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Editorial

We launch the eighth issue of the journal with a series of interesting research articles. The first article focuses on the effects of alcohol and its relationship with mental health. This quantitative study analyzed the correlation between risk-taking and alcohol consumption, as well as the relationship between personality factors and alcohol consumption in terms of the risk of problematic drinking, seeking to determine which personality trait is the greatest predictor of consumption.

The following contribution explores the distress to which nursing students are exposed, which may constitute a risk factor predisposing to depression. To this end, a study was conducted with the participation of 900 university students. It was observed that women reported higher levels of distress and depression compared to men. Furthermore, students who worked while studying received higher incomes, less distress, and less depression than those without jobs.

The third article analyzes the psychological effects and coping strategies in Puerto Ricans affected by Hurricane Maria. A mixed, descriptive-correlational, non-experimental, and cross-sectional research design was used. The results suggest that coping strategies may increase the manifestation of anxiety and avoidance symptoms in those affected. It is concluded that the most common psychological effects in this population are post-traumatic stress, anxiety, and depression.

The fourth proposal evaluated the relationship between personality traits and the transversal competencies of professors at a virtual education university. The study offers insight into the complex dynamics of virtual teaching within the context of technological progress and the lessons learned from the COVID-19 pandemic. Agreeableness and openness to experience were the dominant personality traits, while sociability and change management were the key competencies. The fifth article investigated sleep problems using the Pittsburgh Sleep Quality Index (PSQI) scale and aims to generate normative data for the interpretation of the scale. A cross-sectional, correlated study was conducted using stratified probability sampling, with a total of 1,050 participants enrolled in public universities in northern Honduras. The PSQI scale presented adequate psychometric properties, and the normative data generated could be used in decision-making regarding students' sleep health.

The following article aims to identify psychosocial risk factors for caregiver burden in caregivers of dependent individuals and disabled individuals. To do so, 2,093 caregivers of disabled individuals and/or dependent individuals were included. They answered questions about sociodemographic information and the Zarit Caregiver Burden Scale. The results show that caregiver age, gender, family structure, and dependent individual's age group were significant predictors of caregiver emotional burden as measured by the scale. The penultimate article designed and validated a prevention and care program to reduce stress and anxiety levels in employees working remotely. It was found that to maintain or improve work-related stress levels, in addition to the intervention program, it is recommended to prevent work overload and assess employees' abilities. The proposed prevention and care program, called Ataraxia, seeks to address these difficulties, with the goal of improving emotional well-being and quality of work life.

We close the current issue with an article that addresses the topic of suicide from the perspective of the meaning of life and death. The objective is to reflect on suicide attempts based on the theoretical and practical paradigms of phenomenology and the concepts of psychoanalysis, philosophy, and sociology to understand this phenomenon. It is recognized that both suicide attempts and completions generate disruption and suffering for these individuals, their families, and society, justifying the need for further studies.

Dr. Juan Luís Martín Ayala
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Analysis of Alcohol Consumption as a Specific Risk Behavior: Relationship with General Risk-Taking and Personality

Análisis del consumo de alcohol como conducta de riesgo específica: relación con la toma de riesgo general y la personalidad

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ABSTRACT

Alcohol, the most widely consumed legal drug nationwide, has commonly known harmful effects on both physical and mental health, with binge drinking being the rising consumption pattern. The aims of this quantitative study were to examine (a) the relationship between risk-taking, assessed with objective and subjective measures, and alcohol consumption, in terms of risk of problematic use, and (b) the associations between the Big Five personality traits and alcohol use, in terms of risk of problematic consumption, seeking to find which personality trait is the greatest predictor of consumption. Participants were students from the Universidad Europea del Atlántico ($n=52$) of both sexes aged between 18 and 30 years old (mean=20,67 years old, $dt=\pm 2,23$). Questionnaires AUDIT, DOSPRT-30, and an abbreviated form of NEO-PI were administered, as well as a computerized laboratory task (BART). Findings show no significant differences in alcohol consumption between male and females. Results also reveal that, regarding alcohol consumption, there is a significant positive correlation with subjectively measured risk-taking and a negative relationship with the responsibility personality trait. We have also found that subjectively measured risk-taking has a greater predictive value for alcohol use than personality traits. Identifying which variables are determinant in alcohol consumption, and discarding those that are not, will contribute to increasing the specificity of prevention campaigns as well as their effectiveness in university students.

RESUMEN

Palabras clave:

El alcohol, la droga legal más consumida a nivel nacional, tiene efectos nocivos para la salud física y mental ampliamente conocidos, siendo el consumo en atracón el patrón de consumo en auge. Los objetivos del presente estudio de naturaleza cuantitativa fueron analizar (a) la

consumo de alcohol, toma de riesgo, personalidad, jóvenes	<p>correlación entre la toma de riesgo, en términos objetivos y subjetivos, y el consumo de alcohol, en términos de riesgo de consumo problemático, y (b) la relación entre los factores de personalidad según el modelo de los Cinco Grandes y el consumo de alcohol, en términos de riesgo de consumo problemático, buscando analizar qué rasgo de personalidad es el mayor predictor del consumo. La muestra estuvo conformada por alumnos de la Universidad Europea del Atlántico ($n=52$) de ambos sexos de entre 18 y 30 años de edad (media= 20,67 años, $dt=\pm 2,23$). Se administraron los cuestionarios AUDIT, DOSPERT-30 y una versión abreviada del NEO-PI, así como una tarea conductual virtual (BART). Los resultados obtenidos no muestran diferencias significativas en el consumo de alcohol entre sexos. Respecto al consumo de alcohol se evidencia una correlación significativa positiva con la toma de riesgos medida subjetivamente, y una relación negativa con el factor de personalidad responsabilidad. También se encuentra que la toma de riesgo medida subjetivamente tiene mayor valor predictivo que los factores de personalidad sobre el consumo de alcohol. Conocer qué variables son determinantes en el consumo de alcohol, y descartar las que no, contribuirá a aumentar la especificidad de las campañas de prevención y su eficacia en población universitaria.</p>
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Introduction

Alcohol is the most consumed legal drug at the national level in the general population according to the Spanish Observatory on Drugs and Addictions (OEDA, 2023). The harmful physical and mental health effects of alcohol are widely known, causing approximately 3.3 million deaths per year globally and more than 200 diseases, including major noncommunicable diseases, such as liver cirrhosis, some cancers, cardiovascular diseases, and infectious diseases, such as tuberculosis and HIV (WHO, 2022). The role of alcohol consumption in intentional and unintentional injuries, including those due to traffic accidents, violence and suicide, should not be overlooked (WHO, 2022). The WHO describes alcohol as a psychoactive substance with properties that can lead to dependence, implying that its consumption is associated with an increased risk of developing mental and behavioral disorders (2022). Alcohol intake usually precedes the consumption of other substances, in addition to facilitating polyconsumption (Díaz-Castela et al., 2016). Even so, more harmful are the social and health repercussions derived from legal substances (alcohol and tobacco) than from illicit substances (Urday-Concha et al., 2019).

According to the latest edition of World Health Statistics, exposure to alcohol consumption is significant, with the highest consumption rates found in the European region (WHO, 2023). The prevalence of consumption at the national level is highest in the 15-34 age group (78.9% have consumed alcohol in the last year), among which a risky drinking pattern stands out (OEDA, 2023), defined as "a pattern of alcohol consumption that increases the likelihood of negative consequences for the drinker or for his or her environment" (OEDA, 2021, p. 87). This includes weekly or daily consumption, acute alcohol intoxication, behaviors that can result in dependence or associated problems, and *binge drinking*, which is the consumption pattern on the rise (OEDA, 2021), with a prevalence of 15.4% in the last 30 days in the general population, being twice as high in men as in women at the national level (OEDA, 2023).

Concern about problematic alcohol consumption is nothing new. At the national level, there are several awareness campaigns, for example, the one proposed by the Ministry of Health "Don't miss anything" (2022). Common to these campaigns is their focus on raising awareness of the adverse effects of alcohol consumption. However, studies show that heavy use of this substance is becoming more common (Rodríguez et al., 2019) and in a more risky manner (OEDA, 2023).

With the above, it is evident that alcohol consumption among young people is on the rise; however, the factors that motivate it have not been fully elucidated. Looking at the underlying reasons for consumption can help to better understand it, allowing more effective action to be taken to reduce it.

The consumption of this substance is higher in the university population (Delgado-Lobete et al., 2020; Díaz-Castela et al., 2016). However, different studies assure that students are aware of the risks and harmful effects associated with its consumption (Alcedo et al., 2014; Angulo et al., 2019; Díaz-Castela et al., 2016), so ignorance is not contemplated as a motivating factor. Knowing this, situational factors can be considered on the one hand, and, on the other, relatively stable traits in the individual that are motivating alcohol consumption.

Regarding situational factors, it seems to be clear that the level of economic development, cultural traditions, social norms, accessibility of alcohol and the implementation and monitoring of policies related to its consumption are the major motivators of consumption (WHO, 2022). Many authors agree that consumption is

socially motivated, some even describing it as a social drug (Díaz-Castela et al., 2016; Urday-Concha et al., 2019). Inglés et al. (2007) state that both alcohol and tobacco are consumed nationally because of their availability and social acceptance. Along these lines, Barned et al. (2021) emphasize the importance of the context, which influences the social acceptance of consumption in the specific situation. It should be taken into account that in the university stage there are a series of life changes (e.g., leaving home, socioeconomic difficulties, independence and the beginning of adulthood) that may involve alterations in decision-making and have a direct impact on the consumption of substances such as alcohol (Angulo et al., 2019; Garrido and Lorenzo, 2016).

As far as the individual is concerned, factors such as personality and *risk-taking* have been studied. However, the findings in the literature are diverse and, according to WHO (2022), within the individual factors, it cannot yet be affirmed that there is a determining risk factor. This is why the present study focuses on individual motives for consumption, specifically risk-taking and personality factors, due to the lack of consensus.

Risk taking is a heterogeneous and complex construct to assess (Smith and Benning, 2021). However, several authors have made efforts to try to define it. Thus, risk taking is used to define behaviors that entail a perceived uncertainty about their outcomes, and thus about their potential benefits or costs to the physical, economic or psychosocial well-being of oneself and others (Trimpop, 1994). This uncertainty affects both the probability of occurrence of an outcome ("it may happen") and the probability of the value of that outcome ("it may be worthless") (Trimpop, 1994).

Several theories have emerged around this concept in order to explain it. Kahneman and Tversky (1979) developed the Prospect Theory, which defines risk taking as context-dependent, understanding that people perceive the results of an action as gains or losses depending on a reference point, which usually corresponds to the current state or position, and which can be affected by the expectations of the decision maker. Later Sitkin and Pablo (1992), based on results that contradict this theory, develop a model that explains risk taking through risk perception, understood as the evaluation of the risk inherent in the situation and influenced by the contextualization of the problem and social influence, and risk propensity, defined as the individual's tendency to take risks. Findings from recent studies show that there is a combination of situational and personal influences on risk-taking, with individuals being able to avoid risk in some areas and seek risk in others, while having a general disposition that is more or less risk-seeking (Nicholson et al., 2006).

One construct that emerges and appears clearly related to risk taking is risk perception. However, although the relationship between the two seems to be evident (some authors even use them interchangeably), the nature and direction of this relationship is not entirely clear (Mills et al., 2008; Reyna and Farley, 2006), partly because it depends on how these constructs are defined and measured.

Of particular interest in this regard is substance use, which is considered a risk behavior related to the health domain. Regarding alcohol consumption, the perception of risk is lower compared to other drugs (licit and illicit), although it is increasing (OEADA, 2023). It is striking that although the perception of risk is increasing, the statistics on its consumption are also increasing.

When investigating other factors that affect alcohol consumption, personality emerges as the strongest independent competitor among different variables with effects on this risk behavior (Nicholson et al., 2006).

Personality traits are stable patterns of perceiving, thinking, and relating to others (DSM-IV-TR, American Psychiatric Association, 2000; González et al., 2016; Hakulinen and Jokela, 2019). Numerous models have been proposed over the years in relation to these traits.

One of the most widely accepted theories of personality traits is the Big Five model proposed by Costa and McCrae (1994), which proposes 5 personality factors (extraversion, responsibility, openness to experience, agreeableness and neuroticism). Numerous studies have been conducted on this model linking these traits to risk behaviors. In the study by Nicholson et al. (2006) found, on the one hand, a positive correlation between the traits of extraversion, openness to experience and general risk-taking scores and, on the other hand, a negative correlation with the traits of neuroticism, agreeableness and responsibility.

Apart from general risk, many researchers focus on specific domains of risk behaviors, such as the health domain, where alcohol consumption is found. Findings about this relationship are mixed. Regarding neuroticism, it seems that this trait lacks utility in predicting risk behaviors in general (Booth-Kewley and Vickers, 1994; Hampson et al., 2006; Markey et al., 2003; Mirnics et al., 2021), although there are authors who have found a positive relationship with alcohol consumption in young adults (Dash et al., 2019; Hicks et al., 2011), and others who consider it a predictor of these behaviors (Anderson et al., 2005). Regarding extraversion, some authors do not find significant relationships (Caspi et al., 1997 cited in Hong and Paunonen 2009), but most of the literature points to a significant positive correlation (Anderson et al., 2005; Hampson et al., 2006; Hong and Paunonen 2009; Kuntsche et al., 2004; Lauriola and Weller, 2018; Lui et al., 2022) being considered a risk factor for problem drinking (English et al., 2007). Along these lines, with respect to openness to experience, positive relationships have been found with excessive alcohol intake (Booth-Kewley and Vickers, 1994; Lauriola and Weller, 2018; Trull and Sher, 1994). In relation to responsibility, negative correlations are found with alcohol consumption (Bogg and Roberts, 2004; Dash et al., 2019; Hong and Paunonen, 2009; Lui et al., 2022). Finally, about the kindness trait, a negative relationship with alcohol consumption is found (Dash et al., 2019; Hong and Paunonen 2009; Lui et al., 2022).

In sum, we conclude that high scores on the traits of extraversion and openness to experience, and low scores on the traits of responsibility, neuroticism and agreeableness lead to a higher propensity for risky behaviors, more specifically, alcohol consumption. However, the findings are mixed and it is important to continue research to clarify these relationships.

Gender, age, education or nationality should be taken into account as influential factors in alcohol consumption. In general, young men engage in more risky behaviors, over women or older men (Frey et al., 2017; Nicholson et al., 2006). The pattern is repeated with respect to alcohol consumption, men are more likely to consume (OEDA, 2023; Rodríguez et al., 2019), while women are more aware of policies against consumption (OEDA, 2023) and the problems it generates at the individual and social level (Uribe et al., 2011). This is why some authors recommend intervention on drug use differentiated between men and women (Inglés et al., 2007; Uribe et al., 2011). In addition, it has been seen that university students are more likely to consume compared to those with no studies, followed by high school or vocational training students (Rodríguez et al., 2019). Young people of Spanish nationality are more likely to consume, above other nationalities (Rodríguez et al., 2019). Knowing the reasons for these differences will help to create prevention programs more specific to the targeted population.

The aim of the present study is to assess the extent to which general risk taking, in objective and subjective terms, and personality, according to the Big Five model, predict alcohol consumption, in terms of risk of problem drinking, in a university population. Thus, the general hypothesis is that risk taking, both objective and subjective, will correlate positively with alcohol consumption; and there is a positive correlation between the traits of extraversion and openness to experience, and a negative correlation between the traits of responsibility, neuroticism and agreeableness with alcohol consumption.

More specifically, the specific objectives would be as follows: (a) to assess the correlation between risk taking, in objective and subjective terms, and alcohol consumption, in terms of risk of problem drinking, and (b) to analyze the relationship between personality factors according to the Big Five model and alcohol consumption, in terms of risk of problem drinking, seeking to analyze which personality trait is the strongest predictor of consumption.

The specific hypotheses would be: (a) we will find a positive correlation between alcohol consumption and behaviorally measured risk taking, as well as with subjectively measured risk taking, and (b) we will evidence a negative correlation between alcohol consumption and the factors of responsibility, agreeableness and neuroticism, versus a positive correlation with the factors of extraversion and openness to experience, seeing that extraversion is the strongest predictor of alcohol consumption.

Method

Participants

The present study consisted of two phases. In the first phase, a survey was created to collect data related to the inclusion and exclusion criteria, in order to make a first screening of subjects. Once the actual sample was obtained, the second phase consisted of the evaluation tests.

In the first phase, 207 participants completed the questionnaire on inclusion and exclusion criteria. Of these, 33 were excluded because they did not meet the criteria, and another 3 did not provide contact information. In total, 116 participants completed the second phase. Of these, 53 performed the behavioral task, discarding one subject due to technical failures during the test. The final sample consisted of $n=52$ individuals of both sexes (36 females and 16 males) between 18 and 30 years of age (mean=20.67 years, $dt=\pm 2.23$). A non-probabilistic convenience sample was chosen, based on the voluntary participation of the students, due to the economic and technical restrictions of the study.

The inclusion criteria were to be between 18 and 34 years of age, to be studying a bachelor's, master's or doctoral degree at the Universidad Europea del Atlántico, to speak and understand Spanish, and to be able to give written informed consent. Exclusion criteria were occasional, weekly or daily use of cannabis or other illicit substances in relation to habitual use. This criterion is established because, first, the presence of multiple substance use may make it difficult to identify the specific effects of alcohol on risk taking and, second, there are studies that highlight that the use of illicit substances or cannabis may trigger persistent effects on participants' physical and mental health, which may subsequently influence risk taking in a different way than alcohol use, complicating the interpretation of the results (Butler and Montgomery, 2004; Gilman et al., 2015; Gowin et al., 2017).

Instruments

To measure our first variable, alcohol consumption in terms of risk of problem drinking, we used the Spanish version of the *Alcohol Use Disorders Identification Test*

(AUDIT) (Saunders et al., 1993) adapted by Rubio et al. (1998). It is a 10-item self-administered scale. It is composed of three factors, being consumption itself (in terms of quantity and frequency), dependence and associated problems, structured in 3, 4 and 3 items respectively. The response form is Likert-type, from 0 to 4, and a direct total score is obtained between 0 and 40. The internal consistency of the AUDIT in our sample is 0.71, making it a good measurement instrument for our purposes.

For the measurement of the second variable, risk taking, a behavioral measure and a subjective measure (self-report of risk taking) were used. The *Ballon Analogue Risk Task* (BART) (Lejuez et al., 2002) was used for behavioral risk assessment through the e-Prime program. This virtual behavioral task consists of participants sequentially inflating balloons until they consider that they are about to explode, with the probability of explosion being completely random (Lejuez et al., 2002). Each time they inflate the balloon they get 5 points, but if the balloon bursts they do not receive the points accumulated in that trial (Lejuez et al., 2002). The BART has demonstrated good ecological validity and acceptable test-retest reliability ($r = 0.77, p < 0.001$) (White et al., 2008). For the subjective assessment of risk-taking, the Spanish version of the *Domain-Specific Risk-Taking Scale* (DOSPERT-30) (Blais and Weber, 2006) was used, adapted to Spanish by Fernández et al. (2017). It is a self-administered questionnaire composed of three subscales: propensity to risk behaviors, risk perception and expected benefits (Fernandez et al., 2017). Each subscale consists of the same 30 items that are structured into five domains: ethical, financial, health/safety, recreational and social (Fernandez et al., 2017). What changes with respect to each subscale is the form of response. Taking into account the objectives of the present study, use is made of the propensity to risk behaviors subscale whose response style is Likert-type, from 1 (Highly improbable) to 7 (Highly probable) (Fernández et al., 2017). In our sample, a total internal consistency of 0.78 was observed.

Finally, to measure our third variable, personality traits, we used the revised and abbreviated version of the NEO-PI personality inventory known as NEO-FFI (Costa and McCrae, 1994) adapted to Spanish by Cordero et al. (1999). This scale consists of 60 items that measure the personality factors of the Big Five model (Costa and McCrae, 1994). The factors are extraversion, openness to experience, responsibility, agreeableness and neuroticism, and the internal consistencies obtained in our sample were 0.86, 0.77, 0.86, 0.71 and 0.82 respectively. It is answered with a Likert scale ranging from A (Strongly disagree) to E (Strongly agree) (Cordero et al., 1999).

Procedure

We worked with a design that, according to the classification of Montero and León (2007), corresponds to a correlational study of populations through cross-sectional surveys.

Participants were recruited through messages on social networks and institutional email, in addition to informing about the study in person as a way to encourage participation. They were then provided with a *link* through which they could access a survey in which they could complete the preliminary data that allowed us to discard participants according to the inclusion and exclusion criteria.

The test battery was applied to each participant individually and computerized, with the exception of the BART test, which was carried out in the Psychology laboratory of the Universidad Europea del Atlántico. For the administration of AUDIT, DOSPERT-30 and NEO-FFI, the Google Forms tool was used, and for BART, the E-Prime 3.0 software was used, duly installed on the laboratory computer. The total evaluation time was approximately 40 minutes.

The DOSPERT-30 score used is the result of the sum of the 5 domains, known as the overall risk-taking index. For the implementation of BART, there are no firm methodological guidelines that regulate variables such as the number of trials to be performed (White et al., 2008). Following the method of several studies, 30 trials are included in the interest of reducing participant fatigue (Fernie et al., 2010; Lejuez et al., 2002; MacPherson et al., 2010; Skeel et al., 2008). In accordance with the recommendations of Lejuez et al. (2002), our outcome variable is the average number of pulses in balloons that did not burst, known as the adjusted number of *pumps*.

The data collected were analyzed using the appropriate statistical tools to evaluate differences between groups, correlations and predictive models, as detailed in the following section.

The protocol of our study has been approved by the ethical committee of the Universidad Europea del Atlántico. Likewise, written informed consent was obtained from each of the participants, stating that they were informed of the purpose of the study and understood their rights to participate.

Results

SPSS version 15 for Windows was used for data analysis. These were divided into three phases: sex differences in alcohol consumption, correlation analysis between all variables, and a hierarchical regression to find out which variable has the highest predictive value for alcohol consumption. Table 1 shows the means (\bar{x}) and standard deviations (dt) for all variables.

In the first phase to analyze sex differences in alcohol consumption, equality of variances between males and females in alcohol consumption is assumed because Levene's test has a significance of 0.473 ($p > 0.05$). The t-student test shows that there are no significant differences in sex and alcohol consumption, with a significance is 0.165, so $p > 0.05$.

In the second phase, the bivariate correlation coefficients between all the variables were calculated using Spearman's Rho correlation coefficient (see Table 1). The significance level was set at 5%, so p -values less than 0.05 were considered statistically significant (the same for all subsequent analyses).

On the one hand, significant correlations were found between alcohol consumption (AUDIT) and subjectively measured risk taking (DOSPERT-30), suggesting that the higher the subject's alcohol consumption, the higher the subject reports a greater propensity to take risks in general. There was also a significant negative relationship between alcohol consumption and the responsibility personality factor (NEO-FFI), which leads to the conclusion that the higher the responsibility score, the lower the rate of problem drinking. Along these lines, the responsibility factor has also been correlated with the subjective measure of risk-taking (DOSPERT-30), this relationship being negative, thus seeing that the more responsible the subject is, the less risk-taking tendency he/she reports in general. It is worth mentioning the existence of marginally significant correlations between the extraversion factor (NEO-FFI) and both risk-taking measures (BART and DOSPERT-30). Both are positive, so the greater the extraversion, the greater the risk-taking both objectively and subjectively.

In the third phase, a hierarchical regression model was created to analyze which variable has the highest predictive value for alcohol consumption in two steps (see Table 2). Due to the non-significant relationships found between alcohol consumption and personality factors, with the exception of the responsibility factor, and between the

objective measure of risk taking, these are excluded from our regression model. The two remaining factors, responsibility and subjective risk-taking, are independent of each other, so we can affirm that there is no multicollinearity. Thus, it is obtained that, in the first step, the responsibility factor predicts 15% of alcohol consumption ($p < 0.05$), being the direction of this relationship negative. In the second step, when adding the subjective measure of risk-taking, responsibility loses its significance, thus understanding that risk-taking measured subjectively is the factor that most predicts alcohol consumption. The model with these two factors predicts 25% of alcohol consumption.

Table 1.

Mean and standard deviation of all variables, and bivariate correlation coefficients (Spearman's ρ) between them.

Variable	\bar{x}	DT	1	2	3	4	5	6	7
1. AUDIT	5.42	4.14	-						
2. Neuro.	26.10	7.87	-0.04	-					
3. Extra.	28.77	7.66	0.01	-0.38**	-				
4. Aper.	29.62	7.18	-0.16	0.30*	-0.19	-			
5. Amab.	27.88	5.77	-0.19	0.02	0.16	0.01	-		
6. Respo.	30.73	7.47	-0.38**	-0.06	-0.18	0.14	0.03	-	
7. BART	28.29	14.77	0.09	-0.17	0.23	0.05	-0.17	-0.01	-
8. DOSP.	99.31	17.75	0.43**	-0.08	0.23	-0.11	-0.12	-0.36**	0.13

Note. Neuro.: Neuroticism NEO-FFI. Extra: NEO-FFI Extraversion. Aper: NEO-FFI opening. Amab: NEO-FFI Friendliness. Respo: NEO-FFI Responsibility. DOSP.: DOSPERT-30.

* $p < .05$, ** $p < .01$.

Table 2.

Hierarchical multiple regression to predict alcohol consumption.

	B	ETB	β	ΔR^2
Step 1- Personality				0.15
Respo	-0.21	0.07	-0.38*	
Step 2- Risk taking				0.10
Respo	-0.14	0.07	-0.25	
DOSP	0.08	0.03	0.35*	

Note. $R^2 = 0.25$ Respo: Responsibility. DOSP.: DOSPERT-30.

* $p < .05$.

