainty in disease scale", adapted for diagnostic procedures in 2017, with Cronbach's alpha of 0.90. The statistical analysis was performed by calculating measures of central tendency, dispersion, and position measures.
Results. The mean age was 53 years, 51.5% had moderate level of uncertainty; the higher the level of education, the lower the uncertainty (p = 6.286), the dimension with the highest level of uncertainty was complexity.
Conclusions. Uncertainty caused by a situation, such as the diagnosis of a chronic disease causes a stressful state in individuals. Application of Mishel's theory guides nursing professionals to identify levels of uncertainty by developing coping mechanisms to achieve adaptation to the results exposed.

Key Words: Uncertainty; Nursing Care; Chronic disease; Diagnostic techniques of the digestive system.

RESUMEN:

Introducción. La incertidumbre es la dificultad para definir el significado de situaciones relacionadas con enfermedades; además, es fuente significativa de estrés psicosocial en su trayectoria. Los exámenes endoscópicos, aunque mínimamente invasivos, generan miedo e incertidumbre. El cáncer (gástrico, colorrectal) es una causa prematura de mortalidad; para su detección, son necesarias las ayudas diagnósticas, las cuales son generadoras de incertidumbre.
Objetivo. Determinar el nivel de incertidumbre en las personas previo a la toma de una endoscopia o colonoscopia de acuerdo a la teoría de Mishel.

Materiales y método. Estudio cuantitativo, descriptivo, transversal, muestreo no probabilístico por conveniencia. La muestra conformada por 477 participantes a quienes se les aplicó la "Escala de Incertidumbre en la Enfermedad de Merle Mishel", adaptada para procedimientos diagnósticos en el año 2017, con Alfa de Cronbach 0.90. El análisis estadístico se realizó con cálculo de medidas de tendencia central, de dispersión y medidas de posición.
Resultados. La edad promedio fue de 53 años, el 51,5 % presentó nivel moderado de incertidumbre; a mayor escolaridad menor incertidumbre (p = 6,286), la dimensión con mayor nivel de incertidumbre fue la complejidad.
Conclusiones. La incertidumbre que genera una situación como el diagnóstico de una enfermedad crónica, causa en los individuos un estado estresante; la aplicación de la teoría de Mishel orienta al profesional de enfermería a identificar el nivel de incertidumbre generando mecanismos de afrontamiento para lograr la adaptación a los resultados expuestos.

Palabras claves: Incertidumbre; Cuidado de Enfermería; Enfermedad Crónica; Técnicas de diagnóstico del sistema digestivo.

INTRODUCTION

Uncertainty refers to the inability to define the meaning of situations related with diseases, personal or environmental situations; and it is recognized as a threat of psychological stress[1-2]. In addition, it is characterized by the perception of individuals on the ambiguous meaning of the symptoms and other experiences related with a pathology. The complexity of this event is hidden and the terms used to explain it when it occurs suddenly or surprisingly of what its future will hold in terms of function, recurrence, and survival[3].

Likewise, it is affirmed that the world is more sensitive to any situation from the environment, that is, to that uncertainty; thereby, it must be faced according to each situation or event[4]. It also has an important impact on the diagnosis, management, and rehabilitation of patients with chronic noncommunicable diseases (CNCD), which provokes a level of uncertainty that can affect the management and control of the entity [5]. Currently, it has been studied and is considered a type of provoking thought or type of stress, which when not being sure of what to do, the mind knows there is a problem or danger where the individual must be more alert and encourages the individual to think, given that it is a new situation and it is when the state of uncertainty emerges [3].

Diagnostic exams are tests to determine the state of health of a patient who may or may not have a disease; in addition to establishing differential diagnoses, evaluating the severity of a pathology, and setting up treatments and possible prognostic results[6]. Undergoing an endoscopy or colonoscopy, although minimally invasive procedures, can cause fear and uncertainty in those on whom these will be conducted; this translates into feelings of distress and fear on said moment; inducing patients to think of multiple complications and limitations for their lives [4]. It is important to highlight that by taking an endoscopy or colonoscopy, one seeks to prevent or detect in time gastric and colorectal cancer, which are part of CNCD; with these entities being the cause of 71% of deaths globally, mostly of premature cause [7].