Discussion

In the present study, a linear correlational research was carried out to assess the extent to which risk taking, in objective and subjective terms, and personality, according to the Big Five model, predict alcohol consumption, in terms of risk of problem drinking,

in a university population. The general hypothesis is that risk taking, both objective and subjective, will correlate positively with alcohol consumption; and that the factors of extraversion and openness to experience will correlate positively, and the factors of responsibility, neuroticism and agreeableness will correlate negatively with consumption.

What was obtained in our study seems to indicate that there are no differences in alcohol consumption between men and women, which contradicts the results of other studies that advocate that it is men who drink more (Rodriguez et al., 2019). Considering that the internal consistency of the AUDIT was acceptable, we ruled out that this result was due to inconsistencies in the measurement. Thus, a possible explanation for this finding is that our sample was not balanced in terms of sex (36 women and 16 men), in addition to having a small sample size.

In view of the results, our first hypothesis is partially fulfilled, obtaining a significant positive correlation between alcohol consumption and subjective risk taking, but without appreciating a considerable relationship with objective risk taking. That is, a higher self-reported propensity for risk-taking does relate to higher alcohol consumption, whereas behavioral performance on a risk-taking task does not. This apparent disconnect between objective and subjective risk taking can be understood by the principle of directional fractionation, which explains the independence of psychological and physiological systems, where physiological, subjective and behavioral outcomes are independent and therefore do not necessarily have to coincide. However, there are authors who argue that the objective measure of risk taking used (BART) is not a good indicator of overall risk due to its low ecological validity, a limitation of many behavioral tasks (such as the *Iowa Gambling Task*, *Game of Dice Task* or the *Cambridge Gambling Task*, among others) because of their limited ability to reflect real-life situations. Despite finding literature that argues that the BART has acceptable ecological validity (White et al., 2008), perhaps this aspect should be re-evaluated.

The second hypothesis relating personality and alcohol consumption is partially accepted. In this case, only responsibility has been correlated, in a positive sense, with alcohol consumption, something already observed by other authors in their studies (Bogg and Roberts, 2004; Dash et al., 2019; Hong and Paunonen, 2009; Lui et al., 2022). It makes sense when taking into account that some of the facets of responsibility are deliberation, self-discipline and duty, characteristics of a person that will make him or her tend to stay away from alcohol consumption, even more so from binge drinking or risky consumption, due to the harmful effects it entails. The remaining 4 factors have not correlated with alcohol consumption, something that has been seen in previous studies (Booth-Kewley and Vickers, 1994; Hampson et al., 2006; Hong and Paunonen, 2009; Lui et al., 2022; Markey et al., 2003; Mirnics et al., 2021). This may be because other factors, such as environmental or situational factors, are moderating the relationship between personality and alcohol consumption. It could also be due to the need for a larger sample size to demonstrate significant relationships with the other personality factors, given that the studies reviewed had larger sample sizes.

In response to the general objective of finding out to what extent risk-taking and personality factors predict alcohol consumption, risk-taking measured subjectively by self-report was found to have greater predictive value than the personality factors of the Big Five model. This difference could be explained by the close relationship between risk-taking and alcohol consumption, since the latter is considered a specific risk behavior. Meanwhile, the Big Five model encompasses a broader range of personality facets and may be a more general and less specific measure for predicting alcohol consumption.

Conclusions

In terms of practical implications, it is expected that our study will provide new and useful information to focus and carry out new consumption prevention campaigns, relevant to the university population. As we have argued, alcohol consumption is caused by situational factors and individual factors that are more stable in the individual. The consumption prevention measures recommended at the European level focus on situational factors. Seeing that there is also an influence of individual factors, especially risk-taking, focusing on these could increase the reach and effectiveness of prevention programs.

Although there are some campaigns that focus on risk perception, which is closely linked to risk taking, these do not seem to be effective, probably because they are aimed at increasing knowledge of the harmful effects of substances and, as we have mentioned, lack of knowledge is not a motivating factor for alcohol consumption. Our findings suggest that attention should be placed on risk taking, specifically on the self-reported propensity of young people, to identify those who are more likely to develop a problematic drinking style and thus create more targeted prevention programs for these individuals. Implementing these preventive strategies in the university environment, along with situational-level action, could lead to a significant decrease in problem drinking rates, promoting a healthier and safer environment for students.

As for future lines of research, we believe that it is particularly relevant to replicate the present study by considering risk taking by domain, instead of a general index. As Nicholson et al. (2006), apart from there being a general risk-seeking disposition, individuals may avoid risk in some areas and seek it in others. Knowing which specific domains correlate with alcohol consumption, and which do not, will contribute to more precise action in terms of prevention measures.

Another relevant line of research would be to analyze the influence of personality in more depth. In addition to the 5 factors we have included in our study, impulsivity and sensation seeking are other personality-related constructs that have been linked to alcohol consumption, being more specific to certain behaviors. Greater knowledge of these factors would also make it possible to be more precise in prevention actions.

Regarding the limitations of the present study, due to the non-probabilistic nature of the sample, where participants were volunteers, representativeness may be limited by both homogeneity and sample size. The 92.31% of the subjects are psychology students and, despite having an initial sample of $n=207$, the experimental mortality rate was high, probably due to the lack of incentives or rewards, which may have also influenced the way they performed the study tasks. It is also noteworthy that voluntary participation implies a bias in the selection of the sample.

Another limitation of our research lies in the exclusion of participants who use illicit substances. Although this exclusion is methodologically justified, it implies leaving out a representative part of the reality of alcohol consumption among young people, as it is well known that alcohol consumption is often linked to polyconsumption.

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Conflict of interest

No conflicts of interest in the conduct of the study have been declared by the researchers.

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DISTRESS ANTECEDENT FACTOR TO THE SYMPTOMS OF MAJOR DEPRESSIVE DISORDER

Distrés factor antecedente a la sintomatología del trastorno depresivo mayor

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ABSTRACT

Keywords:

Mental health, university students, nursing.

Nursing students are exposed to psychosocial factors that generate distress, this being a risk factor that predisposes to depression. Objective: The objective of this study was to analyze the relationship between distress and symptoms of major depressive disorder in nursing students in Baja California, Mexico. Method: To do this, a research was carried out with the participation of 900 students from a public university in northern Mexico. Results: The results revealed acceptable levels of reliability, factorial validity and construct validity in the measurement instruments used: the Perceived Stress Scale (PSS-14) and the Patient Health Questionnaire (PHQ-9). It was observed that women reported higher levels of distress and depression compared to men. Furthermore, those students who worked while studying perceived a higher income, less distress and less depression than those without employment; These differences were statistically significant ($p < .05$). Discussion and conclusion: In the discussions, the study hypotheses were confirmed, including a significant positive correlation between distress and depression ($r = .5$, $p < .05$), as well as a significant negative correlation between eustress and depression ($r = -.6$, $p < .05$). Finally, it was concluded that eustress contributes to reducing distress, and that distress precedes the symptoms of major depressive disorder in the sample of nursing students ($\chi^2/df = 3.85$; RMSEA = .06; NNFI = .98, NFI = .98, CFI = .99, IFI = .99, RFI = .98).

RESUMEN

Palabras clave:

Salud mental, estudiantes universitarios, enfermería.

Los estudiantes de enfermería están expuestos a factores psicosociales que generan distrés, siendo este un factor de riesgo que predispone a la depresión. Objetivo: El objetivo de este estudio fue analizar la relación entre el distrés y los síntomas del trastorno depresivo mayor en estudiantes de enfermería en Baja California, México. Método: Para ello, se llevó a cabo una investigación con la participación de 900 estudiantes de una universidad pública en el norte de México. Resultados: Los resultados revelaron niveles aceptables de confiabilidad, validez factorial y validez de constructo en los instrumentos de medición utilizados: la Escala de Estrés Percibido (PSS-14) y el Cuestionario sobre la Salud del Paciente (PHQ-9). Se observó que las mujeres reportaron niveles más altos de distrés y depresión en comparación con los hombres. Además, aquellos estudiantes que trabajaban mientras estudiaban percibieron un mayor ingreso económico, menos distrés y menos depresión que aquellos sin empleo; estas diferencias fueron estadísticamente significativas ($p < .05$). Discusión y conclusión: En las discusiones, se confirmaron las hipótesis del estudio, incluida una correlación positiva significativa entre el distrés y la depresión ($r = .5$, $p < .05$), así como una correlación negativa significativa entre el eustrés y la depresión ($r = -.6$, $p < .05$). Finalmente, se concluyó que el eustrés contribuye a reducir el distrés, y que el distrés precede a la sintomatología del trastorno depresivo mayor en la muestra de estudiantes de enfermería ($\chi^2/df = 3.85$; RMSEA = .06; NNFI = .98, NFI = .98, CFI = .99, IFI = .99, RFI = .98).

Introduction

Stress is present everywhere, even in academic settings (Alvites-Huamaní, 2019). Nursing students who perform clinical practice and social service constitute a group vulnerable to stress due to their commitment to patient health, which demands high concentration and responsibility (Muvdi et al., 2021). By interacting directly with patients facing health difficulties, these students are exposed to suffering, hopelessness, and sometimes death; these emotional demands can become a constant source of distress (Silva et al., 2019).

However, exposure to these emotional demands does not always immediately lead to distress, as students may have personal characteristics such as balanced temperament or effective coping strategies that protect them and modulate the relationship between stressors and distress into eustress. However, when these strategies fail, the level of stress can become negative (distress), which in turn can generate discouragement and be associated with depression, especially when witnessing the suffering of patients (Ruidiaz-Gomez et al., 2020).

Stress and eustress.

Palacios and Monte de Oca (2017) explain that stress is a response to psychosocial stimuli that the individual must face, and can generate a negative (distress) or positive (eustress) reaction depending on the ability to adapt to the stimulus. Espinosa, Pernas, and Gonzalez (2018) define eustress as an optimal response that enables adequate performance in the face of environmental demands, whereas distress implies overexertion leading to consternation and impairment, often stemming from psychological maladjustment.

Psychological stress is the psychological response of a person when trying to adapt to internal or external pressures (Cruz-Carbajal, 2024). According to Gutiérrez and Amador (2016) negative psychological stress or distress is a precursor of mental disorders, affecting 50% of the university student population, generating a public health problem.

Negative Stress and Depression in Nursing Students a Public Health Problem

There are several studies that relate negative stress (distress) to depression in university students. Depression is a mental affection suffered by approximately 350 million people in the world (Bermudez, 2018, Trunce-Morales et al., 2020). However, the above, and so far the interrelationships that these psychological aspects have when pursuing a bachelor's degree in nursing are not clear, so this article analyzes distress as a public health problem that exacerbates depression in undergraduate nursing students (Muvdi et al., 2021).

Medrano-Hernández and collaborators (2017) conducted a research considered 314 nursing professionals in Mexico, they identified that negative stress correlated with symptoms of depression ($r=.573$), such correlation was statistically significant ($p<.01$). Negative stress or distress can be defined as a psychological state that disrupts the normal state of the body, causing in its wake noticeable affections in the person, its consequences have an impact on health (Chau and Villela, 2017).

Currently, stress has been considered as a precursor of the most widespread health complications globally, living in a constantly changing world that involves dealing daily with stressful conditions, which sometimes exceed one's own capacities of resistance, affecting psychological and physical health; scientific evidence has reported that stressful events precipitate psychological distress and worsen physical and mental health (De la Rosa-Gómez, 2020).

Risk factors associated with psychological stress from a distress perspective.

It is worth mentioning that perceived stress is the psychological response of a person when trying to adapt to internal or external pressures. Nursing students, when performing clinical practice and social service face stressful situations activating their emotional regulation mechanisms, other elements that should be taken into account associated with perceived stress are sociodemographic factors such as sex, age, and economic income (Muñoz-Fernández et al., 2020).

a) Sex:

Based on data provided by the American Psychological Association (APA), psychological stress is increasing year after year in both men and women, with the latter presenting more stress in relation to the opposite sex (Herrera-Covarrubias et al., 2017). In a study conducted in Warsaw Poland on 254 undergraduate nursing students, it was identified by stepwise linear regression analysis that sex is a significant predictor of the level of psychological stress or distress ($B=-3.07$; $SE=1.11$; $p=0.006$), the levels of distress in women were on average 3.07 points higher than in men (Pawlak et al., 2022).

b) Age:

Adolescence is an important stage for the presentation of distress, since according to the American Psychological Association (APA) adolescents present higher levels of negative stress compared to adults, all this related to the socioemotional and biological changes that adolescents experience, presenting greater emotional response to distress (Chiang et al., 2019).

Distress can increase susceptibility to depression especially if it begins to be experienced early in life; during adolescence and late adolescence various forms of adversity experienced by young people such as social isolation or confinement can significantly increase the occurrence of depressive symptoms (Xua et al., 2018).

In adolescence some areas of the brain are still undergoing development-related changes, making young people more vulnerable to produce alterations, with a higher intensity and more prolonged response of the adolescent hypothalamic-pituitary-adrenal axis compared to adults (Xua et al., 2018).

Kamali et al. in 2023 identified a statistically significant negative correlation ($r=-.28$; $p<.05$) between age with stress in a group of 235 Iranian nursing students, it can be interpreted that the older the age the lower the stress (Kamali et al., 2023).

c) Financial income

The relationship between socioeconomic level and health is documented in different articles, which refer that the higher the economic income, the lower the risk of health problems, on the contrary, a low socioeconomic level has a negative impact on health (Mola et al., 2019).

In the city of Salvador, Bahia, Brazil, it was identified that nursing students with low economic status present a higher level of stress in their academic training, those with monthly income equal to or less than one minimum wage, presented 64% higher level of stress, compared to students with more than one minimum wage (PR: 1.64, 95% CI: 1.64, 95%): 1.06; 1.27) (Ribeiro, 2020).

Factors Resulting from Stress

According to the Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE, 2016), the consequences of stress can be physical, as a response to the maladaptation of the organism to the stressful stimulus that can generate gastrointestinal, cardiovascular, respiratory, endocrine, dermatological disorders, as well as alterations in the immune system; and psychic consequences, producing psychological alterations, deteriorating the quality of personal relationships such as family or academic, generating sleep disorders, anxiety disorders, eating disorders, affective disorders, substance abuse and depression.

In the adolescent population, risk factors that have been found to be strong predictors of depression are stressful life events. Distress is a predictor of depressive symptoms, a risk factor that triggers depression is the presence of elevated levels of distress for a prolonged period of time (Pineda & Gonzalez, 2016).

Depression

Today, major depressive disorder (often referred to as depression) is a common mental disorder. It involves a depressed mood or loss of pleasure or interest in activities for long periods of time. Depression is distinct from the usual mood swings and feelings about day-to-

day living. It can affect all areas of life, including family, friendship and community relationships. It may be due to or cause problems at school (WHO, 2023).

Piñar et al. (2020) based on the DMS-V mentions that the main characteristic of major depressive disorder is the presence of the illness for at least two consecutive weeks together with a mood of sadness and a loss of interest and pleasure in activities previously enjoyed by the affected individual, together with at least four associated symptoms which are a significant increase or decrease in weight and appetite, insomnia or hypersomnia, fatigue, feelings of worthlessness or guilt, difficulty concentrating and recurrent thoughts of death as well as suicidal ideation, being the most serious consequence.

Risk factors associated with major depressive disorder.

The problem statement of the present research project is based on the information provided by Borja-Delgado et al. (2019), who establish that the risk factors that predispose to major depressive disorder can be classified into two groups: internal and external

It defines the internal ones as those that can cause an individual to be organically vulnerable and classifies them into neurological, temperamental and personal, such as age and gender. Likewise, they classify externalities as psychosocial factors including low economic social class (Borja-Delgado et al., 2019).

Risk factors are defined as those attributes which increase the probability of the appearance of some mental disorder in people with similar characteristics, in major depressive disorder there are multiple psychosocial factors that predispose to its appearance (González, Pineda, & Gaxiola, 2018).

In the adolescent population, risk factors that have been found to be strong predictors of depression are stressful life events and the context in which the individual develops, such as the university academic context (González et al, 2018).

For the aforementioned reasons, it is necessary to evaluate distress in undergraduate nursing students and its negative effects generated by the COVID-19 pandemic, such as depression, with a public health perspective (Sanchez, 2021).

It should be noted, that depression has been identified as a consequential factor of distress in university students (González-Olaya *et al.*, 2014). Therefore, the aim of the study is to analyze the relationship between distress and symptoms of major depressive disorder in nursing students in Baja California, Mexico.

Based on the literature review, the following study hypotheses are proposed:

H1 depression increases with distress.

H2 depression decreases with eustress.

H3 eustress increases with age.

H4 distress and depression decreases with age.

H5 the level of eustress is lower in students who only study compared to those who study and work.

H6 the level of distress is higher in students who only study compared to those who study and work.

H7 the symptomatology of depression is greater in students who only study than in those who study and work.

H8 eustress is lower in women than in men.

H9 distress is greater in women than in men.

H10 symptomatology of major depressive disorder is higher in women than in men.

Method

Design

The study is quantitative, cross-sectional, observational, and correlational correlational. The sampling strategy was by convenience.

Participants

The sample size was 900 students, the sample represents 90% of the population under study which is made up of 1000 students from a university faculty in Baja California, Mexico (Otzen and Manterola, 2017).

The source of information was primary, using the self-completion questionnaire technique. The instruments were placed on the Google Forms electronic platform from June 2020 to December 2021. The first section contains sociodemographic data (age, sex, income, marital status, whether working (in addition to studying) or only studying. The second section contains the PSS perceived stress scale (Brito *et al.*, 2010) and the Patient Health Questionnaire PHQ-9 (Arrieta *et al.*, 2017).

The Spanish version of the Perceived Stress Scale was used to assess stress. It consists of 14 items, 7 in favor of eustress (4 items; e.g., "How often have you successfully managed life's small irritating problems") and 7 in favor of distress (3 items; e.g., "How often have you felt nervous or stressed or full of tension"). The items are evaluated using a 5-grade frequency scale ranging from 1 (Never) to 5 (Very frequently: every day), corresponding to a case equal to 3 (Occasionally) in the total score.

Instrument

The perceived stress scale is an instrument used to measure psychological stress. Its items assess the degree of perceived control in unpredictable or unexpected situations. Specific questions probe the feeling of being in control (eustress) or the perception that situations are uncontrollable (distress) (Calderón-Carvajal *et al.*, 2017).

According to Brito, Nava and Juárez (2019) the Perceived Stress Scale PSS, presents adequate consistency and validity to be used in Mexican population, with a reliability level of .86, and adequate construct validity, the structural equation model presented an adequate fit considering a sample of 537 students: GFI=.91, RMSEA=.056, NFI=.97, CFI=.98, IFI=.98.

The second measurement instrument used to identify depression was the Patient Health Questionnaire (PHQ-9). The Patient Health Questionnaire (Patient Health Questionnaire or abbreviated PHQ-9) is a questionnaire that was designed to diagnose major depression (Arrieta *et al.*, 2017).

The PHQ-9 consists of 9 items (item 2; e.g., "Have you felt sad, hopeless or down"), uses a severity measure of zero to 27, with a scale of zero to three for each of its nine items, all referring to the symptoms presented by the subject to whom the test is applied within the last two weeks. The above allows you to rate the severity of depression using frequently used cut-off scores such as: none or minimal (0-4), mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20 or more).

Cassiani-Miranda et al. (2017) identified a Cronbach's Alpha coefficient value of .85 when analyzing the consistency of the depression scale (PHQ-9).

In relation to its construct validity, the fit indices of the structural equations model carried out by Matrángolo, Azzollini, and Simkin in the year 2022 were adequate, with appropriate fit indices, RMSEA= .053, CFI= .99.

Measurements.

The assessment of stress, depression and the collection of sociodemographic data was carried out during the years 2020 and 2021 when the COVID-19 pandemic was still active, through the link <https://forms.gle/6Wpvwqti9GEBKNb7A>.

Data Analysis

The database was created in Excel format and exported to SPSS software version 19 with the support of a computer science graduate, who was not familiar with the study hypothesis. In other words, the personnel who participated in the research did not plan or control the production of the phenomenon, nor its results.

To identify the reliability of the measurement instruments (PSS-14 dystrophobic and PHQ-9), the internal consistencies were analyzed using Cronbach's Alpha technique for each of the items, using an iterative process to identify those items that reduced the Cronbach's Alpha value or that did not contribute positively to increase it. To identify the factorial validity of the PSS-14 and PHQ-9 scales, an exploratory factor analysis was carried out using principal components analysis with varimax rotation, taking into account items with factor loadings above .50. In addition, the sedimentation graphs of the items that make up the measurement instruments are shown.

To analyze the normality of the study variables, the Kolmogorov-Smirnov test was used; in order to analyze the results, descriptive statistics were used, as well as measures of dispersion; considering that the data do not follow a normal distribution, to verify the difference between distress and depression, the Mann Whitney U test was applied for independent samples; for the analysis of correlation between variables, the Spearman correlation test was used.

LISREL version 8.30 software was used to test the measurement model and the structural equation model, and the Chi²/gl, RMSEA, GFI, NFI, NNFI, CFI, IFI, and RFI indices were used to analyze the good fit of the model.

Ethical Aspects

The research project was approved by the Department of Teaching and Research Support of the Universidad Autónoma de Baja California, registered under code 350/3311. The participants analyzed the document related to informed consent, voluntarily agreed to participate in the research project. The authors declare that for this research there are no potential risks for the subjects participating in the study. As for the confidentiality of the data, the identity, confidentiality and privacy of each of the participants was carefully safeguarded.

Results

Demographic characteristics of the study subjects.

As for the average age, the participants presented 24 years on average with a standard deviation 2.8, a median of 25 years and a mode of 27; the youngest participants are 17 years old and the oldest are 30 years old, 64.7% of the students indicate that they study and work, while 35.3% only study.

Reliability and validity of measurement instruments.

Table 1 shows the analysis of the Kolmogorov-Smirnov test, which indicates non-normality in each item of the scales considering the sample of 900 students. In the same table it can be observed that the reliability (Cronbach's alpha) is favorable, even eliminating each of the items in the two scales (Eustress $\alpha=.87$; Distress $\alpha=.85$; PHQ-9 $\alpha=.91$) (Moraguez, Espinosa & Morales, 2017).

To identify the factorial validity of the measurement instruments, the data were subjected to an exploratory factor analysis (EFA) considering the following statistical tests: Kaiser-Meyer-Olkin (KMO) test: Eustress=.89; Distress=.90; PHQ-9=.93 and Bartlett's sphericity statistic: Eustress [1787.179 (Df=21; p=.000)]; Distress [2169.952 (Df=21; p=.000)]; and PHQ-9 [4410.486 (Df=36; p=.000)] (Pizarro and Martinez, 2020).

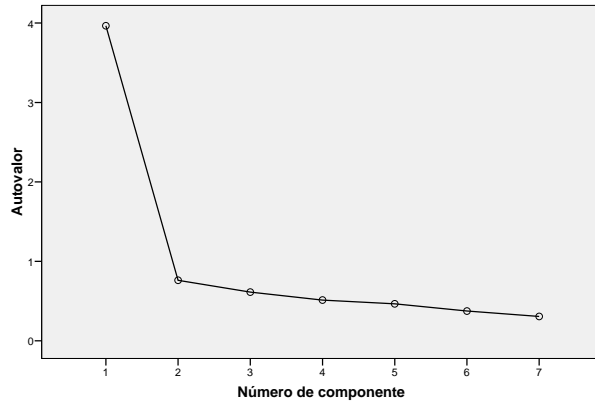
Taking into account the ordinal nature of the data recording of the Eustress and Distress scales (Likert-type responses from 1 to 5) and of the PHQ-9 scale (Likert-type responses from 0 to 3), the extraction of factors was analyzed by means of principal components with varimax rotation (Ferrando et al., 2022).

With respect to the number of factors, the result on the factor structure of the Eustress scale suggests one factor that explained 57% of the variance. The factor structure of the scale on Distress suggests a factor that explained 53% of the variance (Puentes and Diaz, 2019). The

scale result on the PHQ-9 suggests a factor that explained 58% of the variance (Ferrando et al., 2022). For each item of the three scales the factor loadings are above .50 (Table 1, Figure 1, 2 and 3).

Figure 1.

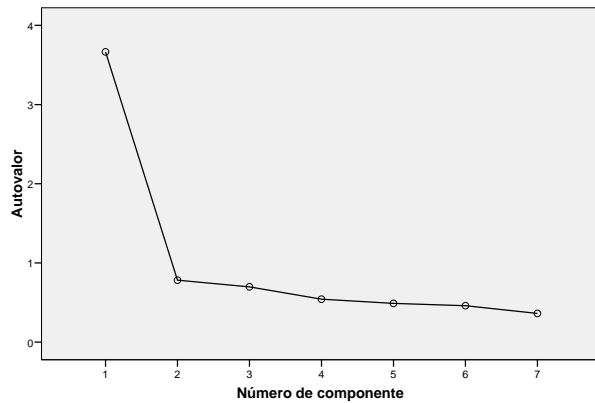
Scale sedimentation graph on Eustrés.



Source: Own elaboration

Figure 2.

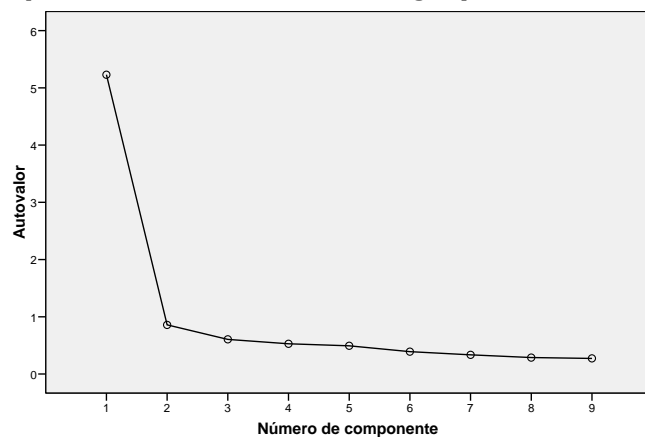
Scale sedimentation graph on Dystrés.



Source: Own elaboration

Figure 3.

Depression scale sedimentation graph.



Source: Own elaboration

Table 1.

Descriptive statistics and exploratory factor analysis exploratory factor analysis of the scales (n=900).

Item	M (DT)	K-S	α	deleting	Factor
		item		1	
1 Handling irritating problems	3.9 (.80)	7.6*	.85		.745
2 Coping effectively with change	3.9 (.79)	7.7*	.84		.806
3 Managing your personal	3.9 (.86)	7.6*	.84		.832
4 Feeling that things are going	3.8 (.82)	7.1*	.85		.779
5 Controlling the difficulties in	3.9 (.78)	8.1*	.85		.771
6 Feeling that you are in control of	3.3 (.88)	6.8*	.87		.658
7 Control the way time is	3.7 (.84)	7.6*	.86		.659
Eustress	3.8 (.62)	2.3*	.87		
1 Affected by something that has	3.2 (.97)	7.0*	.83		.719
2 Unable to control things	2.9 (1.04)	6.2*	.81		.795
3 Full of tension	3.6 (1.01)	5.9*	.82		.747
4 Not being able to cope with	3.0 (.96)	6.8*	.84		.645
5 Angry about things	3.2 (.95)	7.0*	.83		.733
6 Thinking about things you	3.8 (.94)	6.2*	.84		.608
7 Failure to overcome difficulties	2.8 (1.05)	5.8*	.81		.797
Distress	3.2 (.71)	1.6*	.85		
1. Have you felt little interest?	1.03 (.86)	8.3*	.90		.775
2. Have you ever felt sad?	1.15 (.95)	8.3*	.89		.834
3. Did you have trouble falling	1.48 (.94)	6.7*	.90		.764
4. Have you ever felt tired?	1.45 (.96)	8.0*	.89		.838
5. Have you been less hungry?	1.30 (.97)	6.4*	.90		.775
6. Have you felt that you have	.86 (.93)	7.7*	.90		.718
7. Are you easily distracted?	1.40(1.04)	7.2*	.90		.778
8. Have you ever felt slower than	1.00 (.23)	6.9*	.89		.813
9. Have you ever thought of taking	.29 (.66)	14.2*	.91		.517
Major Depressive Disorder (PHQ-	9.96 (6.5)	3.2*	.91		

Note: GAD=Generalized Anxiety Disorder. *p<.01

Source: Own elaboration

Correlation between age, eustress, distress and depression.

The association between the items of the scales showed, as expected according to the literature review, positive correlations for the items of the scale on distress with the items of the scale on depression; and negative correlations for the items of the scale on eustress with the items of the scale on depression.

It is observed that distress correlates positively with depression ($r=.691$), which means that the greater the distress perceived by the people in the study sample, the greater the depression.

Eustress is negatively correlated with depression ($r=-.514$), it is interpreted that the higher the eustress, the lower the depression.

Eustress increases with age ($r=.327$), distress decreases with age ($r=-.196$), and depression also decreases with age ($r=-.269$), these correlations are statistically significant ($p<.01$), see Table 2.

Table 2.

Association between the items of the eustress, distress and depression scales depressionn.

Item	1 of	2 of	3 of	4 of	5 of	6 of	7 of	8of	9of	PHQ	Age
1 e	-.256*	-.280*	-.179*	-.219*	-.183*	-.255*	-.255*	.277*	-.139*	-.302*	.204*
2 e	-.335*	-.308*	-.206*	-.274*	-.205*	-.272*	-.275*	.294*	-.147*	-.335*	.236*
3 e	-.380*	-.410*	-.319*	-.366*	-.300*	-.323*	-.350*	.393*	-.270*	-.451*	.302*
4 e	-.442*	-.438*	-.380*	-.397*	-.353*	-.349*	-.388*	-.404*	-.271*	-.504*	.293*
5 e	-.373*	-.341*	-.247*	-.308*	-.248*	-.325*	-.311*	-.354*	-.219*	-.389*	.265*
6 e	-.299*	-.366*	-.252*	-.286*	-.221*	-.283*	-.306*	-.299*	-.141*	-.358*	.206*
7 e	-.377*	-.322*	-.247*	-.306*	-.217*	-.285*	-.331*	-.316*	-.198*	-.375*	.209*
Eustress	-.466*	-.465*	-.346*	-.410*	-.328*	-.392*	-.423*	-.439*	-.261*	-.514*	.327*
1 d	.395*	.483*	.387*	.412*	.367*	.370*	.424*	.440*	.194*	.518*	-.059*
2 d	.451*	.542*	.368*	.441*	.376*	.476*	.463*	.454*	.264*	.560*	-.156*
3 d	.424*	.509*	.447*	.491*	.453*	.336*	.490*	.429*	.230*	.575*	-.187*
4 d	.346*	.344*	.316*	.367*	.327*	.299*	.354*	.360*	.186*	.429*	-.099*
5 d	.356*	.427*	.345*	.366*	.331*	.338*	.406*	.386*	.211*	.473*	-.124*
6 d	.273*	.303*	.315*	.288*	.289*	.207*	.334*	.272*	.082*	.356*	-.182*
7 d	.482*	.539*	.366*	.481*	.383*	.445*	.490*	.475*	.301*	.580*	-.181*
Distress	.537*	.627*	.502*	.560*	.491*	.492*	.586*	.557*	.299*	.691*	-.196*
Age	-.254*	-.237	-.253	-.197	-.184	-.173	-.239	-.161	-.133	-.269	1

Spearman's Rho, **p<.01
Source: Own elaboration

Findings between sex of participants with eustress, distress and depression.

The results of the analysis of eustress by sex were significantly different (p<.01), with a lower median eustress in women (Mdn=3.7) than in men (Mdn=4).

The results of the analysis of distress by sex were significantly different (p<.01), with a higher median of distress in women (Mdn=3.3) than in men (Mdn=3).

Also, the median level of depression is higher in women (Mdn=9) than in men (Mdn=7). The difference is statistically significant (p<.01), Table 3.

Table 3.

Difference in median distress and depression between women and men (n=900).

Sex		Eustress			
		U	Z	P	Median
Women	n=	53858	-5.19	.000**	3.7
Men	n=203				4
Sex		Distrés			
		U	Z	P	Median
Women		52633.5	-5.57	.000**	3.3
Men	n=203				3
Sex		Depression			
		U	Z	P	Median
Women		54379	-5.03	.000**	9
Men	n=203				7

Mann Whitney "U" Test, **p<.01
Source: Own elaboration

Analysis between participants' occupation with eustress, distress and depression.

The analysis of eustress by occupation was significantly different ($p<.01$), with a lower median eustress in students who only study ($Mdn=3.6$) compared to the median of students who study and work ($Mdn=3.9$).

The analysis of distress by occupation was significantly different ($p<.05$), with a higher median of distress in students who only study ($Mdn=3.3$) compared to the median of students who study and work ($Mdn=3.1$).

The median level of depression is higher in students who only study ($Mdn=10$) than in those students who study and work ($Mdn=8$). The differences are statistically significant ($p<.01$), see Table 4.

Table 4.

Difference in median distress and depression between students who study with those who study and work (n=900).

Activity		Eustress			
		U	Z	P	Median
Studying	94	673	-7.76	*	.000
Working		3.6			3.9
Activity		Distress			
		U	Z	P	Median
Studying	23	851	-1.99	*	.046
Working		3.3			3.1
Sex		Depression			
		U	Z	P	Median
Studying	42.5	797	-3.44	**	.001
Working		10			8

Mann Whitney "U" test, * $p<.05$, ** $p<.01$

Source: Own elaboration

Measurement and structural modeling between eustress, distress and depression.

The fit indices of the measurement model and of the structural model composed of eustress, distress and depression, were found to be at a good level: the normed Chi-squared χ^2/df index less than 5; the root mean squared error of approximation, RMSEA, with value less than .08; the goodness-of-fit index, GFI, greater than .80; the non-normed fit index, NFI; the normed fit index, NFI; the comparative goodness-of-fit index, CFI; the incremental fit index, IFI; and the relative fit index, RFI, with values greater than .90 (Table 5).

Table 5.

Indices for the measurement model and the structural model between the PSS-14 and the PHQ-9 (n=414).

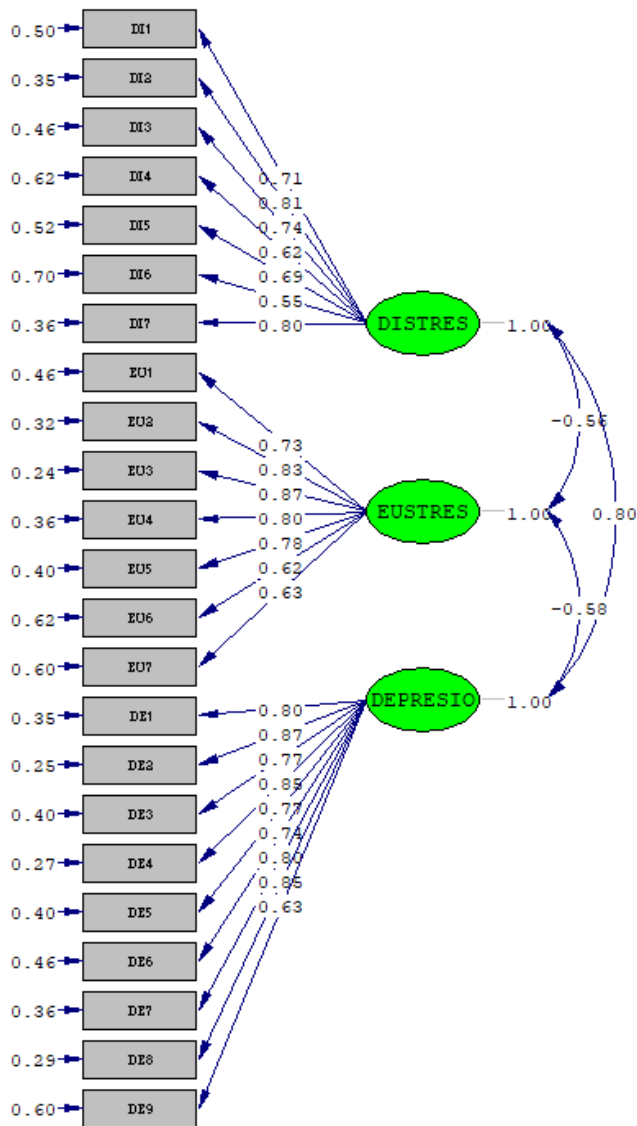
Model	χ^2	gl	P	χ^2/df	RMSEA	GFI	NNFI	NFI	IFC	IFI	RFI
Measure	832.08	227	.000	3.67	.06	.85	.99	.98	.99	.99	.99
Structural	877.21	228	.000	3.85	.06	.85	.98	.98	.99	.99	.98

Source: Own elaboration

Figure 4 shows the measurement model of the confirmatory factor analysis of the three study variables, in which an adequate construct validity of the measurement instruments is verified.

Figure 4.

Measurement model of the study variables: eustress, distress and depression.

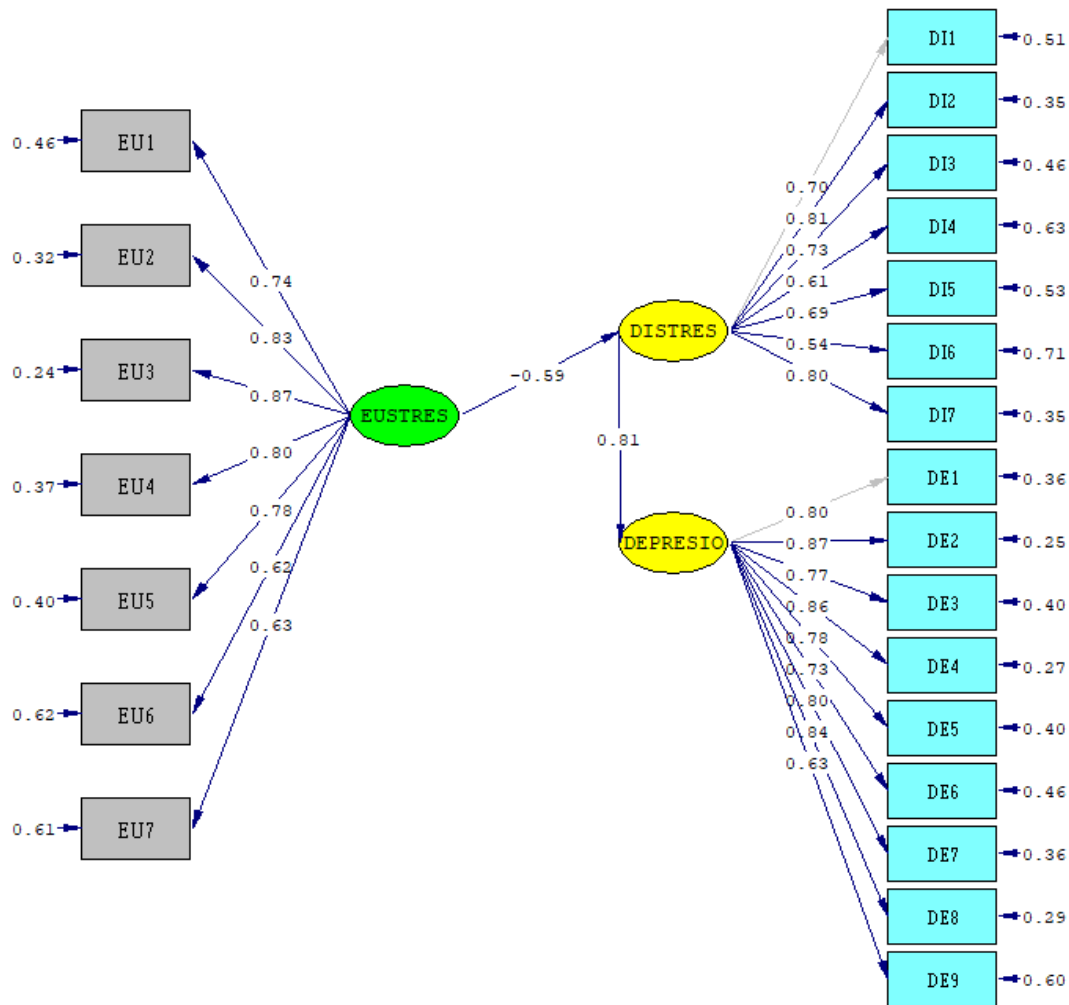


Source: Own elaboration

Figure 5 shows the structural model composed of eustress, distress and depression, it is assumed that a person with a high level of eustress will score low in distress ($r=-.59$); while a person with a high level of distress will score high in depressive symptoms ($r=.81$).

Figure 5.

Structural equation model of the variables: eustress, distress and depression.



Source: Own elaboration

Discussion and Conclusions

The aim of the study was to analyze the relationship between distress and symptoms of major depressive disorder in nursing students in Baja California, Mexico. To meet the objective, we first identified the psychometric quality of the measurement instruments to be used in the Mexican population, specifically in university-level nursing students. The instrument to measure Psychological Stress presented adequate reliability (Cronbach's alpha Eustress=.87; Distress=.85), a result similar to that identified by Brito and Collaborators in 2019 in Mexico (Cronbach's alpha=.86).

The Patient Health Questionnaire (PHQ-9), also presented adequate reliability (Cronbach's alpha=.91), a result equivalent to that of Cassiani-Miranda et al. in 2017 in Colombia (Cronbach's alpha=.86).

The results of the present research project showed evidence of the correlation between negative stress and the symptomatology of Major Depressive Disorder in nursing students; such evidence is still scarce in Mexico, the present research project aimed to contribute to such empirical evidence.

A previous antecedent in the Country of Argentina was that of Medrano-Hernández and collaborators in 2017, they indicated that negative stress correlated with symptoms of depression ($r=.573$), said correlation was positive and statistically significant ($p<.01$), as was the correlation identified in the present study ($r=.691$; $p<.01$).

A relevant fact is that women in the present research project perceived more distress ($Md=3.3$) than men ($Md=3.0$), this difference was statistically significant ($p<.01$), this result was similar to that of Pawlak et al. in Warsaw, Poland, where it was identified by stepwise linear regression analysis that sex was a significant predictor of the level of psychological stress or distress ($p<.01$), levels of distress in women were on average 3.07 points higher than in men (Pawlak et al., 2022).

Age was another risk factor for distress, a statistically significant negative correlation ($r=-.234$; $p<.01$) was identified in the sample of nursing students, a result similar to that found by Kamali et al. 2023 ($r=-.28$; $p<.05$) in 235 Iranian nursing students (Kamali et al., 2023).

A third sociodemographic factor that was identified as associated with distress was economic income, nursing students who worked while studying perceived less distress than students who did not work ($r=.234$, $p<.01$), in Brazil, in a group of 353 nursing students it was identified that students with lower monthly income perceived more distress, compared to students with higher income ($p<.01$).

The present research project showed evidence of the relationship between eustress with distress, with the symptomatology of Major Depressive Disorder and with sociodemographic factors of nursing students (sex, age and economic level when studying and working); such evidence is still scarce in Mexico, the present research project aimed to contribute to such empirical evidence. The statistical analysis of the aforementioned variables is recorded.

The findings found coincide with those presented by the authors consulted in the research process, with the peculiarities and specifications found in the selected sample.

In conclusion, the results of this study suggest that the study hypotheses were accepted:

H1 depression increases with distress;

H2 depression decreases with eustress;

H3 eustress increases with age;

H4 distress and depression decreases with age among nursing students;

H5 the level of eustress is lower in students who only study compared to those who study and work;

H6 the level of distress is higher in students who only study compared to those who study and work;

H7 the symptomatology of depression is greater in students who only study than in those who study and work;

H8 eustress is lower in women than in men;

H9 distress is greater in women than in men;

H10 symptomatology of major depressive disorder is higher in women than in men;

Considering the above, the following guidelines are proposed to the academic institution of the students that made up our study population:

- To provide mental health promotion services directed from a gender perspective, paying greater attention to younger female students with fewer economic resources.
- Promote intersectoral coordination for the strengthening of mental health and psychosocial support for nursing students.
- Continue with periodic measurements of eustress, distress and depression.
- Apply availability and accessibility surveys to mental health support systems and referral and counter-referral systems.
- Make school decisions that provide ongoing monitoring of students' mental well-being.

One of the main barriers to identifying cases of depression is the stigma surrounding mental illness, so the time elapsed between the first depressive event and seeking care is critical (Cerecero-García et al., 2020). The age of college students is the period where several mental health problems begin or become evident, so strategies of three types should be articulated:

Universal, aimed at the entire population; Selective, aimed at vulnerable groups or those with a family history of mental health problems; Indicated, for people with early signs of suicidal risk and discharged from a psychiatric institution (Rivera-Rivera *et al.*, 2020).

It is necessary to design guidelines under an initial diagnosis to address mental health problems in nursing students, for which there must be a sufficient budget, in addition to investing in campaigns to reduce prejudices and biases around the evaluation of mental health in students and the search for psychological support. Faculty who are on the front line of mental health care for students should be trained to diagnose and refer to medical personnel for prompt attention (PAHO, 2017).

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Analysis of the psychological effects and coping strategies in puerto ricans affected by hurricane maria

Análisis de los efectos psicológicos y estrategias de afrontamiento en puertorriqueños damnificados por el Huracán María

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ABSTRACT

Keywords:

Hurricane Maria, stress, anxiety, depression, damaged

Hurricane María severely impacted Puerto Rico, causing devastation to the population and resulting in significant human and material losses, leaving many families homeless. This research aimed to analyze the psychological effects and coping strategies of Puerto Ricans affected by this natural disaster. Method: A mixed-method, descriptive-correlational, non-experimental, and cross-sectional research design was used. Data were collected through the Post-Traumatic Stress Disorder (PTSD) Symptom Severity Scale, the Complementary Anxiety and Coping Strategies Scale for Risk Situations, and semi-structured interviews. The sample consisted of 385 participants, both men and women, aged between 16 and 65 years. Results: Pearson's correlation analysis revealed that the coping variable was positively and significantly correlated with stress symptoms ($r = 0.100$; $p < 0.049$), somatic manifestation ($r = 0.173$; $p < 0.001$), and the avoidance dimension of PTSD ($r = 0.193$; $p < 0.001$). These results suggest that coping strategies may be associated with an increase in anxiety and somatic manifestations. Discussion: The results indicate that coping strategies may increase the manifestation of anxiety and avoidance symptoms in the affected individuals. It is concluded that the most frequent psychological effects in this population are post-traumatic stress, anxiety, and depression. Therefore, it is essential to implement a comprehensive approach to psychological care, using appropriate and timely therapeutic strategies to address these conditions in those affected by Hurricane María.

RESUMEN

Palabras clave:

Huracán María, estrés, ansiedad, depresión, damnificados

El huracán María impactó severamente a Puerto Rico, causando devastación en la población y generando pérdidas humanas y materiales significativas, lo que dejó a muchas familias sin hogar. Esta investigación se propuso analizar los efectos psicológicos y las estrategias de afrontamiento en puertorriqueños damnificados por este desastre

natural. Método: Se utilizó un diseño de investigación mixto, descriptivo-correlacional, no experimental y transversal. La información se recopiló mediante la Escala de gravedad de síntomas de Estrés Post Traumático (TEPT), la Escala Complementaria de Ansiedad y Estrategias de afrontamiento frente a una situación de riesgo, así como entrevistas semiestructuradas. La muestra estuvo compuesta por 385 participantes, tanto hombres como mujeres, con edades entre 16 y 65 años. Resultados: El análisis de correlación de Pearson reveló que la variable de afrontamiento se relacionó positivamente y de manera significativa con los síntomas de estrés ($r = 0,100$; $p < 0.049$), la manifestación somática ($r = 0,173$; $p < 0.001$) y la dimensión de evitación del TEPT ($r = 0,193$; $p < 0.001$). Estos resultados sugieren que las estrategias de afrontamiento pueden estar asociadas con un aumento de la ansiedad y las manifestaciones somáticas. Discusión: Los resultados indican que las estrategias de afrontamiento pueden incrementar la manifestación de síntomas de ansiedad y evitación en los damnificados. Se concluye que los efectos psicológicos más frecuentes en esta población son el estrés postraumático, la ansiedad y la depresión. Por lo tanto, es esencial implementar un enfoque integral en la atención psicológica, utilizando estrategias terapéuticas adecuadas y oportunas para abordar estas condiciones en los afectados por el huracán María.

Introduction

On September 20, 2017, Hurricane Maria hit Puerto Rico, one of the natural phenomena that has had the greatest impact in the island's history. Hurricane Maria passed through the entire island, that is, from north to south. With a trajectory that started in the southeastern region of the country, traveling through the central area (where the poverty corridor is mainly located), and exiting through the northwest (Segarra, 2018). This weather event had a severe effect on the social, economic and health aspects of the country. Puerto Rico faced human losses, losses of basic elements such as electric power, drinking water and communication (internet, telephones, etc.), food and gasoline shortages, absence of medical services, loss of homes and material goods among other aspects (Muñoz, 2018). Also, the situation turned out to be much more complex due to the low effectiveness of the state for the management of this phenomenon (Cordero, 2018), and the duration time of the consequences of the event (e.g. there are sectors that eight months after the event did not have electric power).

Hurricane María entered through the southeast region, where there is a strip of municipalities with high levels of unemployment and poverty, and moved up through the central area, where the island's most marked poverty corridor is located. As a reference, according to newspaper accounts of the hurricane's passage, 22 municipalities are mentioned where the eye of the hurricane passed through and, therefore, where it hit with the greatest fury. Of these 22 municipalities, 18 present poverty levels above the average in Puerto Rico, and in 12 of them more than half of the population reports income below the poverty line (Segarra Alméstica, 2018). This phenomenon caused serious socioeconomic consequences in Puerto Rico, including a significant increase in unemployment, as many companies had to reduce their staff due to the damage caused by the hurricane, and a massive migration to the United States, causing a lack of labor, as many highly trained professionals and businessmen left the island in search of better opportunities on the mainland, which further hindered Puerto Rico's economic recovery. These consequences also contributed to an increase in the level of poverty on the island.

The historical background of Puerto Rico's vulnerability to hurricanes, disaster prevention and recovery plans and programs, the impact of Hurricane María on the communities, the psychological effects or after-effects on the affected population, the measures implemented after the event, the humanitarian aid provided by government agencies and other national and international organizations, the main coping strategies of Puerto Ricans in the face of this catastrophe, as well as theoretical foundations, models and theories that explain the appearance of psychological disorders following the experience of this hurricane will be discussed throughout this paper.

Different psychological manifestations were identified in a population of Puerto Rican victims of different gender, age, purchasing power, and place where the hurricane hit; and thus, the situations experienced before, during and after the hurricane were compiled. The coping strategies implemented in the face of this extreme risk were also analyzed.

During the first moments or in the days following the disaster, fear and anguish predominate. In the months that follow, both survivors and rescue personnel experience feelings of sadness, irritability and frustration. Grief processes develop that disrupt the performance of those affected. In the long term, months or years after the disaster, most of the population returns to its previous functional level. However, some people maintain persistent symptoms of stress (Santiago et al., 2010, p.1).

"Natural disasters involve environmental destruction, psychological symptoms, material losses and human losses. Various elements can produce a high level of anxiety in the person, making it impossible for them to function properly" (Nina-Estrella, 2019, p.1). Natural disasters are events or phenomena resulting from natural processes of the Earth that can cause significant damage to human life, property and the natural environment. These events can be sudden or develop gradually, and can have devastating impacts on communities and the environment. Natural disasters can have various causes, and their magnitude and consequences vary according to the type of event and geographic location. Post-traumatic stress disorder (PTSD), depression, anxiety disorders, or suicide attempts are some of the pathologies observed in people affected by natural or man-made disasters.

According to the National Institute of Health (NIH), n.d. post-traumatic stress disorder (PTSD) is a mental health condition that some people develop after experiencing or witnessing a traumatic event. This episode can be life-threatening, such as war, natural disaster, car accident or sexual assault.