The nursing discipline has carried out studies to measure uncertainty in individuals with CNCD, but few studies have been conducted with the adaptation and validation instrument provided by Mishel's Uncertainty in Disease Scale in diagnostic procedures. Hence, as theoretical support for this research, there is Merle Mishel's theory that guides nursing professionals to identify the patient's level of uncertainty

upon undergoing endoscopic exams, which permits planning subsequent care interventions that contribute to patients and their families to generate positive coping strategies to manage to adapt to the results exposed and counteract the disease uncertainty [1, 8].

It is important to define the dimensions described in Merle Mishel's Uncertainty in Disease Scale, such as *Ambiguity* that refers to the state of the disease, *Inconsistency* or lack of information about the state of health, *Unpredictability* related with the course of the disease, and *Complexity* that refers to the lack of clarity in the information received [9]. It is an input that guides the practice and interventions [10] prior to taking endoscopic exams to contribute in nursing care.

When performing endoscopic procedures, the nursing staff plays an important role in preparing the patient, as well as generating an environment of trust and communication (patient-health professional) to provide comprehensive care, diminish possible complications and emotional conditions generated by the procedure and, thus, provide quality in care [11]; herein, it is important to determine uncertainty levels in individuals prior to undergoing endoscopy or colonoscopy procedures in Health Service Provider Institutions (IPS, for the term in Spanish) to establish a scientific baseline to enhance nursing care in endoscopic services.

MATERIALS AND METHODS

Study with quantitative approach of descriptive, cross-sectional type, with non-probabilistic convenience sampling. The study universe was made up by individuals who are prior to taking an endoscopy and colonoscopy from Health Service Provider Institutions in Villavicencio, Colombia; the population comprised individuals programmed for an endoscopy or colonoscopy procedure in an IPS and who were from different municipalities from the Department of Meta in Colombia, with a 12-month chronogram of activities and procedures to conduct the research.

The sampling was non-probabilistic through convenience, stratified, in such a way that the sample was formed according to the ease of access, the availability of the people who were part of the sample, in a quarter of the year 2022 and the fulfillment of the inclusion criteria, like: being > 18 years of age, adequate cognitive capacity, and participating voluntarily in the research. The stratification had two sampling units: first, with the IPSs from the city of Villavicencio – Meta, which conducted endoscopies and colonoscopies and second, with the individuals undergoing the endoscopy or colonoscopy during the time period established. The participants were approached before taking the diagnostic exams described, and this was done with the aid of the database of the programming of these procedures provided by the IPSs, useful data for the sociodemographic characterization. The surveys were carried out in guided manner, like: the informed consent, measurement of the cognitive capacity and the questionnaire to measure uncertainty, with an estimated time of 40 minutes, for n = 477 participants.

The information was collected through a sociodemographic characterization survey and to see the relationship with the dimensions of uncertainty. To measure uncertainty, Mishel's uncertainty scale was applied, adapted for diagnostic procedures in Spanish version and validated in the Colombian population by Leidy Yazmin Díaz

Moreno [9], who authorized use of the instrument, with Cronbach's alpha of 0.90. It has 27 items, four dimensions: ambiguity, complexity, inconsistency, and unpredictability, with Likert-type response option from 1 to 5, with 5: Sure, 4: Almost sure, 3: Moderately sure, 2: A little sure, 1: Unsure, with a higher value meaning a higher level of uncertainty. The minimum value for each item is 1 and the maximum is 5, except for items 4, 9, 11, 12, 13, 15, 17, and 19 where the score is inverted. The uncertainty level is valued in the following manner: Low level of uncertainty: (27-54), moderate level of uncertainty: (55-81), high level of uncertainty (82-135).