From a mental health perspective, the Pan American Health Organization (PAHO) establishes that emergencies and disasters involve a psychosocial disturbance that exceeds the treatment or coping capacity of those who live through it (PAHO, 2016). All natural disasters, and more specifically hurricanes, have the particularity of causing immediate material and economic deterioration that has a direct impact on people's lives, even leading in some cases to the disintegration of families and the community, as seen in the creation of transit shelters, relocation to less vulnerable areas for an indefinite period of time or, as a last resort, forced emigration from one country to another (Abeldaño & Fernández, 2016).

In the face of a critical scenario such as hurricanes, all sectors of the population are affected: children, youth, adults and the elderly (ECLAC, 2014). Particularly, when the child and youth population is disrupted by these events, the fastest and most pertinent psychological intervention measures should be taken, as they are a subset more vulnerable to acquiring the burden of psychological stress due to losses (Kaplow, n.d.). The same author points out that hurricanes, being predictable phenomena, allow parents more time for preparations. In this time of anticipation, children and adolescents take on a greater burden of distress and stress, as they observe the desperation of their parents or guardians. This will lead them to want information about what is going on, so they know what they will face. Thus, the attitude assumed by adults in the face of the arrival of the hurricane will contribute to a calm and tranquil attitude on the part of children and adolescents.

According to López and Castro (2019), in Puerto Rico, it is common to hear about intense hurricanes such as San Ciriaco (1899), San Felipe II (1928), Hugo (1989), Georges (1998) and, now, María (2017). These hurricanes, and the intensity of their winds and rains, caused devastating damage on the island; however, we have experienced storms and hurricanes that, although of lesser intensity, have also caused great losses, even without having made landfall.

Method

Research Approach

A mixed approach was used, defined by Hernández, Fernández and Baptista (2014), as a set of processes for collecting, analyzing and linking quantitative and qualitative data in a single study or a series of investigations to respond to a problem statement. Data collection is used to test hypotheses based on numerical measurement and statistical analysis in order to establish patterns of and test theories. From the questions, hypotheses are established and variables are determined; a plan is drawn up to test them (design); the variables are measured in a given context; the measurements obtained are analyzed using statistical methods, and a series of conclusions are drawn.

The central premise of mixed studies is that the integration of quantitative and qualitative approaches can provide a better understanding of research problems than either approach alone (Osorio & Castro, 2021). According to these authors, their complementarity allows the contrast of non-coincident results, which would lead to broader reflections and subsequent rethinking, aimed at offering more elaborate conclusions. It is considered that a method by itself can rarely be strong and comprehensive enough to have a broader spectrum of the object of study; and research with a mixed method favors obtaining more robust results through triangulation. The combination of methods and techniques allows for greater richness and variety in the information obtained. Triangulation of their results contributes to achieving validity. To the extent that the research participants perceive the problem to be solved and the researcher has sufficient attitudes to collect all the information and interpret their feelings, this will contribute to the credibility of the results (Piza et al., 2019).

The study was carried out in five phases: the first was the exploration, investigation and diagnosis of the problematic situation; the second included the field work, that is, the application of surveys and interviews, as well as the evaluation of the instrument, accompanied by the drafting of the field report. The third phase consolidated the processes of action, reflection and planning, which led to the critical-reflective analysis of the findings and the development of a framework for reflection. In the fourth phase, the doctoral thesis was written as such and its defense was carried out; finally, the results of the study were synthesized in this article, which will be presented to the scientific community.

Population and Sample

The population was made up of Puerto Ricans affected during Hurricane Maria, according to the Central Intelligence Agency (CIA) World (2019), the population present at the time of the event was 2,792, 242 inhabitants. From this figure, the sample was calculated using the finite population formula, which resulted in a value of $n=385$. In other words, the sample considered for this study was 385 people from eighteen municipalities in Puerto Rico: San Juan, Caguas, Ceiba, Luquillo, Fajardo, Manatí, Carolina, Aguada, San Sebastián, Ponce, Cidra, Bayamón, Jayuya, Santa Isabel, Camuy, Arecibo and Hatillo.

Instruments

In the quantitative phase of the research, the following was used the Coping with Extreme Risks Scale of Lopez and Marvan (2004) by López and Marvan (2004). A Likert scale questionnaire containing 26 items grouped into two factors: active coping and passive coping. It was validated by the authors using Cronbach's Alpha coefficient, reaching an internal consistency index equivalent to 0.81, which indicates a high degree of reliability. In addition, the Post-traumatic Stress Disorder (PTSD) Symptom Severity Scale, designed by Echeburúa et al. (1997), was implemented, which consisted of 26 items,

distributed in three subscales: Reexperiencing, Avoidance and Increased Activation. This instrument showed a high internal consistency of 0.91 according to the Cronbach's Alpha coefficient determined by the researchers. The scale described above made possible the quantification of post-traumatic stress disorder, both in the global scale and in the different subscales. It is based on the DSM-IV diagnostic criteria and has been validated in a large sample of both patients and the normal population (Echeburúa, et al., 1997). In addition, these data were completed with the application of the Complementary Anxiety Scale of Echeburúa et al., (2016).

Meanwhile, the qualitative phase was characterized by the use of semi-structured interviews, validated through expert judgment. The interviews were conducted within the scheduled timetable. Each participant took between 1 and 2 hours to answer the ten questions contained in the interview guide. All agreed to the conditions of their participation and agreed to sign the informed consent form, in which they were also warned of the ethical principles governing the research process, as well as the risks involved in this type of encounter (high possibility of the informant having a flashback of the event or remembering moments of the disaster that make him/her feel sad or angry).

Results

Regarding post-traumatic stress symptoms, frequency distribution analysis revealed the following data. Of the total $n=385$, 186, i.e. 48.3% were female, and 199, representing 51.7% of the sample, were male. As for the Post-traumatic Stress Symptom Scale instrument, it was found that 33.8% of the participants manifested symptoms of re-experiencing, that is, nightmares, feelings similar to those of the day of the event and psychological discomfort when remembering the hurricane. Likewise, 96.6% of the participants stated that they did not have avoidance behaviors inherent to the phenomenon experienced. Well, they continue a normal life and remember the incident without pain. In this order, increased activation was reported in 15.2% of the sample studied. Victims reported symptoms such as insomnia, anger attacks and lack of concentration after the impact of Hurricane Maria.

On the other hand, the Complementary Scale of Somatic Manifestations of Anxiety revealed the presence of symptoms such as dyspnea in 16% of the participants, headache in 13, 12%, tachycardia in 9.4%, dizziness in 68% and nausea in 12, 12%. Regarding coping strategies, the Extreme Risk Coping Scale, 26% of the respondents showed passive coping and 74% active coping. The chi-square test was not significant ($p = 0.916$), so it is inferred that coping strategies are assumed in a similar way by both genders.

Active coping grouped the first thirteen items of López-Vázquez and Marvan's (2004) Extreme Risk Coping Scale. By means of which it was found that the majority of participants exercised active coping before the arrival of the hurricane and also in the days, weeks and months that followed. Men stood out in this regard; more than half of the male participants between the ages of 15 and 35 said they had a plan for dealing with this type of event. Sometimes the intervened subjects followed their planning, sought professional help, analyzed the severity and circumstances of the problem with its future implications, modified their environment (their home and community) to adapt to the changes left by the hurricane and participated in civil prevention activities.

On the other hand, the women used "rarely" active coping strategies focused on seeking a solution: asking for professional help, trying not to rush, carefully assessing the situation and talking to their family members. However, in the group of women who were evaluated, the vast majority resorted to passive coping strategies: not thinking about the problem, taking a walk to distract themselves, ignoring the seriousness of the situation, clinging to faith and praying for a miracle, among others. It is worth mentioning that this

is not the first time that a study on natural disasters has revealed this result in the female population. After Hurricane Katrina, many women, including girls, adolescents, young women and adults, showed passive coping as a psychological resource to cope with the shock caused by that natural disaster; since the need to maintain their sanity and not panic led more than 36% of women to block their emotions. This according to Rhodes et al., (2010, p.242).

Regarding Pearson's correlation test, the variable Coping correlated positively and significantly with the variables Symptoms ($r = 0.100$; $p < 0.049$), Somatic Manifestation ($r = 0.173$; $p < 0.001$) and with the variable Avoidance, a dimension of Post Traumatic Stress Disorder (PTSD) symptoms ($r = 0.193$; $p < 0.001$). As expected, the variable Symptoms (total responses of the 17 items) was significantly correlated with its components Re-Experiencing ($r=0.502$; $p<0.000$), Avoidance ($r =0.732$; $p<0.000$) and Activation ($r=0.444$; $p<0.000$). The Somatic Manifestation variable correlated negatively and significantly with the Re-Experimentation variable ($r= -0.153$; $p< 0.003$) and positively with the Avoidance variable ($r=0.137$; $p<0.007$). It is important to note that the Symptoms variable represents the totality of PTSD symptoms assessed in its three dimensions (Re-experiencing, Avoidance and Activation) and therefore it is logical to expect very high relationships between these variables.

Within the psychological effects, a high percentage of Puerto Ricans with anxiety was also revealed. Disorder evidenced by symptoms such as: headache, shortness of breath, dizziness, nausea, chest discomfort, tremors, numbness of the hands, feeling of unreality, fear of going crazy and fear of dying (Hernández, 2022). By virtue of the studies reviewed and their subsequent comparison with the experiences of the participants, it was concluded that the psychological impact caused by "Maria" was exacerbated by the slow response of the government, the deficiencies in basic services, the experience of recent and distant traumas, the personality of each individual, the existence of chronic mental or somatic illnesses, the poor planning of families, and the degree of vulnerability of many people who were in no way prepared to go through such a forceful experience.

The anguish experienced by residents of eighteen municipalities of Puerto Rico became even stronger as they felt the abandonment of government agencies, the poor organization of institutions to meet their needs, such as: the cumbersome protocol to request housing repairs, the collapse of psychological care lines and the delay in some municipalities to rebuild streets and schools (Rivas, 2018). Despite the efforts of the Federal Emergency Management Agency (FEMA) to immediately attend to the affected families and provide them with supplies, water, food and medicine, the psychological damage to the population appeared almost immediately, with people experiencing high blood pressure, panic attacks, fainting or dizziness, along with other anxious manifestations after the event.

Puerto Ricans with a history of similar trauma exhibited better active coping compared to those who had never gone through a similar experience. Negative emotions: sadness, helplessness, guilt and anger primarily in young women, who were found to be more vulnerable than the male population. This result was also visualized in studies of Hurricane Harvey victims (Amos Nwankwo et al., 2021, p. 22), who showed a high degree of post-traumatic stress, anxiety and depression after the hurricane, despite having received emergency psychological help.

Again, it was reaffirmed that the ability to accept and cope with a traumatic event depends on: the psychological structure of each individual, support networks, their capacity for resistance and resilience, previous experience of trauma or prolonged exposure to extreme risk situations. As in other research, the vulnerability of the

population has been a key variable in analyzing the effectiveness of coping measures. During Hurricane Irma in 2017, the municipalities of Culebra and Vieques were the most affected, registering more than 300 injuries, twelve deaths and hundreds of millions of dollars in material losses, including hours without electricity and drinking water, which lashed the population of these places for weeks (Sin comillas, 2017).

The aspects that distinguish Hurricane Maria from other similar hurricanes (hurricanes George, Irma, Katrina, Harvey, Sandy and Mitch, among many others), is that the Puerto Rican population was preparing for a strong hurricane, but it was not known that it would have such a devastating effect, the days prior to the phenomenon many supermarkets were empty, due to the high demand for food and bottled water, the nervous purchases of the residents of the Island were exacerbated by the uncertainty of not knowing if their reserves would be enough (El Nuevo Día, 2017). Not two weeks had passed since Hurricane Irma when Puerto Rico had to face a new natural disaster; this was also a determining factor in the psychological effects produced in the Caribbean population.

However, some studies highlight that the incidence of post-traumatic stress, anxiety and depression in the victims of "Maria" was not as high in relation to other hurricanes such as Katrina, Michael and Harvey, which, although they were category four, left huge material and human losses in the United States (Marca, 2017). This research found a high degree of resilience on the part of the respondents, as well as good coping skills. These characteristics can be attributed, as Vargas and Coria (2017) explain, to the fact that they are mass events already experienced by the population and even form part of their culture. As a result, many establish more assertive family contingency plans and seek psychological mechanisms to alleviate the emotional impact: deep breathing, conversations, self-comfort, analysis of the situation and how to get out of it.

To propose actions to avoid or mitigate the adverse psychological effects and to reinforce effective coping strategies for future hurricanes in the Puerto Rican population, this research suggests. As well as adopting community programs to promote resilience in sectors considered vulnerable. This involves taking talks, workshops and support groups (social workers) to the communities most affected by Hurricane Maria, strengthening the self-esteem of people who lost their homes, helping to rebuild neighborhoods, schools and avenues. That is to say, to promote the integration of human communities in the recovery of their own spaces, since this will serve to strengthen the sense of belonging and to move away from the idea that everything must be done by the government alone. It is important to highlight the vital importance of this strategy to prepare the Puerto Rican population for similar events that may continue to occur in view of the increasing climate change and the island's location, which makes it prone to phenomena of this nature.

Reinforce environmental education in the inhabitants of Puerto Rico, this would imply creating awareness campaigns in elementary schools, high schools and universities about the consequences of hurricanes and how to mitigate their social, economic and psychological effects. Considering the relevance of education as an entity that transforms society and creates progress. As highlighted by Asencio-Pagán (2018) in his study on the resilience of vulnerable communities in Mayagüez to the effects of Hurricane María, it is urgently necessary to improve plans that already exist such as the Family Contingency Plan offered by FEMA, which quantifies damaged homes and evaluates which families to provide with credits for the restoration of their homes and furnishings.

Propose improvements to the electrical system, since María damaged more than 80% of the electrical grid, leaving a large part of the municipalities in the dark for months (Sánchez and Mazzei, 2022). This study also recognized the importance of investing in a good electrical infrastructure to withstand future hurricanes. The energy supply is key to

maintaining the Island's commercial dynamics, the medical-health system, education and industrial activity. Likewise, mechanisms must be devised to have sufficient fuel reserves available for possible future natural disasters, since more than half of the deaths caused by Hurricane Maria were due to a lack of gasoline to transport the sick and injured, according to Nina-Estrella (2020).

Discussion and Conclusions

In order to support the results obtained from the descriptive statistical analysis, we the most significant findings were then compared with the literature review, the which included the consultation of scientific articles, master's theses, doctoral dissertations, the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (MDS-5), books, reports, among others. One of the most immediate psychological disturbances generated by a natural disaster or any other trauma is re-experiencing, conceived as the recreation of the event through conversations, dreams, flashbacks, situations that evoke the trauma.

In this study a significant number of participants exhibited reexperiencing symptoms. That is, because the majority chose to block these memories as a self-protection mechanism. On the other hand, the minority preferred to keep these memories in mind, recreating the traumatic scenes more frequently, in order to assimilate what happened, in order to subsequently overcome it. In similar studies of psychological effects in populations affected by hurricanes, it was found that women are the most likely to use avoidance as a coping strategy to relieve the tension and stress generated by the event, according to research conducted by Rhodes et al. (2010), on the impact of Hurricane Katrina on mental health, it was found that women were the most affected psychologically and that avoidance responses were linked to high levels of depression and anxiety. In this aspect, the differences were not significant, only a 2.2% difference between men and women.

Sleep disorders are due to noradrenergic projections from the locus ceruleus to the prefrontal cortex, amygdala, hippocampus and hypothalamus, which show increased activity in response to a stressor (Strawn, 2008). This activity mobilizes energy resources for the fight or flight response. Norepinephrine, for example, increases heart rate and blood flow to skeletal muscles, and triggers the release of glucose. In turn, from the lateral hypothalamus, the orexinergic system promotes the activation of the cerulean locus, leading to changes in the regulation of sleep/wakefulness, emotion and cognition in response to fear (Zegarra and Chino, 2022). These physiological responses involve the maintenance of PTSD symptoms such as SNS hyperarousal, conditioned fear reinforcement, nightmares, flashbacks and others.

After Hurricane Maria, it was not only the victims who showed signs of post-traumatic stress. Some staff members of the rescue team as well. According to Vázquez-Algarín (2021), the manifestations of stress and anxiety spread to those in charge of rescuing the population. People suffered shortages of basic necessities, lack of electricity, injuries and the spread of diseases due to the sanitary conditions of the shelters. A reality that dismayed the medical and rescue team, who felt very overwhelmed and powerless by the situation, as they were unable to do more than they could.

In connection with seeking professional help, the government activated a hotline to receive calls from people in critical situations, with serious injuries, with injured or ill

family members, with suicidal ideations and others. The rescue efforts were carried out by the Federal Emergency Management Agency (FEMA), in addition to the collaboration of other institutions such as INSPIRA to provide psychological care to those affected, the Red Cross, and the Addiction and Mental Health Services Administration (ASSMCA), which activated the PAS line, available 24 hours a day, 365 days a year.

It is concluded that the most common psychological effects in Puerto Ricans after Hurricane Maria were those associated with post-traumatic stress syndrome as defined by Kardiner (1941). Specifically, the avoidance of conversations, situations related to the event or memories, as a mechanism specific to each individual to minimize the emotional distress caused by the catastrophe. It was also revealed that many of the participants suffered serious physical, material and emotional damage due to the loss of family members, acquaintances and relatives who died as a result of the lack of medical attention and basic services in the weeks and months following the passage of Hurricane Maria.

This research proposes to continue investigating the psychological effects of Hurricane María. The government, foundations and international organizations should continue with prevention programs, as well as with the social aid provided to the municipalities most affected by this event, so that they can recover their spaces, resume the rhythm of their lives, successfully overcome this traumatic episode, develop a persistent and resilient attitude over time, accompanied by an awareness of the abrupt environmental changes that are coming.

The validation of the coping scale in the Puerto Rican population was achieved by calculating Cronbach's Alpha Coefficient, which yielded a value of 0.873, implying a very high reliability of this instrument. It is worth mentioning that this instrument was also validated by its original authors, Dr. Esperanza López Vázquez and Dr. María Luisa Marván (2004), who found it valid and reliable when applied to a population of people in Mexico living in situations of natural and industrial risk. Likewise, the development of this work allowed the validation of the coping scale when it was used with a group of victims of Hurricane Maria, who also constitute a population exposed to natural disaster risks.

This study demonstrated that the occurrence of a natural phenomenon such as Hurricane Maria leaves a strong social, economic and psychological impact on the population that experiences it, but especially on those with the highest degree of social vulnerability. The government of Puerto Rico does not have the capacity to respond effectively to these events due to its fiscal crisis; the aid allocated by the Federal Emergency Management Agency is not sufficient and involves a cumbersome protocol that slows down the housing reconstruction process. It was also evident that, despite the bureaucracy of the state government and its agencies, most residents of Puerto Rico manage useful and assertive coping strategies, that is, there is a collective culture on how to survive hurricanes.

The latter is an advantage from a socio-health point of view, as it helps to prevent prolonged mental health crises and leads the population to adopt increasingly effective measures to face, survive and overcome adverse natural events that jeopardize their stability and integrity.

This study on the psychological effects of Hurricane Maria on Puerto Ricans revealed that the most common effects were those associated with post-traumatic stress syndrome, especially the avoidance of memories and conversations related to the event. Many participants suffered physical, material and emotional damage due to the loss of family members and the lack of medical care and basic services in the aftermath of the hurricane. High levels of anxiety were also identified, reflected in physical and emotional symptoms such as headache, dizziness, fear of dying and panic attacks.

The psychological impact was exacerbated by the government's slow response, inadequate services and neglect of vulnerable populations, such as people with chronic illnesses, previous trauma or limited resources. Despite the efforts of FEMA and non-governmental organizations, assistance was insufficient in the face of high levels of post-traumatic stress and anxiety. The most vulnerable population, such as young people and people with a history of trauma, showed a higher degree of emotional distress.

In terms of coping strategies, it was observed that people who adopted active strategies, such as planning and seeking professional help, showed better adaptive capacity. On the other hand, many women resorted to passive strategies such as ignoring the problem or clinging to faith. The importance of resilience and preparedness for future events was highlighted, which should be fostered through community and educational programs that strengthen self-esteem and the integration of communities in recovery.

It was proposed to improve the infrastructure, especially the electrical system, and to continue with long-term psychological support to mitigate the emotional effects of the hurricane. The study also validated a coping scale applied to the victims, with high reliability, suggesting that coping strategies are key to psychosocial recovery. Despite the difficulties and lack of government resources, Puerto Ricans show a collective ability to cope with natural disasters, which contributes to reducing prolonged mental health crises.

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Conflict of interest

The author declares that she has no conflict of interest.

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RELATIONSHIP BETWEEN PERSONALITY TRAITS AND TRANSVERSAL COMPETENCES OF TEACHERS IN VIRTUAL EDUCATION

Relación entre rasgos de personalidad y competencias transversales de docentes en educación virtual

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ABSTRACT

Keywords: Personality, Competencies, Virtual Education, Factors, Traits.

COVID-19 and technological advancements have increased the importance of virtual higher education globally. Researchers have focused on studying both academic actors and virtual environments to improve student learning outcomes. Teachers' personalities and competencies, shaped by their beliefs and experiences, play a key role in knowledge transfer. The purpose of this study was to identify the relationship between the personality traits and transversal competencies of teachers at a virtual education university in Colombia. This quantitative, descriptive study used a non-probabilistic, convenience sample of 155 teachers. Data was collected using the Big Five personality traits inventory (BFQ-2) and analyzed with descriptive statistics and correlations using JAMOV 2.6.13. Agreeableness and Openness to Experience were the dominant personality traits. Sociability and Change Management were the key competencies. Most personality factors correlated significantly, except for Extraversion and Neuroticism. Similarly, most personality factors correlated with competencies, with the exception of Extraversion and Emotion Management. These findings offer valuable insights into the complex dynamics of virtual teaching, within the context of technological progress and the lessons learned from the COVID-19.

RESUMEN

Palabras clave: Personalidad, Competencias, Educación Virtual, Factores, Rasgos.

El COVID-19 y los avances tecnológicos han aumentado la importancia de la educación superior virtual a nivel mundial. Los investigadores se han centrado en estudiar tanto los actores académicos como los entornos virtuales para mejorar los resultados del aprendizaje de los estudiantes. Las personalidades y competencias de los docentes, moldeadas por sus creencias y experiencias, desempeñan un papel clave en la transferencia de conocimientos. El propósito de este estudio fue identificar la relación entre los rasgos de personalidad y las competencias transversales de docentes de una universidad de educación virtual en Colombia. Este estudio cuantitativo y descriptivo utilizó una muestra no probabilística por conveniencia de 155 docentes. Los datos se recopilaron utilizando el inventario de rasgos de personalidad de los Cinco Grandes (BFQ-2) y se analizaron con estadísticas descriptivas y correlaciones utilizando JAMOVI 2.6.13. La amabilidad y la apertura a la experiencia fueron los rasgos de personalidad dominantes. La sociabilidad y la gestión del cambio fueron las competencias clave. La mayoría de los factores de personalidad se correlacionaron significativamente, excepto la extraversión y el neuroticismo. De manera similar, la mayoría de los factores de personalidad se correlacionaron con las competencias, a excepción de la extraversión y el manejo de las emociones. Estos hallazgos ofrecen información valiosa sobre la compleja dinámica de la enseñanza virtual, dentro del contexto del progreso tecnológico y las lecciones aprendidas de la pandemia de COVID-19.).

Introduction

Virtual education has become a stronger teaching model in the last decade, especially given the three higher education modalities in Colombia: face-to-face, virtual, and hybrid. Despite face-to-face and urban education appearing superior in quality based on state exams, virtual education offers learning opportunities to students in areas with limited access to institutions (Arias et al., 2021). Given the distinct teacher-student dynamic in each model, it's crucial to examine the competencies teachers need to effectively facilitate independent learning in virtual education.

Students in virtual education, while overcoming barriers of distance and potential cultural displacement, may face challenges like insufficient academic foundations and competencies compared to students trained in urban areas, potentially impacting their performance and increasing dropout risks (Arias et al., 2021). This emphasizes the need for virtual teachers to possess additional skills to identify student shortcomings due to academic gaps, which can hinder student potential and cause frustration, thus requiring an action plan.

As virtual teachers, we frequently emphasize the importance of continuous and ongoing training for educators. However, we also question whether all teachers possess the personal competencies necessary to engage in such training. Many of us have backgrounds in traditional face-to-face education, both at the basic and professional levels, where we often encountered teachers who lacked the charisma to teach effectively, while others served as exemplary models of inspiration.

Teacher personalities influence educational processes and student interactions. Personality traits can support student character development (Irfan & Marsigit, 2021). Teachers with positive personalities tend to create empathetic, harmonious environments conducive to learning. Traits like self-efficacy, hope, optimism, and adaptability can improve teaching effectiveness (Huang et al., 2018).

Competency-based training is understood as a teaching and learning process aimed at acquiring skills, knowledge, and abilities continuously and permanently to improve the profession, professional development, socio-professional promotion, and professional retraining.

Competencies related to their performance in the student training process in higher education institutions have been the subject of numerous studies. Digital competencies can be understood as the ability to use technologies and comprehend their impact in the digital world, promoting their optimal integration (S.A. NMC, 2017). According to Guillén et al., (2023) Teacher Digital Competence refers to different skills related to the use of tools and technologies in the context, requiring teachers to become facilitators, teach how to use computer tools, provide ways of appropriating information, and create habits and skills in information search, selection, and processing. The guiding principle in the use of technological resources is to adapt ICT to teaching, not teaching to ICT (Villacres et al., 2017).

The challenge in teacher training lies in linking teaching competencies with personality traits to achieve academic development based on what we believe and who we are (Sánchez, 2010). Learning involves reconstructing and restructuring cognitive, emotional, and value-related factors (Scheuer et al., 2006). It requires awareness, reflection, and contrasting latest information with previously stored knowledge. Only by giving greater validity, significance, meaning, and truth to new information can change be generated (Ortiz, 2009). Thus, the cognitive and behavioral transformation of teacher training is complex and requires delving into the ideological network of theories and beliefs that determine how teachers make sense of their professional practice, which must be understood to achieve modification (Korthagen et al., 2006).

On the other hand, studies have shown the importance of considering gender and age in the different studies carried out in order to find significance between the aforementioned variables (Cárdenas et al., 2010; Genise et al., 2020). For example, Shahla & Yugmur (2020), conducted a study on the impact of anxiety, depression and stress on emotional stability. They found that there is no significant relationship in relation to the gender and age of the participants.

The BFQ-2 Personality Factors and Key Workplace Competencies

The Big Five personality model describes five key personality traits: Extraversion, Agreeableness (Friendship in the text), Conscientiousness, Neuroticism, and Openness to Experience. It balances simplicity (fewer traits than some models) and comprehensiveness (more traits than others). This model is based on research using both language and statistical factor analysis, suggesting these five dimensions capture the most important individual differences in personality (BFQ-2: Cuestionario Big Five-2, 2022).

The Big Five personality model explains personality using five core dimensions: Extraversion (social confidence and enthusiasm), Agreeableness (altruism vs. hostility), Conscientiousness (responsibility and perseverance), Neuroticism (anxiety and emotional instability), and Openness to Experience (embracing new ideas and feelings). These five dimensions offer a comprehensive view of personality. Furthermore, six competencies (Proactivity, Leadership, Sociability, Work Quality, Emotional Management, and Change Management) are linked to these Big Five dimensions, aligning with established personality categorization methods (BFQ-2: Cuestionario Big Five-2, 2022).

Personality, according to Fernández (2015), citing Hernández (2012), is the set of identifying characteristics or patterns of an individual, encompassing feelings, thoughts, attitudes, and behaviors. Its formation involves biological factors and is modified through interactions with the environment.

Cuadra (2023) connects the Big 5 Factor Theory to research on the five-factor model by Costa & McCrae (2006), who suggest biological factors primarily determine traits. Costa and McCrae (2006) also state their theory aims to provide a general understanding of human nature and behavior, including exceptions. While basic tendencies of traits are biologically based, their expression in habits, preferences, attitudes, and relationships—termed "characteristic adaptations"—are shaped by experience.

Genise & Etchezahar (2020) points out that Costa & McCrae (1980) propose a grouping of personality traits that facilitates the differentiation of each person into five major factors: "Openness to the experience" to Experience (O), Responsibility (C), Extraversion (E), Agreeableness (A) and Neuroticism (N).

Thus, they understand the trait of "Openness to the experience" to experience" as the personality trait that describes the permeability/depth of consciousness and the need to examine and magnify personal experience (McCrae & Costa, 1997). This trait facilitates creativity, i.e., open people can easily make creative connections between different ideas (Sutin, 2017). This permeability refers to a greater flexibility of mental boundaries. In this sense, Sutin suggests that open-minded individuals are curious, looking for variety and novelty. Similarly, this trait of "Openness to the experience" to experience has several facets: a vivid imagination (O1: fantasy), an appreciation for art and beauty (O2: aesthetics), depth of emotions (O3: feelings), enthusiasm for trying new things (O4: actions), intellectual curiosity (O5: ideas), and being liberal (O6: values).

Similarly, "responsibility" reflects the propensity to be self-controlled, responsible with others, hardworking, orderly, and respectful of rules (Roberts et al., 2006).

Cuadra (2023) suggests that the trait of "Extroversion" is a personality trait that reflects the tendencies to experience and exhibit positive affect, assertive behavior, decisive thinking, and desires for social attention.

On the other hand, Revelle (2017) more extroverted individuals are characterized by "Extraversion," dominance, spontaneity, and sociability.

The "agreeableness" trait describes a set of skills connected to traits such as agreeableness (Graziano & Tobin, 2017). In this sense, Cuadra (2023) cites Laursen et al., (2002), who propose that kindness is associated with stable self-regulatory processes from childhood to adulthood. These processes are related to empathy, worked by Graziano & Tobin (2017), who propose a trio of variables underlying trait kindness: 1- dispositional empathy, 2- temperamental processes of effortful control, and 3- processes associated with social accommodations.

Trait "neuroticism" is a personality trait that involves the tendency to experience negative affect and emotions, including feelings of sadness, anxiety, and anger (Tackett & Lahey, 2017), where high levels of this trait may promote adverse interpersonal outcomes (2009). Similarly, low levels are associated with tremendous occupational success (Roberts et al., 2007) and higher quality of life (Ozer & Benet-Martinez, 2006).

On the other hand, competencies can be defined within both organizational and educational contexts. In education, competencies are described as the knowledge acquired to be used in performance conditions (Trujillo-Segoviano, 2014, cited in the Ministerio de Educación Gobierno de Ecuador, 2023)

This work uses the BFCmap, a statistically validated competency dictionary from Italy, linked to the Big Five theory. This theory identifies six transversal competencies within five macro-areas corresponding to the five major personality factors (Borgogni et al., 2016). Competencies are defined as "a set of behavior signals related to each other and characteristics of that competency, closely connected to work success" (Borgoni et al., 2016, p.7).

These competencies are:

Proactivity: These individuals are energetic, act independently and quickly, use networking to find opportunities, and are persuasive, making them proactive, lively, and friendly communicators.

Leadership: These skills involve managing teams through process oversight, resource allocation, and deadline monitoring. They also include motivating, engaging, and supporting team members' growth by identifying development opportunities.

Sociability: Competencies that characterize an approach to work based on collaboration, integration, and knowledge exchange. Prioritizes relationships and negotiating solutions by recognizing existing knowledge and capabilities.

Quality of Work: Competencies related to the effective management of activities such as planning, organization, and monitoring of results. It also involves assuming responsibilities based on quality and the ability to provide a service that meets and exceeds others' expectations.

Emotional Management: The ability to effectively face difficulties and negative work events from a constructive approach despite challenging, uncertain, or complex scenarios.

Change Management: Competencies related to change management and problem-solving. Individuals with these competencies can generate innovative solutions, promote change, and easily adapt to contextual demands."

Relationships between personality traits and competencies

Individuals share similarities and exhibit differences, reflecting a unique combination of traits. Personality is a complex system with many components, including intellect, character, temperament, disposition, mood, attitudes, behavioral tendencies, traits, states, competence, and mental functions (Mayer, 1995). These components can be described verbally, metaphorically, or mathematically to better understand personality's complexity (Issabekova, Bakiner & Karasah, 2021).

In addition to personality, factors like student learning styles (Grasha, 1996) are crucial in education. Different styles, such as competitive, collaborative, evasive, participative, dependent, and independent, contribute to the learning environment's complexity. Understanding these styles is important for effective teaching and student engagement.

Research indicates personality traits significantly influence learning style and job satisfaction (Li et al., 2021). While active learning techniques improve learning outcomes in traditional classrooms (Dolan & Collins, 2015), their implementation can depend on the teacher's personality and available resources, requiring a careful approach.

A theoretical gap arises concerning the relationship between personality traits, as defined by Caprara and Cervone (2003), and teaching competencies in technology-mediated interactions like virtual education. This research aims to address this gap by exploring the articulation of personality dimensions—"Extraversion," Kindness, Tenacity, "Neuroticism," and Open-Mindedness—from the BFQ-2 Test with the competency model proposed by Caprara et al., (2018).

This study examines 155 teachers from a Colombian Caribbean virtual university. It uses the BFQ test to assess personality traits and competencies, focusing on proactivity, leadership, sociability, work quality, change management, and emotional management.

Prior research suggests that individuals with traits related to agreeableness and conscientiousness demonstrate improved job performance. Similarly, conscientiousness (Tenacity in the text) and "Neuroticism" are linked to positive outcomes (McCrae & Costa, 1986). Traits like "Openness to Experience" are associated with academic success, intelligence, creativity, and intellectual curiosity. Fostering these traits in educational settings and student interactions can create a more enriching learning environment.

This research encourages reflection on the relationship between personality traits and competencies to improve teaching and learning, ultimately aiming to develop proposals that strengthen student learning processes and contexts.

Influence of Teachers' Personalities on Learning

Teachers' personalities significantly impact education and student interactions (Irfan & Marsigit, 2021), predicting effective teaching (Njoku, 2020; Irfan, 2021). Positive teacher personalities create positive learning environments. Traits like self-efficacy, hope, optimism, and adaptability enhance teaching (Zhang, 2023). Research suggests a link between teacher personality and educational processes, advocating for connecting teaching competencies with personality traits to align academic development with personal beliefs and professional identity (Lukman et al., 2021).

Competency-based training is crucial for professional development, providing skills, knowledge, and abilities. Exploring competencies related to student training in higher education, especially digital competencies, is essential. Teacher digital competence involves using technology in education and guiding students to enhance traditional teaching (Vandeyar, 2020). It requires fostering information appropriation and developing information search, selection, and processing skills (Guillen et al., 2023).

Solving teacher training challenges requires connecting teaching competencies with emotions, impacts, and efforts (Nuraini et al., 2021). Teacher Digital Competence highlights the need for technical skills and the ability to facilitate student learning, promote information appropriation, and cultivate information management habits and skills (Guillén-Gámez et al., 2023).

Learning involves reconstructing cognitive, emotional, and value-related factors (Pozo et al., y Echeverría, 2006). It requires conscious reflection and validating new information. Teacher education involves complex cognitive and behavioral changes, necessitating an examination of the ideological network of theories and beliefs that influence educators' professional practice (Committee on How People Learn II: The Science and Practice of Learning;

Board on Behavioral, Cognitive, and Sensory Sciences; Board on Science Education; Division of Behavioral and Social Sciences and Education; National Academies of Sciences, Engineering, 2018).

Therefore, students with high academic motivation prefer task-oriented teachers, while those with low academic motivation value relationship-oriented teachers more (Keerthigha & Singh, 2023).

Teachers in Virtual Education

The prevalence of technology has created new educational styles and challenges. The impact of technological, economic, and cultural factors drives the search for adaptable learning conditions. Consequently, developing digital competencies has become a global priority for governments (European Commission, 2020).

Distance education emerged to address accessibility challenges in higher education, aligning with pedagogical, scientific, and technical advancements (Yong É., Nagles N., Mejía C. & Chaparro C.E, 2017). Successful distance education, mitigating the social educational gap, evolved into "virtual education" with the rise of new technologies.

Technology-mediated education has redefined student and teacher roles. Teachers become learning mediators, while students take a more active role, developing self-regulation and self-discipline for autonomous learning, and improving teamwork skills (Silva-Quiroz, 2010).

Therefore, educators face the challenge of developing new skills to ensure the proper use of technological resources, motivating students to be curious learners using different platforms in the digital world (Guevara et al.; S., 2021).

Garrison and Anderson (2005), cited by Silva-Quiroz (2010), emphasize the importance of participatory communication environments in online education, highlighting "context and the creation of learning communities to facilitate reflection and critical discourse." This underscores the teacher's role in guiding student cognitive and social processes towards meaningful learning. Virtual learning involves four key elements: cognitive, social, in-person, and the teacher's role.

Leal (2022) considers it crucial to recognize leadership and proactive actors within the organization, as it promotes innovation, relevance, interest in solving problems, and motivation to achieve collective results that satisfy all organization members.

UNESCO (2022) highlights a greater challenge for teachers regarding competencies, emphasizing the need for digital skills and the ability to understand emerging technologies like Artificial Intelligence (AI). This requires teachers to develop the knowledge, skills, and attitudes necessary to understand AI's educational functions and ensure its ethical and practical implementation in their teaching (Coca & Llivina, 2021).

UNESCO (2023) stresses the challenge for universities to create interdisciplinary programs and curricula that develop AI and digital transformation competencies. This includes integrating tools like ChatGPT for learning, research, administration, and community engagement, while considering ethical implications such as academic integrity and data protection.

Method

This quantitative, descriptive, and non-experimental cross-sectional study (Manjunatha, 2019) aimed to characterize the personality traits and transversal skills of teachers at a virtual university in the Colombian Caribbean. The research question guiding the study was: ¿What skills and personality traits predominate among teachers at a virtual university in Colombia?

As H0, there is no significant relationship between personality traits and transversal competencies of teachers at the virtual education university in Colombia, nor are there significant differences between men and women in these aspects.

As H1, there is a significant relationship between the personality traits and transversal competencies of teachers at the virtual education university in Colombia and there are significant differences between men and women in these aspects.

This study used a non-probabilistic, convenience sampling method, with 155 teachers from a virtual university in northern Colombia participating. Participants were contacted via email, informed about the study's purpose, data handling, and voluntary participation, and provided with a link to the test.

Instrument

The study used the BFQ-2 questionnaire (Caprara et al., 2018), based on the Big Five theory, to evaluate five personality factors: Agreeableness, Openness to Experience, Neuroticism, Conscientiousness, and Extraversion. This second version of the "Big Five" consists of 134 items and is administered individually, often via an online platform.

In addition to the personality traits provided by the BFQ-2, the test also produces a report that provides hypothetical competence profiles (Proactivity, Leadership, Sociability, Quality of work, Emotion Management, and Change Management) extracted from the BFCmap © a recognized dictionary of competencies validated in the organizational field.

The BFQ-2 is completed with a scale L = Lie (14 items) divided into Selfish Lie (measures the tendency to attribute positive qualities associated with social and intellectual status) and Moralistic Lie (measures the tendency to attribute morally desirable qualities to oneself).

It is considered an instrument with a high reliability index in Europe and the United States. On this occasion, it was found that Cronbach's Alpha was 0.980.

The instrument underwent expert validation, with academics reviewing it online. They found the questions clear, coherent, relevant, and sufficient, with vocabulary appropriate for the Colombian population.

Results

Data was analyzed using Jamovi 2.6.13 to calculate descriptive statistics and measures of association. Frequency analysis revealed that participants came from all university training schools in the Caribbean region. The sample consisted of 54% females and 46% males.

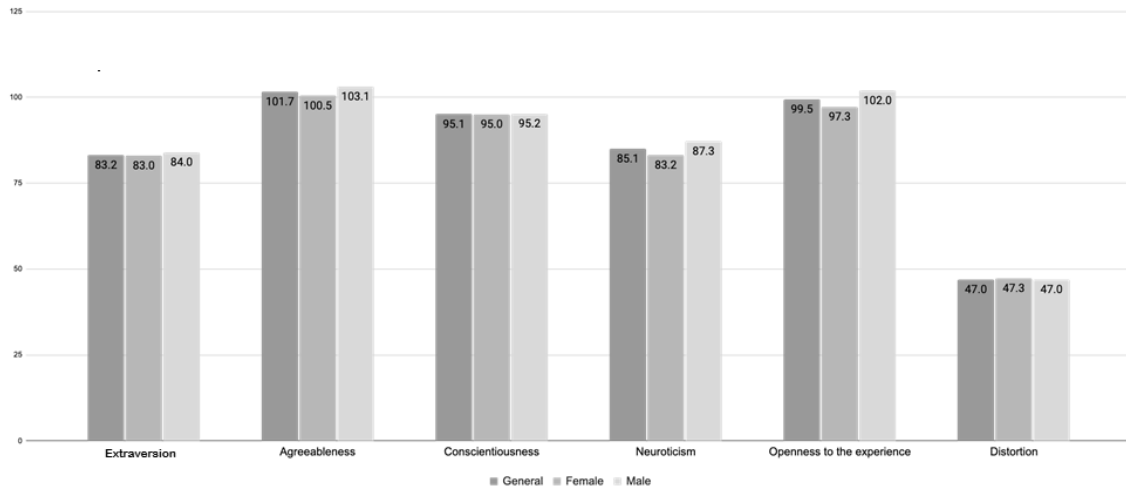
The average age of participating teachers was 41.8 years (41 years and 9 months). Women averaged 40.9 years (40 years and 11 months), while men averaged 43.1 years (43 years and 1 month). The oldest teacher was 66 years old, and the youngest were 25 (female) and 23 (male).

Sociodemographic variables such as age and gender are taken into account, giving the opportunity to a heterogeneous sample to show experiences from each of the groups and generate a greater understanding of the processes (Subsecretaría de Educación Parvularia, 2023).

Figure 1 shows personality scores across dimensions, with distinctions based on gender. In "Extraversion," males scored slightly higher than females (84.0 vs. 83.0). Similarly, in Agreeableness, males scored higher (103 vs. 101). Conscientiousness scores were consistent (95 for both genders). "Neuroticism" exhibited a slight gender difference (87 for males, 83 for females). In "Openness to the experience," males scored higher (102 vs. 97). Notably, Distortion scores remained uniform across genders (47 for both). The numbers indicate subtle gender differences regarding enthusiasm, agreeableness, emotional resilience, and "Openness to the experience."

Figure 1.

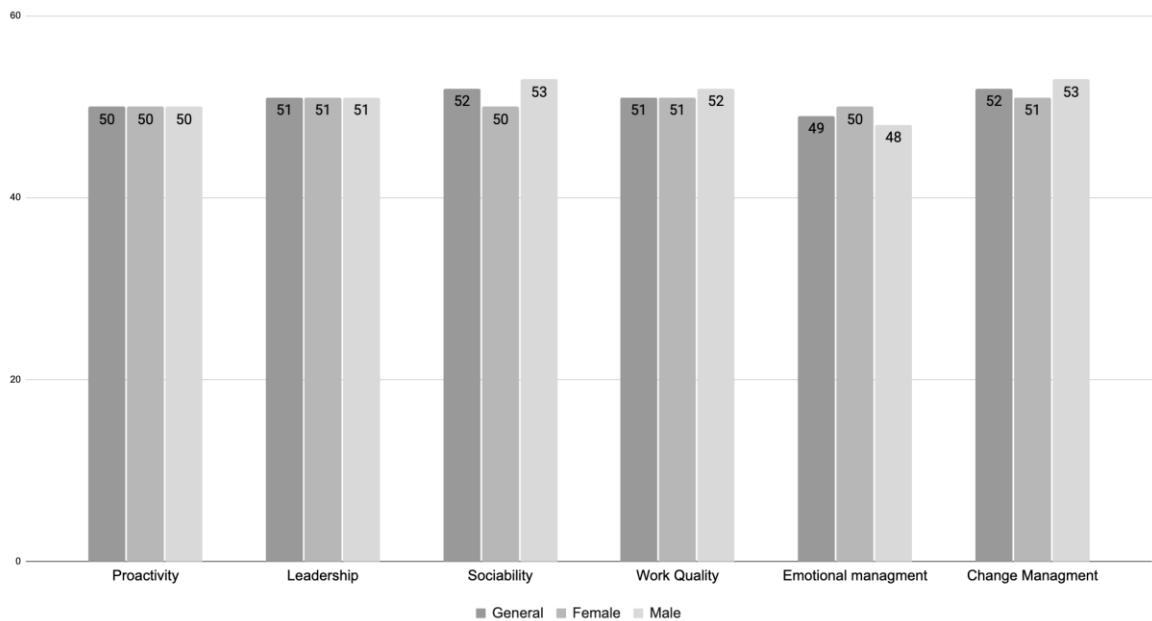
Distribution of means of the BFQ-2 personality traits.



In addition, Figure 2 indicates the distribution of means of the BFQ-2 competencies presented by the group, and gender is shown, highlighting Change Management (51.6), Sociability (51.3), and Quality of Work (51.3).

Figure 2.

Distribution of Mean Competences in BFQ-2



Proactivity and Leadership scores were consistently around 50 across all groups. Sociability showed minor gender differences, with males scoring higher (53) than females (50). Work Quality showed almost no variation, averaging 51.3. Emotional Management averaged 48.9, and Change Management averaged 51.7. These averages reveal central competency tendencies and subtle differences between group

To compare the personality traits proposed by the Big Five Questionnaire (BFQ) concerning the gender variable within the sample, the One-Way ANOVA statistical analysis was employed through Fisher's analysis (See Table 1).

This statistic allowed the means to be compared in order to determine if there is a significant difference between the means of the groups.

Table 1.
Direct Scores One-Way ANOVA (Fisher's).

	F	d f1	d f2	p
Extraversion	0.1			0.6
	860		53	67
Agreeableness	3.3			0.0
	144		53	71
Conscientiousness	0.0			0.8
	184		53	92
Neuroticism	3.9			0.0
	138		53	50
Openness to the experience	7.9			0.0
	741		53	05

To demonstrate the normality of the data, the Shapiro-Wilk test was performed due to its high power in detecting deviations from normality, even in large samples, and it provides an accurate estimate of the probability that the data come from a normal distribution. In the case of personality, revealing the assumption of normality for all variables ("Extraversion," Agreeableness, Conscientiousness, Emotional stability, and "Openness to the experience"), revealing that the sample data exhibit normality with values exceeding $p > 0.05$ (0.49, 0.1, 0.1, and 0.09) See Table 2.

Table 2.
Normality Test (Shapiro-Wilk).

	W	p
Extraversion	0.9	0.4
	92	91
Agreeableness	0.9	0.1
	87	45
Conscientiousness	0.9	0.1
	87	63
Neuroticism	0.9	0.1
	86	29
Openness to the experience	0.9	0.0
	85	90

Note. A low p-value suggests a violation of the assumption of normality.

To compare the two variances, One-Way ANOVA was used to determine whether the observed differences between group means are statistically significant or simply due to chance.

Furthermore, the homogeneity of variances was disclosed through Levene's test in the context of a One-Way ANOVA for the five personality traits. The results disclosed diverse levels of heterogeneity

among the traits. For "Extraversion," Levene's test produced an F-statistic of 2.2953 with 1 degree of freedom, suggesting a potential difference in variances. Likewise, Agreeableness exhibited an F-statistic of 2.5436 (df = 1), implying heterogeneity in variances. Conscientiousness displayed a moderate F-statistic of 1.6117 (df = 1), indicating potential variability among group variances. "Neuroticism" demonstrated the highest F-statistic of 3.2845 (df = 1), implying notable differences in variances. Conversely, "Openness to the experience" exhibited a minimal F-statistic of 0.0545 (df = 1), suggesting consistent variances across groups (See Table 3).

Table 3.

Homogeneity of Variances Test (Levene's)

	F	df1
Extraversion	2.2953	1
Agreeableness	2.5436	1
Conscientiousness	1.6117	1
Neuroticism	3.2845	1
Openness to the experience"	0.0545	1

In this context, the data support the null hypothesis in both cases, signifying the assumption of normality and homogeneity. Consequently, the One-Way ANOVA using the Fisher is corroborated.

A Tukey Post Hoc test found that for extraversion, there was a notable mean difference between the male and female groups. Specifically, the mean difference for males is -0.583 compared to females, indicating a lower "Extraversion" score among males. However, the p-value associated with this difference is 0.667, rendering it non-significant. This implies that the observed discrepancy between genders in "Extraversion" levels is not statistically significant. Additionally, the post-hoc test for males alone indicates no significant mean difference. It is crucial to note that the provided significance levels (* $p < .05$, ** $p < .01$, *** $p < .001$) suggest that, in this instance, the p-value of 0.667 exceeds the typical significance threshold of 0.05, further supporting the conclusion that the gender-based disparity in "Extraversion" levels is not statistically significant based on the conducted analysis using Jamovi 2.6.13.

A difference of -2.58 between the male and female groups was found for Agreeableness. However, the associated p-value is 0.071, indicating that this difference is not statistically significant at the conventional significance level of 0.05. The non-significant p-value suggests insufficient evidence to reject the null hypothesis, implying that the mean difference in Agreeableness between genders may be due to random variation rather than a genuine

difference. It is important to note that the notation * $p < .05$ is not applicable in this instance, reinforcing the non-significant nature of the observed results.

For Conscientiousness, the results showed a mean difference of -0.202 between the two genders. However, the associated p-value is 0.892, exceeding the conventional significance threshold of 0.05. No statistically significant difference in Conscientiousness scores was found between males and females. Observed variations are likely due to chance.

In other words, this indicates a lack of statistically significant differences within this group concerning these personality traits.

However, differential, and significant values are observed, particularly in Neuroticism ($p < -4.06^*$) and "Openness to the experience" to the experience ($p < -4.82^{**}$) are higher in males. For the first variable, a notable difference of -4.06 was observed between the male and female categories, and the associated p-value is 0.050. The significance level is just on the borderline of conventional thresholds ($p < .05$). While the result is considered significant, it is crucial to exercise caution due to its proximity to the significance threshold. The asterisk (*) notation denotes statistical significance at the 0.05 level. Consequently, the findings suggest a noteworthy difference in Neuroticism scores between genders, but further scrutiny and consideration of effect size may be warranted given the marginal significance level.

In addition, in the variable "Openness to the experience," a substantial mean difference of -4.82 is evident between the male and female categories, and the associated p-value is 0.005, falling below the conventional significance threshold of 0.05. The asterisk (*) notation, indicating statistical significance at the 0.05 level, emphasizes the robustness of this result. The findings suggest a significant disparity in "Openness to the experience" scores between genders, implying that the observed difference is unlikely to have occurred by random chance. The low p-value strengthens the evidence supporting rejecting the null hypothesis, underscoring the meaningfulness of the observed gender-based difference in "Openness to the experience."

One-Way ANOVA - Competencies

In addition to personality traits, competencies were assessed based on normality and homogeneity criteria, considering gender. The analysis revealed homogeneity across all competencies.

The variables were tested for normality and homogeneity. All variables were homogenous across genders, except for "Sociability," which was not normally distributed ($p < 0.05$, specifically 0.008). Therefore, the Shapiro-Wilk test was used (see Table 4).

Table 4.
Normality Test (Shapiro-Wilk)

	W	p
Proactivity	0. 989	0 .248
Leadership	0. 993	0 .611
Sociability	0. 976	0 .008
Work Quality	0. 992	0 .503
Change Management	0. 983	0 .055

Table 4.
Normality Test (Shapiro-Wilk)

	W	p
Emotional Management	0.988	0.192

Note. A low p-value suggests a violation of the assumption of normality.