A 3-month time period was established for the analysis. Bearing in mind quantitative variables, calculation of measures of central tendency, mean, dispersion by range and standard deviation, measures of position percentiles and quartiles were performed. To establish uncertainty, the Shapiro normality test was performed. For the relationship of the uncertainty variables with sociodemographic variables, the analysis of variance (ANOVA) was applied. The ethical considerations requested the informed consent; clarifying that the information was confidential without registering the participant's identity. The provisions of Resolution 8430 of 1993 of the Colombian Ministry of Health were applied, as well as the international Helsinki declaration [12].

RESULTS

Sociodemographic variables

The study interviewed 279 women and 198 men, with a mean age of 53 years; 13% without educational level and incomplete primary; 43.61% with incomplete and complete high school; 27.46% with undergraduate and graduate studies. Nearly 68.55% manifested having a partner. In terms of occupation, 56.4% reported being employees and independent workers; 35.64% were dedicated to the household and were pensioned; and 61.645 were in economic levels one and two. Experience prior to the procedure was reported by 36.69%. Procedures were conducted for cancer control (gastrointestinal) 37.5%, gastritis 30.19%, hemorrhage of lower and upper digestive tracts and polyps 14.47%, hemorrhoids 3.77% (Table 1).

Table 1. Sociodemographic characteristics of the participants prior to undergoing an endoscopy and colonoscopy.

Variables	Results n 477 (%)
Age in years	
ME	53
SD	16
MIN	17
P. 25%	41
P. 50%	53
P. 75%	64
MAX	92
Gender	
Female	279 (58.49%)
Male	198 (41.51%)
Schooling	
None	13 (2.73%)

Incomplete primary	49 (10.27%)
Complete primary	50 (10.48%)
Complete high school	152 (31.87%)
Incomplete high school	56 (11.74%)
Complete technical school	26 (5.45%)
Complete university	94 (19.71%)
Incomplete university	19 (3.98%)
Graduate school	18 (3.77%)
Marital status	
Married and Common law	327 (68.55%)
Separated – widowed – single	150 (31.45%)
Socioeconomic level	
1	94 (19.71%)
2	200 (41.93%)
3	170 (35.64%)
4 – 5 -6	13 (2.73%)

Source: elaborated by the authors. *n: absolute frequency; %: Absolute frequency*

Perceived uncertainty

In all, 51.5% (246) of the patients reported moderate level of uncertainty, followed by high level with 28.9% (138) and low level of uncertainty with 19.5% (93) (Table 2).

Table 2. Level of uncertainty prior to undergoing endoscopy and colonoscopy.

Level of uncertainty	No. patients	Mean	SD	min	p25	p50	p75	max.
Low	93	42.3	6.8	27	37	41	49	54
Moderate	246	70.8	7.0	55	66	72	77	82
High	138	91.5	7.7	82	85	90	96.75	118

Source: elaborated by the authors. *SD: Standards deviation; min: minimum value; max: maximum value. p25: percentile 25; p50: percentile 50; P75: percentile 75.*

Level of uncertainty by dimensions

The patients perceive a higher level of uncertainty in the complexity dimension (13.63%) and low level of uncertainty in the ambiguity dimension (25.37%).

In the ambiguity dimension with the question: *"Do you know the steps of the exam that will be conducted"*, it was found that 59.5% were a little sure and unsure and 13.8% were moderately sure. In the question: "*Are you clear about what Will happen to you after the exam"*, 63.3% feel between a little sure and unsure and 17% feel moderately sure, and: *"do you know how to take care of yourself after the exam*", 56.2% feel between a little sure and unsure, and 18.4% feel moderately sure.

In the complexity dimension, 78.9% of the patients feel sure and almost sure with the questions "*is the purpose of the exam clear"* and 52.6% with "*do you understand what has been explained about the exam that will be conducted".* Likewise, 86.1% *"Trusts that the health staff will be there when they need it"*.