Similarly, in Table 5, the homogeneity of variance is analyzed, focusing on the competency of 'Emotion Management,' which displays variability (0.024). The Levene's Test was employed to evaluate this aspect.

Table 5.
Homogeneity of Variances Test (Levene's)

	F	d f1	d f2	p
Proactivity				0.437
Leadership				0.190
Sociability				0.182
Work Quality				0.131
Change Management				0.358
Emotional Management				0.024

Similarly, through the Post Hoc test, it is evident that the competencies of Proactivity, Leadership, Work Quality, and Change Management exhibit normality and homogeneity in both men and women, as they present values greater than $p > 0.05$ (0.4, 0.8, 0.66, and 0.06, respectively).

Likewise, significant differences are observed in the 'Sociability' competency, as indicated by the Kruskal-Wallis statistic with values less than $p < 0.05$ (0.022) and Games-Howell Post-Hoc (0.018). Consequently, it is concluded that, within this group, the male gender demonstrates superior sociability competency compared to the female gender.

Contrastingly, no significant differences are evident between men and women in the 'Emotion Management' competency, with a p-value greater than 0.05 (0.336) according to the Kruskal-Wallis statistic.

For the remaining competencies, One-Way ANOVA is analyzed using the Fisher statistic (See Table 6)."

Table 6.

One-way ANOVA (Fisher's)

	F	d f1	d f2	p
Proactivity			1 53	0. 463
Leadership			1 53	0. 819
Sociability			1 53	0. 019
Work Quality			1 53	0. 665
Change Management			1 53	0. 060
Emotional Management			1 53	0. 195

To further analyze the data, correlations between variables were examined. The analysis revealed significant relationships between most competencies and personality traits assessed by the BFQ-2 test, as shown in Table 7.

Table 7.
Correlation Matrix between Personality Traits and Competencies.

		Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness to the experience	Leadership	Sociability	Work Quality	Emotional Management	Change Management	Proactivity
Extraversion	Spearman's rho	—										
	p-value	—										
Agreeableness	Spearman's rho	0.273 ***	—									
	p-value	< .001	—									
Conscientiousness	Spearman's rho	0.459 ***	0.474 ***	—								
	p-value	< .001	< .001	—								
Neuroticism	Spearman's rho	0.090	0.408 ***	0.342 ***	—							
	p-value	0.266	< .001	< .001	—							
Openness to the experience	Spearman's rho	0.427 ***	0.556 ***	0.604 ***	0.504 ***	—						
	p-value	< .001	< .001	< .001	< .001	—						
Leadership	Spearman's rho	0.776 ***	0.469 ***	0.677 ***	0.236 **	0.608 ***	—					
	p-value	< .001	< .001	< .001	0.003	< .001	—					
Sociability	Spearman's rho	0.270 ***	0.961 ***	0.509 ***	0.534 ***	0.644 ***	0.522 ***	—				
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	—				
Work Quality	Spearman's rho	0.566 ***	0.556 ***	0.931 ***	0.288 ***	0.668 ***	0.809 ***	0.598 ***	—			
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	< .001	—			
Emotional Management	Spearman's rho	0.069	0.443 ***	0.427 ***	0.902 ***	0.486 ***	0.348 ***	0.584 ***	0.422 ***	—		
	p-value	0.396	< .001	< .001	< .001	< .001	< .001	< .001	< .001	—		
Change Management	Spearman's rho	0.491 ***	0.612 ***	0.632 ***	0.437 ***	0.947 ***	0.702 ***	0.703 ***	0.730 ***	0.485 ***	—	
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	—	
Proactivity	Spearman's rho	0.765 ***	0.678 ***	0.646 ***	0.322 ***	0.736 ***	0.789 ***	0.721 ***	0.777 ***	0.391 ***	0.845 ***	—
	p-value	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	—

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Strong, significant correlations ($p < .01$) were found between Work Quality and Leadership, Sociability, and Conscientiousness (Tenacity in the text). Change Management also showed a strong, significant correlation with Openness to Experience (Open-mindedness in the

text). However, no significant relationships were observed between Energy and Emotional Stability ($p = 0.26$), nor between Emotion Management and Energy ($p = 0.39$).

Discussion and Conclusion

The BFQ-2 assessment of UNAD teachers' personalities revealed "agreeableness" as a dominant trait. Among competencies, sociability and change management were prominent. These virtual teachers demonstrated sensitivity, openness to experience, understanding of others, and a willingness to support others. Their empathy suggests strong teamwork and collaboration skills. Their change management abilities indicate they can address challenges with a broad perspective, adaptably offering innovative solutions and demonstrating negotiation skills.

Key competencies among the teachers included change management, sociability, and work quality, all of which correlate with better job performance. Proactivity, linked to autonomous action, aligns with research by Chen, Bao, and Gao (2021), suggesting an ability to manage stress, utilize resources, and seek opportunities. The teachers' apparent lack of avoidance behaviors suggests they may be well-suited to mediating virtual teaching and learning.

Both male and female educators demonstrated Proactivity, Leadership, and high-quality work management, including planning, organization, and monitoring. Change management competency, facilitating problem-solving and adaptability, was also apparent. These competencies enable teachers to develop students' skills in using technology effectively, promoting creativity, curiosity, and proactivity through digital platforms, as suggested by Guevara, Cedeño, Escobar, and Medina (2021).

Both male and female teachers showed consistent traits of agreeableness, openness to experience, conscientiousness (Tenacity in the text), and emotional management, all linked to professional success and job satisfaction. Males showed higher levels of neuroticism, open-mindedness, and sociability. The connection between personality, learning styles, and job satisfaction highlights the need for adaptable teaching (Li et al., 2021). These teachers, with their specific traits, are expected to foster student autonomy, problem-solving, adaptability, and self-directed learning.

Significant associations were found between competencies and personality traits, supporting Caprara, Barbaranelli, Borgogni, and Vecchione (2018). Proactivity, Leadership, Sociability, Work Quality, Change Management, and Emotional Management correlated strongly with Extraversion, Agreeableness, Conscientiousness (Tenacity), Neuroticism, and Openness to Experience (Open-mindedness). Work Quality was strongly linked to Leadership, Sociability, Conscientiousness, Change Management, and Openness to Experience. However, no significant relationships existed between Extraversion and Neuroticism, nor between Emotional Management and Extraversion.

This study encourages reflection on the relationship between personality and competencies in virtual education, suggesting proposals to strengthen teaching and learning. Further research with diverse virtual pedagogical models is recommended. Integrating teachers' technological, pedagogical, and academic skills requires considering personality and emotional states that support their teaching roles, including navigating contextual challenges and adapting to diverse student characteristics and learning styles.

This study emphasizes the significant role of teacher personality in shaping competencies and effectiveness in virtual education. The prevalence of agreeableness, sociability, and openness to experience among UNAD teachers highlights the importance of these traits in fostering collaborative learning and managing change. The findings suggest a

need for professional development that not only improves digital and pedagogical skills but also nurtures personality traits that support effective teaching and student engagement.

Therefore, the recommendation for both educational institutions of higher education and teachers themselves, strengthen their digital and didactic competencies, which promote learning to learn in all disciplinary scenarios that lead to training professionals who meet global needs, enhancing the personality traits and skills of each teacher in favor of student learning.

In conclusion, this study highlights the importance of teachers' personality traits (like Agreeableness and Openness to Experience) and transversal skills for student success. The significant correlations between personality and competencies underscore the need to consider individual teacher characteristics when designing effective virtual teaching strategies. Understanding these factors can inform tailored training and support to enhance teaching effectiveness in virtual higher education.

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Normative data for the Pittsburgh Sleep Quality Index Scale (PSQI) in a Honduran university population

Datos normativos para la Escala Pittsburgh Sleep Quality Index (PSQI) en población universitaria hondureña

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ABSTRACT

Keywords:

Sleep quality, normative data, PSQI scale, psychometric properties, honduran university students.

Previous studies have demonstrated the existence of pathologies that affect sleep quality in the university population. For this reason, sleep problems have been studied in Honduras using the Pittsburgh Sleep Quality Index Scale (PSQI) in its Spanish version, but there are no normative data that can be used in settings. clinical. The main objective of this study was the creation of normative data using percentiles and Z scores for the interpretation of the PSQI scale. A cross-sectional correlated study was carried out in the period from February to March 2024, using stratified probabilistic sampling, with a total of 1050 participants, institutionalized in public university centers in the northern region of Honduras. The main descriptive statistics and psychometric properties of the scale were analyzed; McDonald's omega $\Omega = 0.88$ and Cronbach's alpha $\alpha = 0.83$, and several models were tested using confirmatory factor analysis (CFA), the hierarchical model was the one that presented the best fit indices with a CFI = .962; NFI = .967; TLI = .954; SRMR = .054; RMSEA = .051, and finally normative data adjusted to the sociodemographic and clinical characteristics of the sample were generated. The PSQI scale presented adequate psychometric properties, and the normative data generated could be used in decisions making regarding the sleep health of college students.

RESUMEN

Palabras clave:

Calidad del sueño, datos normativos, escala PSQI, propiedades psicométrica, estudiantes universitarios hondureños.

En estudios previos se ha demostrado la existencia de patologías que afectan la calidad del sueño en población universitaria. Por esta razón, en Honduras se han estudiado los problemas del sueño mediante la utilización de la escala Pittsburgh Sleep Quality Index (PSQI, por sus siglas en inglés) en su versión castellana, pero no existen datos normativos que puedan usarse en entornos clínicos. El objetivo principal de este estudio fue la creación de datos normativos mediante percentiles y puntuaciones Z para la interpretación de la escala PSQI. Se realizó un estudio correlacionado de corte transversal en el periodo de febrero a marzo del año 2024, utilizando un muestreo probabilístico estratificado, con un total de 1050 participantes, institucionalizados en centros universitarios públicos de la región norte de Honduras. Se analizaron los principales estadísticos descriptivos y las propiedades psicométricas de la escala; omega de McDonald $\Omega = 0.88$ y un alpha de Cronbach $\alpha = 0.83$, y se probaron varios modelos mediante el análisis factorial confirmatorio

(AFC), el modelo jerárquico fue el que presentó mejores índices de ajuste con un CFI = .962; NFI = .967; TLI = .954; SRMR = .054; RMSEA = .051, y por último se generaron datos normativos ajustados a las características sociodemográficas y clínicas de la muestra. La escala PSQI presentó propiedades psicométricas adecuadas, y los datos normativos generados podrían ser utilizados en la toma de decisiones con respecto a la salud del sueño de los estudiantes.

Introduction

The quality of sleep has been defined by several authors as the act of sleeping well, especially during the night period in order to after a good rest, have an optimal functioning in the daytime period, and being an indispensable function for life is an important component that determines good health, this fact is conducive to an optimal quality of life (Becerra et al., 2018; Corredor Gamba and Polanía Robayo, 2020; Gellis and Lichstein, 2009; Murawski et al., 2018).

Escobar & Liendo, 2012; Resnick et al., 2003; Sato-Shimokawara et al., 2016; Virend and Somers, 2005 as cited in Becerra (2018) indicate to us that having an adequate quality of sleep will be significantly reflected in an improvement of the quality of life, since this reduces the probability of suffering certain problems such as cardiovascular, neuroendocrine, as well as cognitive and emotional.

On the other hand, sleep has been recognized as an essential factor of great importance in the lives of human beings, since it directly influences physiological and intellectual development and interpersonal relationships, through which people reach a full balance (Becerra et al., 2018; Rebok and Daray, 2024). Likewise, for Echeverry and Escobar, 2009 as cited in Becerra et al., (2018) the study of sleep is complex and is still in its infancy, but despite this, it has been determined that sleep and its quality are related to various factors such as age, sex, lifestyle, as well as the state of physical and mental health.

It should be taken into account that some changes in sleep physiology are accompanied by individual characteristics, such as bedtime and length of sleep. A person is said to be in good sleep health when there is adequate duration, efficiency is sufficient, and the level of satisfaction with sleep makes the person feel capable and fully functional throughout their day (Murawski et al., 2018). In line with the above, it can be said that the quality of sleep is not simply limited to circumstances, or physical characteristics of the person, since, it is also related to their daily life, development and performance (Becerra et al., 2018; Escobar Córdoba and Eslava-Schmalbach J., 2005).

College students are exposed to suffer more frequently from sleep problems (Hershner S.D. and Chervin R.D., 2014 as cited in Suardiaz-Muro et al., 2020). In this population some specific factors are added, on the one hand, the academic demands inherent to university studies, which involve more dedication and effort than in previous stages, and, on the other hand, non-academic ones such as working to support oneself, which involve added effort, and added to this the use of psychotropic substances and the abuse of modern technologies are also factors to be taken into account in the onset of such sleep problems (Suardiaz-Muro et al., 2020).

Because sleep influences areas such as learning, memorization capacity, some physiological processes, and the restoration of collected information, it is important to achieve and maintain a good quality of sleep in college students. However, most of them must meet academic demands that force them to extend their waking period frequently, which has an impact on their sleep-wake cycle, thus reducing the rest time they require every night (Sabillón Maldonado, L. N. et al., 2020).

The Pittsburgh Sleep Quality Index (PSQI) was used for this study, since this instrument is used to diagnose sleep quality and sleep disorders in clinical populations as well as in other research protocols in diverse populations. With young adults it has been used in some studies such as in the creation of the scale by Buysse and his collaborators, and in the adaptation of the scale in its Spanish version, among others (Royuela Rico and Macías Fernández, 1997). This scale has also been adapted in a Latin American context, specifically in Colombia (Escobar Córdoba, 2005).

The PSQI instrument consists of self-report derived questions, which in turn form seven clinically derived components of sleep difficulties; subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medications, and daytime dysfunction. In this study, the psychometric properties were analyzed for the sample and it was determined that they are adequate and also similar to those obtained in the creation of the scale, in the adaptation to Spanish and in the adaptation in Colombia (Buysse et al., 1989; Escobar, 2005; Royuela Rico and Macías Fernández, 1997).

This questionnaire has been widely used in various regions of the world and in diverse populations. In Paraguay, a study was conducted using the ICSP questionnaire to determine the quality of sleep of medical students at the Universidad del Pacifico. A total of 158 students participated in the study, 77.08% of whom were female (n=123). This study identified a frequency of poor sleepers of 56.96%, 21.53% used hypnotic drugs to sleep (34/158). The study concludes that in this sample the number of poor sleepers is very high, proposing some strategies to improve the quality of their sleep (Núñez Bael et al., 2024).

In Mexico, a study was conducted to determine the factorial structure and internal consistency of the ICSP in university athletes in order to evaluate the psychometric properties of the instrument. The study was a non-experimental cross-sectional study with 98 college athletes aged 17-25 years. The internal consistency and homogeneity of the instrument were analyzed, as well as the AFE and the AFC. Reliability showed a Cronbach's alpha of 0.79, and the AFC provided an adapted unidimensional model, eliminating the medication use and habitual sleep efficiency components (Favela-Ramirez et al., 2022).

Sabillón Maldonado et al., (2020) conducted a study in a Honduran population with 317 students with the aim of generating evidence on sleep quality and excessive daytime sleepiness in medical and surgical students, in the third academic term of 2019. We worked with two instruments applied simultaneously, the Pittsburgh Sleep Quality Index (PSQI) and the Epworth Sleepiness Scale. We worked with 195 women (61.5%) and 122 men (38.5%), whose mean age was 19.5 years for both. The average ICSP was 9.61, within the range of poor sleep quality that warrants medical attention and treatment.

There were no significant differences in the ratings by gender. A bilateral significance level for the ICSP of $p = 0.405$ was generated, accepting the null hypothesis, since there were no significant differences in the scores of both sexes. Finally, an important conclusion is that it was demonstrated that there are indeed problems with respect to sleep quality in medical and surgical students, which could have repercussions on their work as licensed professionals in the future (Sabillón Maldonado et al., 2020).

Bustamante-Ara et al. (2020) conducted a study in a Chilean population with 278 university students, with the aim of evaluating the association between academic performance, physical activity and sleep quality, and also to determine the existing differences according to gender in Physical Education Pedagogy students during the covid-19 pandemic. The sleep quality of the undergraduates scored 8.4 ± 3.3 points, which was 3 points above the criteria for good baseline sleep quality. In this aspect, women reported a higher score compared to men ($p = 0.004$).

In the US population in the state of California, a study was conducted to evaluate the factor structure of the Pittsburgh Sleep Quality Index (PSQI). The sample included 107 elderly patients with rheumatoid arthritis. The AFC evaluated one-, two- and three-factor models. The unidimensional model yielded a poor fit to the data obtained from the sample. On the other hand, the three-factor model obtained the best fit indices, being the two-factor model; sleep efficiency and perceived sleep quality, the one that presented the best psychometric properties since its fit indices were very good, and likewise the individual reliability was acceptable (Perry et al., 2014).

Lezcano H. et al., (2014) conducted a study in Panama Determining the characteristics and quality of sleep in medical students at the University of Panama. This study was descriptive, cross-sectional, and consisted of 290 students. Data collection was performed using the Pittsburgh Sleep Quality Index (PSQI). A total of 56.6% (164) were female. This study concluded that most of the subjects included in the sample are poor sleepers.

In 2005 Escobar-Córdoba and Eslava-Schmalbach carried out the Colombian validation of the Pittsburgh Sleep Quality Index (PSQI), taken from the original article and the Spanish version. To this end, the instrument was reviewed by experts and subsequently two pilot studies were carried out with 104 subjects in the city of Bogotá between 6 and 90 years of age. It is important to note that modifications were made to questions 5, 8, 9 and 10 of the Spanish version, although it is already an adaptation in a common language, it presented terms that did not have the same interpretation in local conditions.

In accordance with studies previously conducted in the Latin American region with university students and specifically with the study conducted by Sabillón Maldonado et al. (2020) in a university in the northern part of Honduras using the PSQI, in which medical students between 18 and 25 years of age of both sexes participated, it was decided to conduct a study with this age group with the purpose of studying this problem in greater depth. For all these reasons, the present study was carried out with a sample of institutionalized students in university centers, with the main objective of creating normative data according to the influential variables identified with the multiple linear regression technique.

Method

Research Design

This study according to its approach is quantitative, because it presents a set of processes, and at the same time involves the collection of data in order to test previously established hypotheses based on numerical measurement and statistical analysis, with the aim of testing theories (Hernández Sampieri et al., 2014). According to its depth it is of a correlational type, since it measures the degree of relationship or degree of association that exists between the sleep quality of the subjects included in the sample and the sociodemographic variables (Hernández Sampieri et al., 2014).

According to its temporality, it is of cross-sectional type, because the data collection was performed by applying the Pittsburgh Sleep Quality Index (PSQI) scale at a single time to estimate the quality of sleep, or sleep problems affecting the target population in the last month, likewise the prevalence of sleep disorders of the participants included in the sample was determined. (Hernández Sampieri et al., 2014).

According to the type of source, this is a field study, because it was carried out by applying a questionnaire directly to the participants from whom the information was obtained. For its purpose it is applied, since its ultimate aim was to determine the existence of sleep quality from the application of the Pittsburgh Sleep Quality Index (PSQI) instrument, in order to establish criteria to assess this variable (Hernández Sampieri et al., 2014).

Participants

The sample consisted of 1050 participants, where 35.33% identified themselves as men and 64.67% as women, with an age range between 17 and 60 years ($M = 24.76$; $SD = 8.66$). The subjects included in the sample are students institutionalized in centers of the National Autonomous University of Honduras (UNAH), northern zone. Of the participants, 22.67% were married, and 77.33% were unmarried. A total of 8.67% were pursuing graduate studies, and 91.33% were pursuing undergraduate studies. 5.05% were enrolled in UNAH/Tela, 5.33% in

UNAH/La Ceiba, 8.67% in UNAH/El Progreso, and 80.95% in UNAH/Cortés. Stratified probability sampling was used for this study.

Instrument

The Pittsburgh Sleep Quality Index (PSQI) originally developed by Buysse et al. (1989) is a Likert-type scale that assesses qualitative and quantitative aspects of sleep quality in the month prior to its application. In the original publication, the scale was reported to have an internal consistency (Cronbach's alpha) of 0.83. Cut-off point 5 correctly identified 88.5% (131/148) of all patients and controls ($\kappa = 0.75$), ($p = 0.001$), with a sensitivity of 89.6%, and specificity of 86.5%.

It was adapted to Spanish by Royuela Rico and Macías Fernández (1997) with the aim of establishing its clinimetric properties and validating it in the Spanish population. Good psychometric results were obtained both in the sample that included young people and in the segment of older adults, which makes this instrument suitable for epidemiological and clinical research on sleep disorders. The Spanish version of the PSQI instrument had a Cronbach's alpha internal consistency of 0.81; the Kappa coefficient was 0.61; the sensitivity was 88.6%; the specificity was 74.9%; and the predictive value of the positive test was 80.7 (p. 81).

This questionnaire was adapted in Colombia by Escobar Córdoba, (2005) taking the original questionnaire (PSQI) and the Spanish validation of the Pittsburgh Sleep Quality Index (PSQI). A first expert consensus was then reached with five renowned physicians specialized in sleep disorders to create the Colombian version of the ICSP-VC. Subsequently, it was applied as a pilot test for the respective linguistic and cultural validation. The criterion and concurrent validity of the test showed that the ICSP-VC is able to find differences in its scores between subjects with clinical characteristics of poor sleepers, hypnotic users and older adults (Escobar Córdoba, 2005).

The ICSP-VC is a short, simple and well-accepted questionnaire that identifies 'good' and 'bad' sleepers, does not provide a diagnosis and serves for screening the subjects included in the sample. In psychiatric patients it can identify concomitant sleep disorders. It is also important to bear in mind that the results obtained guide the physician to the most disturbed aspects of sleep and the need to seek help. In addition, it serves to monitor the clinical course of sleep disorders, the influence on the course of mental entities and the response to treatment (Escobar Córdoba, 2005).

The instrument is composed of 24 questions, 19 of which are answered by the subject and 5 by the roommate. The first 4 (bedtime, or how long the subject thinks he/she actually sleeps during the night) should be answered concretely. The remaining 20, including those to be answered by the roommate, which ask about aspects such as the quality of sleep the subject claims to have, or the frequency of certain events (difficulties in falling asleep or the presence of nightmares) are answered using an ordinal scale with four grades. The time to answer it is 5 to 10 minutes (Royuela Rico and Macías Fernández, 1997).

The scale is composed of seven components; subjective sleep quality (the number of hours a person considers that he/she has slept), sleep latency (the period in minutes, which elapses from the moment the individual goes to bed and the onset of sleep), sleep duration (actual hours slept), habitual sleep efficiency (the percentage between the actual number of hours slept and the number of hours a person stays in bed), sleep disturbances (difficulty in sleeping), sleep disturbances (difficulty in falling asleep), the use of hypnotic drugs, and daytime dysfunction (Royuela Rico and Macías Fernández, 1997).

According to Royuela Rico and Macías Fernández, (1997) to correct this questionnaire, only the first 18 questions that correspond to the items answered by the subject under study are evaluated. The question that asks whether the subject sleeps alone or in company, and those asked to the bed or roommate are not scored, and only serve as information on aspects such as

the frequency of snoring, apneas, convulsions, or confusional episodes. The correction of each questionnaire takes approximately five minutes.

Seven scores are obtained from the corrections, each of these components receiving a discrete score ranging from 0 to 3. A score of 0 indicates no sleep problems, while a score of 3 indicates serious problems. The sum of the scores obtained in each of the partial components generates a total score (PT), which can range from 0 to 21. According to Buysse, et al., a total score (PT) equal to 5 is the cut-off point, therefore a score equal to or below 5 is the indicator of good sleepers and above 5 bad sleepers. In this study we used the version adapted to Spanish (Royuela Rico and Macías Fernández, 1997).

Procedure

The study conformed to the ethical guidelines of the Helsinki declaration of the world medical association (World Medical Association, 2013, Standard 25). Before beginning the interview and to ensure the anonymity, confidentiality, consent and voluntariness of the participants, they were provided with an informed consent form, which they had to sign as a sign of conformity. If participants were unable to give their consent, they were excluded from participating in the study.

Data were collected by applying the Pittsburgh Sleep Quality Index (PSQI) scale in February and March 2024. The instrument was applied in self-report format, both in person and online. The time for the application of the questionnaire was between 5 to 10 minutes.

For the study of the data, a frequency analysis was performed and the main descriptive statistics were applied. In addition, reliability analyses were performed for internal consistency (Cronbach's alpha and McDonald's omega) to determine the good performance of the items and validity analyses to determine the factorial structure of the test by means of confirmatory factor analysis (CFA), and finally, normative data were created in order to characterize the sample and describe the variables studied.

Data Analysis

The Rstudio program was used to perform all statistical calculations, and the Statistical Package for Social Sciences (SPSS) was used to compare the results. A calculator was also created to obtain the exact percentile using the total score of the PSQI scale, which was performed in Microsoft Excel.

Confirmatory factor analysis (CFA) calculation was performed, to obtain the model specification, identification (factor structure), parameter estimation, model fits (NFI, TLI, CFI, RMSR, RMSEA), and finally interpretations of each model were performed (Bahri Yusoff, 2019). The fit indices were calculated using the Weighted Least Square Mean and Variance estimator (WLSMV). Reliability was tested for internal consistency, using Cronbach's alpha coefficient, and McDonald's omega for each factor and the PSQI total score (Bahri Yusoff, 2019; Sattler, 2010).

To determine the normative data, the best explanatory model for the data was identified. Age and sex were included as predictor variables for the final model, considering a value of $p \leq 0.05$ as acceptable. The mixed (both) elimination system was used to incorporate the variables in the model.