In the inconsistency dimension, 56.1% of the participants feel between moderately sure, almost sure and sure in the questions: "*Do the explanations provided seem confusing"*, also, 57.9% feel "*They have been given different opinions about the exam procedure"*; 51.7% *"the results of their prior exams are confusing",* regarding the question: *"Do you know your diagnosis",* 48.9% feel moderately sure, a little sure, and unsure.

In the unpredictability dimension, 52% feel unsure with the question: "*Do you know how long the exam will last"*, equally so, 51% feel unsure when asked *"can you explain how to carry out the exam"*; moreover, 67% feel sure because *"they believe nothing bad will be found during their exam"* (Table 4).

Table 4. Participant uncertainty prior to undergoing an endoscopy or colonoscopy, according with each dimension.

Questions	S	CS	MS	PS	I
Ambiguity: uncertainty level (n %) high: 54 (11.32) moderate: 302 (63.31) low: 121 (25.37)					
3. Do you know what you may feel during the exam?	19.5	9.0	9.6	9.6	52.2
7. Do you know the steps of the exam you will undergo?	21.4	5.2	13.8	9.2	50.3
11.The exam is quite complicated to understand what will happen while being conducted.	18.4	13.2	26.8	6.9	34.6
12. In this place there are different health staff and it is not clear who will carry out the exam.	35.6	3.8	10.7	11.1	38.8
13. Given that you do not know what will be the exam results, is it difficult to plan your future?	15.9	8.6	19.1	10.3	46.1
14. Do you know how to take care of yourself after coming out of the exam?	21.0	4.4	18.4	11.5	44.7
16. Is it clear what will happen to you after the exam?	12.8	6.9	17.0	8.0	55.3
18. Do you know if a treatment exists in case of having a negative diagnosis?	22.2	9.6	14.3	9.0	44.9
19. Is it difficult to determine if after the exam you will be able to take care of yourself?	32.1	6.5	19.3	16.6	25.6
21. Do you know what you can and cannot do during the exam?	28.3	16.4	16.4	6.3	32.7
Complexity: uncertainty level (n %) high: 65 (13.63) moderate: 264 (55.35) low: 148 (31.03)					
5. Is the purpose of the exam clear?	66.5	12.4	11.1	3.4	6.7%
6. Some discomfort or pain indicate that you have a health problem that requires carrying out the exam.	53.5	9.2	18.2	10.3	8.8
8. Do you understand everything that has been explained about the exam that will be conducted?	32.3	20.3	26.2	4.0	17.2
23. Do you believe the exam that will be conducted will be successful?	75.1	12.8	9.0	1.5	1.7
25. Do you trust the health staff will be there when you need it?	74.6	11.5	9.4	1.3	3.1
26. Do you know you can ask questions about the exam that will be performed?	68.1	10.1	15.5	2.5	3.8
27. Do physicians and nurses use clear language and do you understand what they are telling you?	43.2	13.6	34.0	4.6	4.6
Inconsistency: uncertainty level (n %) high: 58 (12.16) moderate: 159 (33.33) low: 260 (54.51)					
1. Do you know why this exam is being done?	63.1	18.0	11.1	4.2	3.6
2. Have your doubts about the exam you will be undergoing been cleared?	27.9	20.5	30.2	6.5	14.9
4. Do the explanations you have received about the exam seem confusing?	8.4	5.5	42.3	12.6	31.2
9. Is the information provided by the health staff about the exam understood in different ways?	10.3	6.5	29.6	15.3	38.4
15. Have you been given different opinions about the	32.1	6.5	19.3	16.6	25.6

performance of the exam?					
17. Are the results of your prior exams confusing?	29.1	6.5	16.1	6.5	41.7
24. Do you know your diagnosis?	44.9	6.3	16.6	3.8	28.5
Unpredictability: uncertainty level (n %) high: 16 (3.35) moderate: 244 (51.15) low: 217 (45.49)					
10. Do you know how long the exam will last?	17	5	20	7	52
20. Can you explain how the exam will be carried out?	14	4	18	13	51
22. Do you believe nothing bad will be found in your exam.	67	13	12	4	4

Source: elaborated by the authors. *n: absolute frequency; %: relative frequency. Adjusted by dimensions, taken from the original instrument. S: sure, CS: almost sure, MS: moderately sure, PS: a little sure, I: unsure. Questions 4, 9, 11, 12, 13, 15, 17, and 19 are evaluated inversely*.