For the establishment of the normative data for the Pittsburgh Sleep Quality Index (PSQI) scale, the regression analyses performed tested the assumptions of: Multicollinearity; $VIF < 10$, presence of influential values; by Cook's distance test, considering a value < 1 acceptable. Homoscedasticity; using the Breusch-Pagan test and a value of $p \geq 0.05$ was considered acceptable. Normality; using the Lilliefors test (based on Kolmogorov-Smirnov), taking a value of $p \geq 0.05$ as acceptable.

The normative data for the PSQI were established using the linear regression methodology and the standard deviation of the residual values of the model, proposed by Van

Breukelen and Vlaeyen, (2005); Van der Elst et al., (2012) this allows generating normative data adjusted to sociodemographic and clinical variables, in four steps:

1. The predictive value (\hat{Y}_i) of the score was calculated from the beta parameters (B), i.e. the predictors established in the final model with the formula: $\hat{Y}_i = B_0 + B_1X_1 + B_2X_2 + \dots B_kX_k$.

2. The residual value is calculated by subtracting the predictive value (\hat{Y}_i) from the direct PSQI score, according to the following formula: $ei = Y_i - \hat{Y}_i$.

3. The residual value obtained (z_i) is standardized by dividing the residual value (ei) by the residual standard deviation (DTe), $z_i = ei/DTe$.

4. Using the standard normal cumulative distribution, we proceeded to calculate the exact percentile value corresponding to the previously calculated (Z) value, or through the empirical cumulative function of the standardized residuals.

Results

Descriptive statistics were calculated for the seven components and total score of the Pittsburgh Sleep Quality Index (PSQI) scale. It was found that the mean of the components obtained values of 0.43 and 1.23, the component with the highest score was, sleep latency (1.23 ± 0.96), and the lowest was the use of hypnotics (0.43 ± 0.93). The range obtained a value of 3 for the first six components and their asymmetries were positive, while for the daytime dysfunction component the range was 2 and the asymmetry was negative. The total PSQI presented a mean of (7.44 ± 3.37), a range of 17, and a positive skewness. The kurtosis was positive for three of the factors and negative for four of them and the total score.

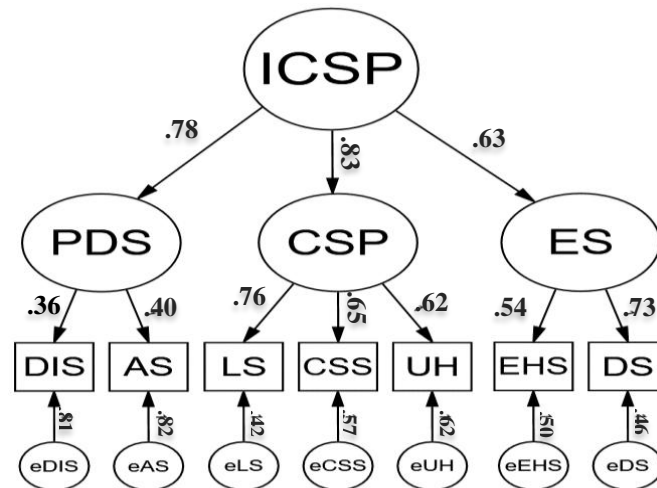
Structural Validity

The CFA was performed to test models tested in other studies. The unidimensional model, unidimensional model adapted by eliminating component 6 (use of hypnotics), correlated model with two main factors and the hierarchical model were tested. The hierarchical model was the best fit for the PSQI scale in the sample studied with Honduran university students; all components had standardized coefficients and significant. In the hierarchical model, a main factor called the Pittsburgh Sleep Quality Index (PSQI) was proposed, with 3 second-order factors: sleep efficiency (SE), PSQ = perceived sleep quality; SDP = daily sleep disturbances.

The 7 components were included in this model: sleep duration (SD), habitual sleep efficiency (EHS), hypnotic use (UH), subjective sleep quality (SSQ), sleep latency (SL), sleep disturbances (SD), and daytime sleep dysfunction (DSD). The model fit indices were calculated using the Weighted Least Square Mean and Variance (WLSMV) estimator, showing adequate values (see Figure 1).

Figure 1

Hierarchical scale model (PSQI) with college students.



Note. All standardized coefficients and error values significant, $p < .05$, and adequate factor loadings ≥ 0.36 for all scale components.

Table 1
Fit indices of the models tested.

Adjustment Ratios	Models			
	A factor	An adapted factor	Correlated	Hierarchical
X^2 (df)	128.684 (14)	110.675 (9)	88.009 (12)	87.120 (11)
P	.000	.000	.000	.000
IFC	.943	.932	.962	.962
NFI	.937	.927	.957	.967
TLI	.915	.887	.934	.954
SRMR	.079	.071	.064	.054
RMSEA (90% CI)	.088	.104	.078	.051

Note. X^2 = chi-square; df = degrees of freedom; CFI = comparative fit index; NFI = normed fit index; TLI = Tucker-Lewis index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation; CI = confidence interval.

The fit indices for the models tested had to meet certain criteria to determine if they are adequate. An adequate CFI, NFI and TLI should have presented values ≥ 0.90 , the RMSEA and SRMR < 0.08 (Kline, 2016; Tabachnick and Fidell, 2014 as cited in Maldonado, 2019). The one-factor model presented adequate CFI, NFI, TLI and SRMR while the RMSEA did not fit, the fitted one-factor model showed acceptable values of CFI, NFI, SRMR, but TLI and RMSEA did not fit. In the correlated model of the items with two main factors (sleep efficiency and perceived sleep quality), it revealed adequate values for almost all the fit indices, with the exception of RMSEA.

A hierarchical model of the items with three factors (sleep efficiency, perceived sleep quality and daily sleep disturbances) was also considered, which revealed adequate fit indices. Reporting adequate factor loadings for all components $> .30$. The habitual sleep efficiency factor showed a mean equal to $M = 0.584$ and $SD = 0.170$, the perceived sleep quality factor showed $M = 0.539$ and $SD = 0.108$, and the daily sleep disturbances factor showed $M = 0.868$ and $SD = 0.063$.

Reliability

Reliability was calculated by internal consistency using Cronbach's alpha and McDonald's omega, with the objective of verifying whether the items and each factor of the scale presented an acceptable degree of correlation with the total scores. For this purpose, internal consistency reliability was calculated by means of a polychoric matrix of the items. Cronbach's alpha coefficient for the total score was $\alpha = 0.83$, and the McDonald omega total was $\Omega = 0.88$.

Subsequently, Cronbach's alpha and McDonald's omega were calculated for each second-order factor of the hierarchical model that was previously tested with confirmatory factor analysis (CFA). The sleep efficiency factor obtained values of ($\Omega = 0.82$ and $\alpha = 0.73$). On the other hand, the daily sleep disturbances factor yielded the highest scores, a McDonald omega of $\Omega = 0.88$, and a Cronbach's alpha of $\alpha = 0.83$; while the perceived sleep quality factor showed the lowest values ($\Omega = 0.76$ and $\alpha = 0.73$).

Regulatory Data

The variables taken into account in the final model were age and sex, both variables presented a highly significant statistical significance with values ($p = 0$), and explained 14% of the variance of the total score of the PSQI scale (see Table 2). The multiple linear regression technique was determined as the best explanatory model.

The results showed that the variables centralized age, quadratic age, university center, education, and marital status were not predictor variables of the PSQI total score, since they did not show adequate statistical significance, obtaining p values > 0.05 , so they were discarded, and the multiple linear regression analysis was performed again, applying the mixed elimination procedure (both) for the incorporation of the variables in the analysis.

For the establishment of the PSQI normative data, the regression analyses performed tested the assumptions of: Multicollinearity; $VIF \leq 1.0045$, presence of influential values; by Cook's distance test $p = 0.009$, homoscedasticity; by Breusch-Pagan test $p = 0.121$. Normality; by Lilliefors test (based on Kolmogorov-Smirnov), $p = 0.071$. After checking for compliance with the assumptions, normative data were generated with the four-step procedure in order to provide the clinician with the ability to determine an accurate percentile for a participant who has a specific PSQI score.

The calculation of the exact percentile from the direct score of the PSQI was performed according to Van Breukelen and Vlaeyen, (2005), for which the following four steps should be followed:

Step 1. The predictive value (\hat{Y}_i) of the score is calculated from the beta parameters (β), established in the final multivariate model (see Table 2).

Step 2. The residual value (ei) is calculated by computing the difference between the direct score obtained (PSQI total score) (Y_i) and the predictive value calculated in step 1.

Step 3. The residual value (ei) obtained should be standardized (Z_i), using the standard deviation (SDe) of the model.

Step 4. The standardized value (Z_i) calculated in step 3 can be transformed to its corresponding percentile. A normative data calculator can be created for this model or a normal cumulative distribution. In this case it should be noted that the standardized residual values had a normal distribution.

Table 2

Final multivariate model for the Pittsburgh Sleep Quality Index (PSQI) score

Score	Predictors	β	Standard Error	t	p-value	R^2 Adjusted
Total score of the ICSP	Constant	5.5619	0.3460	16.074	< 2e-16 ***	0.147
	Age	0.0393	0.0118	3.339	0.000 ***	
	Sex	1.3993	0.2133	6.561	8.4e-11 ***	

Note. Predictor variables (age and sex), using the PSQI total score as the criterion variable.

Table 3 presents the normative data obtained according to gender, showing the percentile (Pc), the direct scale score (PD), and the Z scores. Women presented a larger sample

(679), with a mean for this group of (7 ± 3.37), while for the men's group the sample was (371) and a mean of (6 ± 3.36).

Table 3

Normative data of the Pittsburgh Sleep Quality Index (PSQI) scale as a function of gender

Pc	Men		Women		Pc
	PS	Z	PS	Z	
99	13 - 21	2.292	14 - 21	2.170	99
98	12	1.988	13	1.867	98
95	11	1.684	12	1.563	95
90	9 - 10	1.077	11	1.259	90
80	8	0.773	10	0.956	80
70	7	0.470	8 - 9	0.348	70
50	6	0.166	7	0.045	50
45	5	-0.138	6	-0.259	45
30	4	-0.441	5	-0.563	30
20	3	-0.745	4	-0.866	20
15	2	-1.960	3	-1.170	15
10	1	-2.263	1 - 2	-2.081	10
n	371		679		
M	6	0.242	7	0.272	
DE	3.36	1.448	3.37	1.321	

Note. n = sample, SD = standard deviation, M = mean.

Discussion and Conclusions

According to the results obtained by applying the Pittsburgh Sleep Quality Index (PSQI) scale, it was found that university students present sleep problems. Therefore, it is considered important for people who have sleep problems to take this into consideration in order to avoid major problems in the future. The above described is supported by previous studies that have shown the association between low sleep quality with different mental health disorders such as cognitive problems, psychiatric disorders such as anxiety and depression, as well as physical and cardiovascular risk, among others (Ferré-Masó A. et al., 2020).

Women presented higher means than men in the measurement of sleep quality variables, which evidences a greater deterioration of their sleep, although when analyzed without discriminating by gender, a mean of 7.44 was found in the total score of the ICSP scale. The above described indicates that in the evaluated subjects there is a need for attention and health counseling in order to improve habits related to sleep hygiene, being consistent with what has been reported in previous studies indicating the prevalence of some sleep problems in young people with a greater extent in women (Bustamante-Ara et al., 2020; Favela-Ramírez et al., 2022; Murawski et al., 2018; Núñez Bael et al., 2024; Royuela Rico et al., 2000; Sabillón Maldonado, L. N. et al., 2020).

It was concluded that in the sample studied with university students, the older they were, the greater the deterioration in the quality of their sleep, and it was also evidenced that married students presented greater complications with sleep health in comparison with single students. As for the variable's university center and level of schooling, there were no significant differences in the means.

After analyzing the structural validity of the Pittsburgh Sleep Quality Scale (PSQS) by confirmatory factor analysis (CFA), with the testing of four models, it was shown that the hierarchical model with 3 factors (sleep efficiency, perceived sleep quality and daily sleep

disturbances), presented appropriate fit indices, as did the study conducted in Belgium with patients with chronic fatigue index (Mariman et al., 2012). For this reason, this model is suggested for the assessment of sleep quality with the PSQI scale in Honduran university students.

Reliability was calculated using McDonald's omega and Cronbach's alpha for the hierarchical model, which showed adequate values for each factor and for the total score, as in the original study proposed by Buysse et al. (1989), the adaptation of the scale to the Spanish version by Royuela Rico and Macías Fernández (1997), and the Colombian adaptation by Escobar Cordoba (2005), which leads to the conclusion that the scale presents adequate psychometric properties for the sample of university students.

The Colombian version of the Pittsburgh Sleep Quality Index (PSQI) scale (ICSP-VC) was used for this study, which proved to be a useful tool for the clinician in making decisions regarding the sleep health of Honduran university students, since it not only takes into account clinical judgment, but also the opinion of the subjects themselves. After the respective psychometric analyses carried out throughout this study, it became evident that the use of this scale in the assessment of sleep quality in university students is adequate since it collects relevant information related to the health of the subjects included in the sample.

The main objective of this study was to generate normative data for the interpretation of the Pittsburgh Sleep Quality Index (PSQI) test in the Honduran university population, specifically in the centers of the Universidad Nacional Autónoma de Honduras (UNAH) northern zone. It was found that gender variables are related to test scores, which was determined by regression analysis to generate these normative data, which could be very useful in the assessment of sleep quality in university students. The variable that presented differences in the scores was gender (male, female), where the female group presented higher means.

The normative data obtained in this study are of significant value for practical application in both clinical and educational settings. In the clinical context, these data may serve as a point of comparison for early identification of sleep disturbances in college students. Mental health and sleep professionals could use these data as a reference for the purpose of detecting deviations from patterns considered normal in the target population, facilitating the implementation of personalized interventions.

In the educational setting, these results could serve as a basis for the design and implementation of programs to promote sleep hygiene in the university population. In line with the above, workshops led by health professionals could be implemented for the university population, with the purpose of providing strategies to regulate the circadian rhythm and reduce the use of screens before going to bed. Universities could institute information campaigns within their student welfare systems aimed at raising awareness of the relationship between sleep quality and academic performance.

The normative data generated in this study should be interpreted with the following limitations in mind; because the participants were students at the National Autonomous University of Honduras (UNAH) from four centers in the northern region of Honduras, the normative data presented should not be generalizable to non-university students who do not live in the region, persons under 17 years of age and over 60 years of age, or subjects whose native language is not Spanish. This study considered a sample of 1050 subjects, from university centers in the north of the country; for future studies, it is recommended that the geographic area be expanded to a national level and a larger sample be used.

This study did not include the relationship between psychiatric and physical pathologies and poor sleep quality in the academic context of university students; therefore, it is recommended that future researchers continue to investigate further to demonstrate the

association between these constructs. It is also recommended to consider the application of the Athens and Oviedo scales, using their scores, to specifically detect disorders such as insomnia that affect sleep quality to a greater extent. It would also be important to study the influence of music as a therapy to reduce stress and anxiety levels, and thus improve the quality of sleep in this population.

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RISK FACTORS FOR EMOTIONAL OVERLOAD IN UNPAID CAREGIVERS OF DEPENDENT AND DISABLED PEOPLE

Factores de riesgo de la sobrecarga emocional en personas cuidadoras no remunerados de personas en situación de dependencia y discapacidad

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ABSTRACT

Keywords:

Dependency, caregiver overload, primary caregiver, disability.

In Chile, an important part of the population requires care due to their level of disability and/or dependence. The main caregivers experience emotional overload, negatively affecting their quality of life. The aim of this study was to identify psychosocial risk factors of overload in caregivers of dependent and disabled people. The study design is non-experimental, cross-sectional, ex-post simple retrospective, causal-correlational. Data from 2,093 caregivers attending the Corporación de Rehabilitación Club de Leones Cruz del Sur, Chile, were analyzed. A total of 2,093 caregivers of people with disabilities and/or dependence who met the inclusion criteria were included and answered questions about sociodemographic information and the Zarit caregiver overload scale. The results show that caregiver age, caregiver sex, family structure and dependent's age group were significant predictors of caregiver emotional overload measured with the Zarit scale. The present study identified that the psychosocial variables that are related to overload are that the caregivers are women, that the older the caregivers are, the greater the risk of presenting overload, that they are part of single-parent families and that they take care of adults or older adults; to the extent that these variables are present, there is a greater risk of presenting emotional and/or physical overload.

RESUMEN

Palabras clave:

Dependencia, sobrecarga de la persona cuidadora, persona cuidadora no remunerada, discapacidad.

En Chile, parte importante de su población requiere de cuidados debido a su nivel de discapacidad y/o dependencia. Las personas cuidadoras principales, experimentan sobrecarga emocional, afectando negativamente su calidad de vida. Este estudio tuvo por objetivo identificar factores psicosociales de riesgo de sobrecarga en cuidadores de personas en situación de dependencia y discapacidad. El diseño del estudio es no experimental, transversal, ex - post - factos retrospectivos simples, de carácter causal-correlacional. Se analizaron 2,093 cuidadores de personas en situación de discapacidad y/o dependencia que cumplían

con los criterios de inclusión, quienes respondieron preguntas sobre información sociodemográfica y la escala de sobrecarga del cuidador Zarit que asisten a la Corporación de Rehabilitación Club de Leones Cruz del Sur, Chile. Los resultados muestran que la edad del cuidador, el sexo del cuidador, la estructura familiar y el grupo etario del dependiente fueron predictores significativos de la sobrecarga emocional de los cuidadores medidas con la escala Zarit. El presente estudio identificó que las variables psicosociales que se relacionan con la sobrecarga; es que sean cuidadoras mujeres, que a mayor edad de las cuidadoras mayor riesgo de presentar sobrecarga, que integren familias de tipo monomarentales y que cuiden adultos o adultos mayores, en la medida que estas variables estén presentes, existe mayor riesgo de presentar sobrecarga emocional y/o física.

Introduction

In Chile, about 18% of the adult population and 15% of the child and adolescent population have some degree of disability (Ministry of Social Development and Family, 2023a, 2023b). Likewise, 9.8% of the country's adult population is in a situation of dependency (Ministry of Social Development and Family, 2023c). Some estimates indicate that by 2050, the population pyramid will be inverted and historical percentages of people over the age of 80 will be reached (Instituto Nacional de Estadísticas, 2018), which implies a higher probability of people in a situation of disability and/or dependence in Chile.

Chile is very close to reaching indicators comparable to those of countries such as Japan or Sweden, where it has one of the highest life expectancies in the world (National Institute of Statistics, 2025). This demographic change requires the design and implementation of public policies that comprehensively address the emerging needs associated with population aging, including the care of dependent persons.

A significant proportion of this care falls on so-called unpaid primary caregivers, who are usually immediate family members who assume this responsibility without professional support or financial remuneration. Several studies have shown that this group faces high levels of physical and emotional burden, resulting in conditions such as musculoskeletal pain, chronic fatigue, social isolation, affective disorders, and symptoms of anxiety and depression (Lillo-Crespo et al., 2018; Schulz & Eden, 2016).

These impairments in the caregiver's health can have negative side effects on the quality of care provided to the dependent person. It has been documented that elevated levels of caregiver overload and stress may be associated with increased risk of neglect, abuse (verbal or physical), and even caregiving neglect (Dong, 2015). In turn, these situations profoundly affect the family environment, generating tensions, conflicts and dysfunctions that compromise the psychological well-being of all family members (Pinquart & Sörensen, 2003).

Therefore, it is urgent to advance in the generation of support systems for unpaid caregivers, including training, psychosocial support, respite networks and institutional recognition of their role, with the aim of safeguarding both their well-being and that of the people under their care.

The role of the unpaid primary caregiver of people with dependency and/or disability in this current scenario is therefore crucial. Caregivers take care of the basic needs and particular treatments required (cognitive stimulation, physical exercises, pharmacological treatments, among others) to improve the quality of life of dependent persons. This involves changes in the caregiver's daily routine that have an impact at the economic, health and family level (Bauer & Sousa-Poza, 2015), such as reduced hours of paid work, lower pay, health affectation, decreased quality of family life. Along with this, primary caregivers generally fulfill this role alone (Kahriman & Zaybak, 2015) and with little or no financial support from the state. This context generates pressure on caregivers that can lead to a psychological state called *caregiver emotional overload*, which involves the perception of feeling overwhelmed or overwhelmed on a physical and psychological level as a result of the tasks they perform (Silva et al., 2021). It is estimated that about 30% of caregivers present moderate to high levels of emotional overload (Gérain & Zech, 2021; Ilse et al., 2008) that are expressed in emotional problems such as isolation, overwhelm, exhaustion and chronic stress (Brummett et al., 2006; Domínguez et al., 2012; Flores et al., 2015).

In Chile there is a system of care for children and adults, but its presence in public policies is unclear and confusing for the community. Children and adolescents with disabilities or dependency often spend years in a special education system that provides them with both training and specific care.

Although progress has been made in policies for children and adolescents, there is a significant gap with respect to those aimed at adults with dependency. To address this, Chile has initiated a National Care Plan that includes a census of caregivers and the creation of long-stay facilities for the elderly in each commune, offering specialized care for people with loss of autonomy.

Local governments may develop strategies to support families with dependents, but they generally focus only on health services, without comprehensively addressing the various dimensions of care.

The main unpaid caregivers of people with disabilities and dependency perform a rather silent role, that is to say, they are not usually the focus of attention in the midst of this problem and are distanced from public policies as recipients of aid or benefits, subjecting themselves day after day to levels of emotional overload.

According to studies in Latin America, Montoya et al. (2018) in Colombia, found that the average age of caregivers is 46 years and that the majority are women (74%), with the kinship relationship being the most prevalent (36%), followed by spouse (26%), in addition, 66% do not have higher education, with 95% of caregivers presenting a certain degree of emotional overload, especially in those who did not present family support networks or public services.

So far, little is known about caregivers of people with disabilities and/or dependence in our country, and it is of utmost importance to know the psychosocial characteristics that may interfere in this role. According to a study conducted in Chile, most of the people who need support in caregiving receive it from their relatives, according to Yelincic and Cárcamo (2021), mainly female caregivers, reaching 84.9% of the total number of caregivers in the sample of this study ($n = 936$), and this role that falls on women increases when it comes to caring for dependent children (91.8%). In general, these caregivers do not have the knowledge or training to attend to the needs of the dependent person. In addition, this same study indicates that the caregivers of children are mostly mothers, and in the case of adults and older adults it is their partners and, in second place, mothers and daughters, respectively.

Another finding of this study was that physical disabilities are the main reason for having a primary caregiver. The diagnoses are associated with diseases of the Central Nervous System and/or amputations, with cerebrovascular diseases being determinant in the groups of adults and older adults, compared to children who are more associated with diseases related to cerebral palsy (Yelincic & Cárcamo, 2021). In general, adults and older adults experience disability as the loss or deterioration of certain motor or cognitive skills, whereas in the case of children who suffer the experience of disability, their families generally experience a different process with their children, where the absence of motor and/or cognitive skills accompanies them from birth. The psychosocial intervention processes are different, although in both there is an adjustment or a family reorganization of the functions and roles within the home, however, in the adult and older adult, the family must adapt to a loss of an acquired skill, having to adjust to the new characteristics and demands of the family member.

Espinoza and Aravena (2012) in a descriptive study in Chile reported that 90% of caregivers were women between 37 and 86 years of age ($M = 57.0$). In terms of schooling, only 3.3% of the caregivers had higher education, and the majority of caregivers are cared for by their mother, secondly by their spouse, and thirdly by a sibling. This study also showed that 63% of the caregivers had a permanent illness and most of the caregivers had mild caregiver strain with little perceived social support.

Also in Chile, Lavoiz et al. (2009), found that the main caregivers of dependent persons were women (79%), between 20 and 50 years of age, with low schooling and that the majority were daughters who take care of their parents. In relation to overload, 20% presented mild overload and 38% presented intense overload.

Zepeda-Alvarez and Muñoz-Mendoza (2019), studied 43 caregivers of older adults in Chile, and note that 69.77% presented overload. In addition, the majority of unpaid caregivers are women (74.42%), who assume this role because it is socially acquired and that only men can assume this role in the absence of women in their close family group. At the educational level, 13.95% have higher education and it is mainly the daughters of dependent parents who are involved in caregiving, followed by the spouses of dependent persons.

All of the above demonstrates the existence of a global social problem, whose reality is expanding and is recognized transversally, where a large part of the world is experiencing an aging of its population, which brings with it new challenges in the trajectory of life and will require a reorganization of the family system. When this occurs, a need for care is identified and, consequently, a person is identified who is able to exercise the role of primary caregiver for the partially or totally dependent person.

According to Arriagada (2010), there is a social organization of care (OSC) composed of social, political and economic interrelationships. The author clarifies that caring is the satisfaction of the physical and biological needs of another, in a period of their life cycle, and that this triad can be exercised from the domestic sphere, considering here unpaid caregivers, women with emotional ties; or from the contractual sphere, in which are found paid caregivers, mainly household advisors; and, finally, from specialized medical services, which are often costly for the family group.

Emotional overload of the caregiver not only has a huge impact on the caregiver's quality of life, but also has harmful effects on the dependent. Several studies have shown a relationship between caregiver emotional exhaustion and likelihood of physical and emotional abuse (Johannesen & LoGiudice, 2013) and neglect (Andela et al., 2021).

The assumption of the role of caregiver usually occurs suddenly and unplanned, emerging as an immediate response to the appearance of a need within the family nucleus. Unlike caregiving in childhood -a stage in which the birth of a new member implies a social and biological expectation regarding the caregiving role, traditionally assigned to mothers-, the onset of a disability or dependency situation in adulthood or old age is not usually accompanied by prior preparation or formally defined support structures (Arriagada, 2020; Lillo-Crespo et al., 2018). While in childhood dependency is anticipated and normatively accepted as part of human development, in adulthood or old age the need for care generates a forced reorganization of the family environment, often without adequate state support or sufficient community networks (Durán & Rogero-García, 2009). This response, usually spontaneous and without prior training, involves the abrupt incorporation of a complex role-that of informal or unpaid caregiver-for which most people have not been prepared, posing challenges at both the individual and systemic levels (Schulz & Eden, 2016).