Relationship among uncertainty dimensions and sociodemographic variables

No significant difference exists between those who underwent endoscopy vs. those who underwent colonoscopy; hence, these are procedures that generate uncertainty. With respect to the question: *Has this procedure been done to you before*, the participants manifest less uncertainty related with those who had not undergone the procedure.

Gender has no influence on the level of uncertainty (p = 0.633), with greater schooling meaning lower uncertainty (p = 6.286). Regarding age, younger participants have lower uncertainty level (p = 0.00264), lower economic level means higher level of uncertainty (p = 0.000105). The special health insurance regime has higher level of uncertainty related with other types of health insurance (contributive or subsidized) (p = 6.147). People diagnosed with cancer have greater uncertainty levels (p = 8.738) with respect to those who do not have a defined diagnosis, but are sure and almost sure that nothing bad will be found during the exam (80%) (Table 5).

Table 5. Relationship among uncertainty dimensions and sociodemographic variables

Variable	Uncertainty dimensions. p value				
	AMBIGUITY	COMPLEXITY	INCONSISTENCY	UNPREDICTABILITY	TOTAL
Endoscopy and colonoscopy procedure	0.226	0.874	0.228	0.371	0.688
Has this procedure been done to you before?	2.786	0.024	1.472	4.526	5.069
Schooling	0.0021	2.830	0.000052	9.781	6.286
Age	0.037	0.000052	0.032	0.125	0.0026
Gender	0.549	0.232	0.352	0.659	0.633
Socioeconomic level	0.220	0.0035	2.643	0.00011	0.00010
Health insurance regime	0.000051	0.00083	1.633	2.940	6.147

Current disease	2.560	0.080	6.841	7.135	8.738

P value resulting from ANOVA. When p < 5% (0.05), no significant difference exists among the categories of the variables.

DISCUSSION

According to the results, the mean age of the participants was 53 years; similar to the study by Gómez *et al*., [13] where it was 52 years; different from the study by Valderrama *et al*.,[14] with 39 years, another study[15] with 68.64 years. This is why it is considered that in different age ranges, people are subjected to endoscopic exams to rule out or confirm any disease, like cancer and which, according with the literature, this entity is considered of adults and its incidence increases with age, with the highest peak between 50 and 70 years. In turn, it is important to highlight that this pathology occurs in people < 40 years of age in 2.4%[16]. Moreover, García *et al*.,[17] state that age is associated with increased incidence of both benign and malignant gastrointestinal pathology.

In this study, the participants did not reach complete primary and high school levels, where education is fundamental in health education processes; similar research indicates correlation between schooling and level of uncertainty, where greater instruction means lower level of uncertainty[4] [15]. Also, for Johnson *et al*., [15] the degree of schooling is correlated negatively with the uncertainty level and according the Theory of Uncertainty of Disease, an inversely proportional relation exists between educational level and uncertainty, where a higher educational level means lower uncertainty[18]. The economic level that prevailed most was, strata one and two, similar to the study by Sanabria *et al*., [19] who relate low economic level with deficient health status. The study found that 68.55% of the participants were married or in common-law relationship, which decreases uncertainty due to social support [15], an aspect not evidenced in the present study; likewise, for Merle Mishel, the social network is important to diminish uncertainty.

With respect to the variables generating the highest (50.3%) uncertainty level *"Do you know the steps of the exam you will undergo?*", the participants have greater uncertainty level due to lack of clarity related with the procedure and the questions it generates; which was solved in confusing manner by the health professionals, as reported by Burbano *et al*.,[20] and Sajadi *et al*., [21].

Regarding the question *"Given that you do not know what will be the exam results, is it difficult to plan your future?"* (46.1%), similar studies found a higher level of uncertainty (86.1%) Montalvo *et al*.,[22] report not knowing how long it will take (50.9%), which is why they cannot plan their future. Due to the foregoing, professional intervention is important for future planning, according to each case; be it short-, mid-, and long-term; and, thus, think of possible risks and gains, including health complications [3].

Regarding the question: "*Do you believe the exam that will be conducted will be successful?"* (75.1%), success can depend on the nursing intervention that should clear doubts and concerns and see the knowledge users have of the practice phenomenon to facilitate health care [23]. Furthermore, interacting with users, who have dimensions that must be approached holistically and, thus, patients trust that the health staff will be there when they need it (74.6%).

In taking the exams, the nursing staff plays an important role in preparing the patients; they must create an environment of trust and communication (patient-health professional) to provide comprehensive care, reduce possible complications and emotional conditions that are generated by the procedure, and provide quality care [24]. Besides, performing timely interventions according to individual needs and, thus, turn uncertainty into an opportunity in life adaptation [20].

The present study reported moderate level of uncertainty (51.5%), similar to the study by Ozawa *et al*., [25] with 56.5% and the study by Dong *et al*.,[26] with 52.22%; the latter generated by monthly family income, duration of the disease (28 days or more); aspects not evaluated in the present study. In the study by Muñoz *et al*., [27] 62% had irregular degree of uncertainty generated by feeling unsure by not knowing the course of the disease.

The study by Bonilla[28] reports moderate level of uncertainty (38%) and it was because the participants had many questions without answers to know their pathological condition, its progress, improvement or complication. Rather, in this study, the patients understood everything explained about the exam to be conducted. Likewise, in the study by Rodríguez *et al*., [29] uncertainty was present in 36.4% of the participants and was correlated with low quality of life; contrary to the present study, with moderate level of uncertainty, which was not correlated with quality of life. Endoscopic exams diagnose chronic diseases that affect the quality of life of patients due to the course, treatment, and duration of these entities [29].

The study by Valderrama *et al*.,[14] with high level of uncertainty (80.8%) generated by the information provided prior to taking the exam; given that it was understood in different ways. Thereby, lack of information about the disease with regards to treatment, possible comorbidities, and the means to prevent the comorbidities were considered sources of uncertainty for the patients[30]. In this study, the participants (41.7%) stated that the results of their prior exams are confusing and they suspected that in the result something bad could be found (67%). For Hinojosa *et al*., [8] uncertainty is generated in the disease or during its course and on the negative experiences lived, given that they affect the family and the environment. This is where the intervention by nursing professionals must identify support networks to face the cause and for the uncertainty to be lower.

CONCLUSIONS

This study reported moderate level of uncertainty, which indicates that strategies must continue to strengthen health promotion and disease prevention in endoscopic services; bearing in mind that when subjected to endoscopy or colonoscopy, one seeks to discard or confirm a chronic disease (cancer), where scientific evidence indicates that cancer occurs in high percentage in adults and increases with age.

It was detected that low schooling and low economic level intervene in the feeling of uncertainty. For this reason, when detecting this type of patient, nursing professionals must emphasize clear language through educational processes that permit explaining about the doubts regarding the procedure and possible results; besides evaluating the knowledge of the phenomenon by the practice to facilitate the intervention and establish a scientific baseline to enhance nursing care in endoscopic services.

Therefore, with the orientation by the Merle Mishel theory, the importance of using this instrument is evidenced in the evaluation through each of the dimensions, upon detecting in detail which of them generates greater uncertainty, like the inconsistency dimension that mostly *the explanations you have been given about the exam seem confusing.* A fact that highlights the intervention by nursing professionals from which they can plan interventions in greater detail before taking endoscopic exams, which contribute to the patient and family generating coping mechanisms to adapt to the results exposed.

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