It is there where the existence of gender, economic, family or other components become evident, falling naturally on one person in the family group, which is usually someone of the female gender. Thus, it is considered necessary to visualize the risk factors in those caregivers who will begin this work in order to help them before they begin to feel emotional and/or physical discomfort as a result of the overload of caring for a dependent.

From an early age, men and women learn about what it means to be a man or a woman, even though there is a second cycle of defining sexual and gender identity during puberty. As Ovejero (2013) says "it is gender identity that "forces" men and women to be, to think, to feel and to behave". The primary socializing components such as the family and the media help in the role adjustment of men and women.

Gender stereotypes tend to exalt the masculine as synonymous with power and autonomy, which contributes to the devaluation of the feminine. Gender identity, traditionally associated with roles such as mothers and wives, has begun to transform towards more autonomous and personal development-oriented models (García & Navarro, 2016). The female

body, historically linked to motherhood and the domestic sphere, has been a factor of exclusion in productive spaces.

The feminization and inequity of care work leads to a profile associated with unemployed women, with low schooling, responsible for housework, where there is a moral commitment, marked by affection, responsibility, an imposed task, not valued or remunerated, while the male gender is only given the option of assuming housework, which includes care work (García-Calvente et al., 2004)

On the other hand, language reinforces these inequalities by identifying women according to their marital status or family role, while men are associated with their profession (West, Lazar & Kramarae, 2001). From a social perspective, gender is historically constructed and reconstructed through language, culture and norms (Lamas, 1996; Scott, 2000), which allows us to rethink the categories of "man" and "woman" beyond biological determinism (García & Navarro, 2016).

A central tenet of feminist analysis is that care work, especially informal care work, falls disproportionately on women, reflecting and perpetuating patriarchal structures and gender divisions in society (Petrie-Flom Center, 2021). This work is often unpaid, undervalued or underpaid, which is a fundamental concern in feminist political economy, which denounces the invisibilization and lack of social recognition of these essential tasks for social and economic sustainability (Folbre, 2021). On the other hand, the intersectionality approach, coined by Kimberlé Crenshaw (cited in Bond Disability and Development Group, 2024), allows us to understand how multiple social identities-including race, gender, social class, age, sexual orientation, caste, and migratory status-intersect to shape complex experiences of discrimination and marginalization. In this sense, disability should not be conceived in isolation, but as an experience that is intertwined with other aspects of identity, affecting inclusion and access to rights at multiple levels.

Stereotypes are culturally constructed and shared by a significant number of societies, and it is possible to affirm that in many of them, care work is part of women's gender identity, in a predictable manner, since societies tend to guide our roles in how we should be and how we should behave, and therefore, dedicating oneself to housework or having more competencies in care work constitutes an attribute that socially differentiates them from men, who are expected to perform roles that are mostly associated with being the economic provider of the household.

The physical and/or emotional overload experienced by caregivers of dependent or disabled persons is a phenomenon of high clinical and social relevance, with direct implications on their overall health. This overload can manifest itself at the physical level, through musculoskeletal symptomatology associated with inadequate postures during mobilizations or transfers of the patient, as well as through somatizations derived from chronic exhaustion (Lillo-Crespo, Riquelme, & Sánchez, 2018; Piquart & Sörensen, 2003). However, the impact is not limited to the physical plane, but is often expressed in the emotional realm as well, or even in the confluence of both domains. On the psychoemotional level, it is common to observe increased levels of irritability, persistent feelings of exhaustion and stress, as well as the appearance of social withdrawal behaviors, attributable to the cumulative wear and tear of the caregiving task (Schulz & Eden, 2016; Zarit, Reever, & Bach-Peterson, 1980). Likewise, sleep disturbances, loss of appetite, decreased self-esteem and flattened affectivity have been identified, factors that, together, could be relevant predictors for the development of mood disorders, particularly depression, in the medium or long term (Vitaliano, Zhang, & Scanlan, 2003).

The physical and/or emotional overload of caregivers of people with dependency and disability, brings consequences in the caregiver, as he/she begins to present physical pain, product of the inadequate postures in the transfers of the dependent or somatize ailments due

to fatigue or overwhelm that he/she presents as a result of caring for a third party. Not only physical pain is present, but many times it is presented from the emotions, and even both can be present. From the emotional point of view, we find that the main caregivers are more irritable, they express feeling exhausted and stressed, they tend to show behaviors such as social isolation due to listlessness and daily wear and tear, they show greater affective apathy which affects their relationship with others, they have problems sleeping, loss of appetite, low self-esteem and other situations that could be configured in the future as factors conducive to the development of depression.

Associated with the above, the relationship between the caregiver and dependent may be threatened because there may begin to be conflict between them, which could trigger aggressive behavior on the part of the caregiver as well as the belief on the part of the dependent that his relative or dependant only seeks other interests from him, or a significant emotional discomfort that also needs the support of a third party that can resolve clinical pictures of possible depression or some other more serious emotional disturbance.

Based on this background, it is considered relevant to investigate the characteristics of unpaid caregivers of dependent persons, due to the impact this role has on mental health, not only on the caregiver, but also on those he/she cares for. The identification of variables associated with the risk of emotional overload can promote psychological and social interventions to avoid increasing mental health problems in a group with particular characteristics, in a society with an increasing population of elderly people who require care when compromising their autonomy and independence.

The objective of this study is to identify risk factors for the presence of emotional overload in the unpaid caregiver of dependent persons. It is hypothesized that those with the greatest emotional overload are female caregivers, who care for adults and older adults and who belong to a family with few support networks, as measured by the single-parent structure of the family.

Method

This is a non-experimental, cross-sectional, ex-post simple retrospective, quantitative, causal-correlational research, which aims to distinguish the psychosocial risks of unpaid primary caregivers of people in a situation of dependency, who attend the Corporación de Rehabilitación Club de Leones Cruz del Sur in the Region of Magallanes and Chilean Antarctica, Chile.

The data were extracted from the institution's electronic clinical records, which contain the social survey and the application of the Zarit scale. The participants were caregivers of children, adults and older adults of people who present dependency associated with a diagnosis of disability.

Data were grouped according to the variables of primary caregiver overload and no primary caregiver overload. Once the data had been standardized, correlation analyses of the different variables and group comparison analyses were performed. In order to identify the variables that explain the variance of emotional overload, logistic regressions were used, since the variable overload was treated as a categorical variable.

Sample

The type of sample was non-probabilistic, by convenience. Secondary analyses were performed on the database of N = 2,093 unpaid caregivers of patients with disabilities at the Corporación de Rehabilitación Club de Leones Cruz del Sur (CRCLCS) in the Region of Magallanes and Chilean Antarctica, Chile. The average age of caregivers was 36 years ($M =$

36.21, $SD = 11.39$), $M = 33.09$ for those caring for children, $M = 51.04$ for those caring for adults, and $M = 54.83$ for those caring for older adults (see Table 1).

Unpaid caregivers of dependent and disabled users were selected for this study. We included primary caregivers of CRCLCS users who: a) spend most of their time prostrate and/or with significant difficulty getting around or b) who, because of their physical, sensory and/or cognitive disability, require a third party to assist them. Other inclusion criteria were admission to CRCLCS between 01-01-2018 and 10-10-2021 and that caregivers had answered the interest questionnaires voluntarily. Paid caregivers and/or caregivers of institutionalized patients were excluded.

Instruments

The data collection was carried out by teams of professionals belonging to the psychosocial and medical areas of the CRCLCS as a protocol for the admission of the users of the institution. Through an interview and assessment, sociodemographic information was collected from caregivers and/or patients, such as economic income, level of schooling, age, sex, marital status, kinship, housing conditions, diagnosis, among others. In addition, caregivers responded to the Zarit caregiver overload scale (Breinbauer et al., 2009). This instrument has been validated for the Chilean population and consists of 22 questions that ask about the perceived impact on the caregiver's life due to caregiving. It is answered on a 5-point Likert-type frequency scale (1 = *never* to 5 = *almost always*), where higher scores indicate higher levels of caregiver overload.

For the vulnerability bracket, in Chile the population is divided into seven vulnerability brackets; the first between 0% to 40% of lower income; second between 41% to 50% of lower income; third 51% to 60% of lower income; fourth between 61% and 70% of lower income; fifth between 71% and 80% of higher income; sixth between 81% and 90% of higher income; and seventh between 91% and 100% of higher income.

This study was approved by the ethics committee of the Universidad Internacional Iberoamericana, in its session of February 11, 2022 and complies with the ethical code of the World Health Organization on human studies.

Results

According to the descriptive analysis of the total sample, it can be observed that a large majority of the caregivers are women (92.20%), on the contrary, the patients are mostly men (63.20%). Most of these families had a two-parent family structure (65.70%) and did not belong to the most vulnerable 40% of the population (58.60%). On the other hand, caregivers were mostly represented at the intermediate educational level (58.10%). All variables separated by age group to which the patient belongs are reported in the table below (Table 1).

Table 1

Descriptive statistics of the sample (N = 2,093)

Variables	Child	Adult	Senior Citizen	Total
	$\bar{X}(SD)$ o % $\bar{X}(SD)$ o %	$\bar{X}(SD)$ or	$\bar{X}(SD)$ or	$\bar{X}(SD)$ or

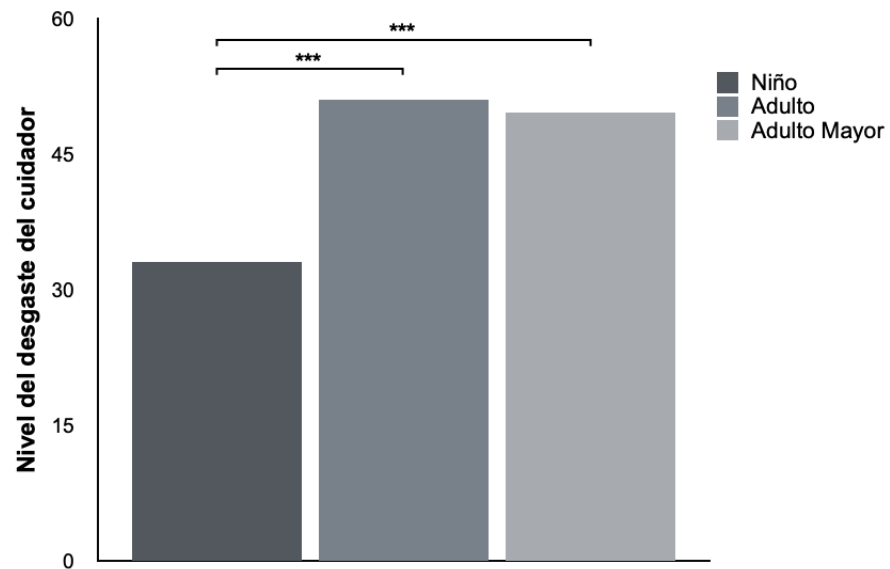
	$\bar{X}(SD)$ o % $\bar{X}(SD)$			
Age of caregiver ^a	33.09 (7.46)	51.04 (13.18)	54.83 (13.60)	36.21 (11.39)
Sex of caregiver (female)	94.20	76.50	82.70	92.20
Sex of patient (female)	36.10	36.70	43.20	36.80
<i>Educational level of the caregiver</i>				
Under	7.10	30.60	33.20	10.90
Medium	59.80	55.10	45.50	58.10
High	33.10	14.30	21.40	31.00
Vulnerability section (si) ^b	43.60	34.70	26.80	41.40
<i>Family types</i>				
Single-parent	29.90	36.70	41.80	31.50
Biparental	69.40	57.10	40.50	65.70
Others	0.70	6.10	17.70	2.80
Caregiver overload	41.15 (11.65)	50.15 (14.55)	49.66 (15.34)	41.47 (12.62)

Note. ^aAge in years; ^b0= Does not belong to the most vulnerable 40%, 1= Does belong to the most vulnerable 40%. $N_{\text{child}} = 1775$, $N_{\text{adult}} = 98$, $N_{\text{older adult}} = 220$.

A one-way ANOVA analysis of variance was performed to determine whether the level of caregiver attrition caregivers age group to which the cared-for patient belongs (See Figure 1). Significant differences were found in the level of attrition between groups ($F_{(2, 2090)} = 67.60$, $p < .001$; $\eta_p^2 = .06$). *Posthoc* analysis showed that adult caregivers had a higher level of burnout ($M = 50.15$, $SD = 14.55$) than child caregivers ($M = 41.15$, $SD = 11.65$; $p < .001$). Similarly, caregivers of older adults ($M = 49.66$; $DE = 15.34$) were found to have a significantly higher level of burnout than caregivers of children ($M = 41.15$, $DE = 11.65$; $p < .001$). No significant differences were found between the level of burnout of adult and older adult caregivers ($p > .05$). (figure 1)

Figure 1

Level of caregiver overload according to the age group to which the patient belongs ($N = 2,093$).



Two-way ANOVAs were performed independently to determine the effect of patient age group and other demographic characteristics (patient and caregiver sex, caregiver educational level, vulnerability band and family type) on caregiver burnout. In all models, only the main effect of the age group to which the caregiver belongs was significant.

A bivariate correlation analysis was performed to determine the degree of association between the variables of interest. As seen in Table 2, a positive correlation was found between caregiver burnout level and caregiver age ($r = .21, p < .001$), caring for adults compared to children ($r = .14, p < .001$), caring for older adults compared to children ($r = .20, p < .001$), and having a single-parent ($r = .08, p < .001$), and other type of family ($r = .08, p < .001$) compared to a two-parent structure. On the other hand, a negative relationship was found between caregiver emotional exhaustion and belonging to the 40% vulnerability bracket ($r = -.05, p < .05$), which means that those who belong to the vulnerability bracket present less emotional exhaustion than those who do not belong to that bracket. (table 2)

Table 2*Correlation between sociodemographic variables and the level of caregiver overload (N = 2,093)*

	1	2	3	4	5	6	7	8	9
1. Age of caregiver	-								
2. Sex of caregiver ^a	.20***	-							
3. Sex of patient ^a	.02	-.05*	-						
4. Age group (adult) ^b	.29***	.13***	.00	-					
5. Age group (older adults) ^b	.56***	.12***	-.05*	-.08***	-				
6. Educational level of P. caregiver ^c	-.27***	-.05*	.01	-.13**	-.18***	-			
7. Vulnerability section ^d	-.02	.00	-.00	-.03	-.10***	.28***	-		
8. Type of family (single-parent) ^e	.02	-.05*	-.02	.02	.08***	-.05*	-.12***	-	
9. Type of family (other) ^e	.25***	.03	.01	.05*	.31**	-.11***	-.08***	-.11***	-
10. Level of caregiver overload	.21***	-.011	.02	.14***	.20***	-.04	-.05*	.08***	.08***

Note. * $p < .05$ ** $p < .01$, *** $p < .001$ ^a0 = female, 1 = male; ^bCompared to age group of child patients; ^c0 = low, 1 = medium, 2 = high; ^d0 = does not belong to 40% most vulnerable, 1 = belongs to 40% most vulnerable;^eCompared to two-parent family type.

To determine the effect of sociodemographic variables on caregiver burnout, a multiple regression analysis was performed (see Table 3). The independent variables were the age of the caregiver, the sex of the patient and caregiver, the age group to which the patient belongs, the educational level of the caregiver, the family vulnerability level and the type of family. Caregiver burnout was entered as an independent variable. The variable selection method was a one-step input method and the listwise elimination method was used to handle missing data.

Results indicated that the model was significant ($F_{(9, 2083)} = 18.73, p < .001$), explaining 8% of the variability in caregiver burnout ($R^2 = .08, p < .001$). Caregiver age ($\beta = .11, t(2083) 3.67, p < .001$) significantly predicted caregiver burnout, indicating that greater caregiver burnout occurs with greater age. On the other hand, the sex of the caregiver was also a significant predictor ($\beta = -.06, t(2083) -2.82, p < .01$), with female caregivers presenting higher levels of burnout. Considering the age group of patients, caring for adults ($\beta = .13, t(2083) 5.44, p < .001$) and caring for older adults ($\beta = .15, t(2083) 5.43, p < .001$) were found to be significantly more wearing than caring for children. Finally, the results showed that belonging to a single-parent family predicted a higher level of caregiver burnout than being in a two-parent family ($\beta = .06, t(2083) 2.62, p < .01$). (table3)

Table 3

Multiple regression of sociodemographic variables on caregiver strain (N = 2,093)

Variable	B	SE B	β
Age of caregiver	.12	.03	.11***
Sex of caregiver ^a	2.87	1.02	-.06**
Sex of patient ^a	.63	.55	.02
Age group (adult) ^b	7.57	1.39	.13***
Age group (older adults) ^b	6.19	1.14	.15***
Educational level of the caregiver ^c	.91	.47	.04
Vulnerability section ^d	-.74	.57	-.03
Type of family (single-parent) ^e	1.54	.59	.06**
Type of family (other) ^e	1.09	1.74	.01
R^2		.08***	
F		18.71***	

Note. ** $p < .01$, *** $p < .001$

^a0 = female, 1 = male; ^bComparison with age group of child patients; ^c0 = low, 1 = medium, 2 = high; ^d0 = does not belong to the most vulnerable 40%, 1 = belongs to the most vulnerable 40%; ^eComparison with the type of two-parent family.

Discussion and Conclusions

The present study identified four psychosocial factors related to increased caregiver burnout. First, when this function is expressed in the advanced age of the caregiver (post parental), it is a crisis that triggers an increased risk of overload. Second, being a female caregiver was found to increase the likelihood of emotional overload. As mentioned in both

Chilean and foreign studies, it is mainly women who are in charge of the caregiving role. This, being linked to gender expectations or mandates, such as, for example, that women have greater caregiving skills than men, is related to low valuation of this work and less support from other family members.

Third, it was found that caregivers caring for adults or older adults were more overburdened than caregivers caring for children. This result is similar to that found by Escandell-Rico and Pérez-Fernández (2022), who point out that older caregivers are more at risk of overload. This can be explained, on the one hand, by the relationship that has been found in the literature between age and the probability of presenting high levels of dependence. Greater dependency, therefore, requires more caregiving tasks and less free time to perform other tasks that allow them to detach from the role on a daily basis, making emotional overload more likely. On the other hand, since the caregiving role is generally assumed by older adult partners, there are more barriers to performing the tasks (wear and tear, old age, less energy, illness, etc.). In addition, our own results indicate that caregivers of older adults present high levels of vulnerability, which is a chronic stressor within the family context. Finally, it is possible that for caregivers of children with disabilities, there are more internal and external support networks (e.g., school), which are lost in adulthood.

Finally, belonging to a single-parent family was found to be related to higher levels of caregiver burnout. A family group with more adults in the household can divide certain roles, which facilitates the task of caregiving. In general, these families are often made up of several people who can act as caregivers, alternating functions and also making possible the presence of actions other than caregiving; some may work partially or include self-care activities in their weekly routines, which means less emotional and/or physical wear and tear or overload.

Contrary to other research, educational level was not found to be a significant predictor of caregiver overload. The support networks at the family or public service level that an unpaid primary caregiver possesses would then be more relevant, since caregiving is especially a task that is learned from the virtue of practice and initial child rearing, being transmitted from generation to generation.

The present research provides relevant data that allow the identification of risk variables for caregiver emotional exhaustion, being the age and gender of the caregiver, the age group of the dependent person and the family structure, thus allowing the possibility of constructing a psychosocial risk pattern that may anticipate the psychosocial teams of a possible risk of overload in an unpaid primary caregiver.

Unpaid primary caregivers of people with disabilities and dependency worldwide are an issue that emerges as a challenge for most societies, at least in the Western world, where many of our expectations about caregiving and caregivers are culturally shared, at a time when the proportion of older adults is increasing. (Economic Commission for Latin America and the Caribbean, 2022).

Currently, it can be seen that, in the work of caring for others, the male figure is not present in a significant way, but only appears in the absence of the female gender. With this it can be inferred that the competencies to perform this function are not necessarily related to physiological issues, but rather, to the cultural determination and expectations that exist in a society, where women are "better" at performing these functions compared to men. The cultural reasons for the construction of this stereotype is that from an early age they begin to differentiate roles within the family (Arriagada, 2010), therefore, it is expected for many that this work is performed by women. When this social group of primary caregivers perceive themselves in the same social category and/or present a common social identification (Sanchez & Gonzalez, 2012), they begin to feel that it is part of their role. Unpaid primary caregivers of people with disabilities and dependency begin to be seen as a stereotyped social category,

where they share roles and attributes, forming a group marked by actions related to caring for another.

There is no doubt that, according to different theorists, the construction of roles is a cultural issue and that this can be transformed with incentives that allow the male gender to identify not only productive but also part of the solution to care, understanding that the development of societies is achieved when all actors take charge of the problems existing in a territory (Economic Commission for Latin America and the Caribbean, 2022).

Main Conclusions

Understanding gender as a social construct, influenced by stereotypes, traditional roles, language and socialization processes since childhood (García & Navarro, 2016; Ovejero, 2013), allows for a deeper analysis of the emotional overload faced by unpaid caregivers. These tasks continue to be assumed, for the most part, by women, reflecting an unequal distribution of care responsibilities based on gender mandates. This situation contributes to the physical and emotional exhaustion of those who perform caregiving tasks on a constant basis and without formal recognition.

In this context, elderly caregivers and those who belong to single-parent families are at high risk of emotional overload, especially when they do not have support networks. In addition, it is observed that caring for adults or elderly people entails higher levels of emotional demands than caring for children or adolescents, due to the complexity and prolongation of the accompaniment required.

In view of this reality, we propose the construction of a risk card that considers variables such as the age of the caregiver, the family structure and the characteristics of the person to be cared for. This tool would make it possible to prevent situations of physical and/or emotional overload, facilitating the implementation of psychosocial support devices in various institutions. Such measures should incorporate a gender and inclusion perspective that recognizes and values the care work performed by all people, regardless of their identity or family role.

Among the limitations of this research are several considerations. First, difficulties were encountered due to the large volume of data collected, which represented a significant limitation. The exhaustive review, correction and elimination of erroneous data demanded a considerable amount of time and effort, delaying the analysis process and affecting the time available for more detailed and accurate work on the variables. This delay, in turn, interfered with the deadlines established by the doctoral program, limiting the possibility of a deeper exploration of some key aspects of the research. Second, the lack of additional variables was identified as a relevant limitation, as the absence of factors such as family dynamics, perceived support, caregiver mental health, coping techniques or caregiver motivation prevented a more comprehensive understanding of caregiver overload. These elements could explain to a greater extent the percentage of overload experienced, so it is suggested that future studies include them to provide a more complete picture of the factors involved and thus develop more effective strategies for their support. Finally, the use of a non-probabilistic sample selected by convenience represents an important limitation, since it may affect the external validity of the results and their generalizability to other populations.

At the intervention level, the risk of physical and/or emotional overload of unpaid primary caregivers could be prevented by implementing psychosocial devices in the various institutions, both public and private. The construction of a risk card that identifies the presence of variables that increase caregiver overload could be a useful tool for teams that are intervening in families that are in a vital stage associated with caregiving or that, for non-regulatory reasons, have a family member who requires care.

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Overprotection in children with hearing disability

Sobreprotección en hijos con discapacidad auditiva

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ABSTRACT

Parents have the responsibility to educate their children through a parenting style that influences their holistic development, including their ability to face challenges that may arise in their lives. This article analyzes overprotection in children with hearing disabilities through a documentary methodology based on an analysis matrix, reviewing databases such as Scielo, Redalyc, and Google Scholar. Reflecting on this topic is crucial to promote greater awareness among parents regarding overprotective attitudes, encouraging them to adopt practices that foster the independence of their children with this sensory condition. This approach not only benefits the child but also allows parents to enjoy a more balanced relationship, free from constant stress and fear, creating a healthier environment for all family members and promoting a better quality of life. It is concluded that, although parents act out of love and commitment, overprotection can limit the child's essential actions and skills by restricting their autonomy, opportunities to face challenges, capacity to learn from mistakes, and the development of self-confidence. Therefore, this type of parenting pattern may affect the self-efficacy and resilience of children, both socially and emotionally.

RESUMEN

Palabras clave:

crianza, sobreprotección, hijos, discapacidad auditiva, desarrollo de la autonomía.

Los padres tienen la responsabilidad de educar a sus hijos mediante un estilo de crianza que influye en su desarrollo integral, incluyendo su capacidad para afrontar los retos que puedan surgir en sus vidas. Este artículo analiza la sobreprotección en hijos con discapacidad auditiva desde una metodología documental basada en una matriz de análisis, revisando bases como Scielo, Redalyc y Google Scholar. Reflexionar sobre este tema resulta crucial para promover una mayor conciencia en los padres respecto a las actitudes sobreprotectoras, alentándolos a adoptar prácticas que promuevan la independencia de sus hijos con dicha condición sensorial. Este enfoque no solo favorece al hijo, sino que también permite a los progenitores disfrutar de una relación más equilibrada, libre de estrés y temor constante, creando un entorno más saludable para todos los miembros de la familia y promoviendo una

mejor calidad de vida. Se concluye que, aunque los padres actúan movidos por el amor y el compromiso, la sobreprotección puede limitar las acciones y las habilidades esenciales del niño al restringir su autonomía, sus oportunidades para enfrentar los desafíos, su capacidad para aprender de sus errores y el desarrollo de su autoconfianza. Por lo tanto, este tipo de patrón de crianza puede afectar la autoeficacia y la resiliencia de los hijos, tanto en el ámbito social como emocional.

Introduction

Parental overprotection of hearing-impaired children is a practice that, although driven by affection, the intention to care or a sense of duty, can have adverse consequences in different areas. According to Gonzalez (2018), this attitude can limit children's autonomy and ability to face challenges on their own, which has a negative impact on their self-esteem and social skills.

In the Latin American context, social pressure and cultural expectations related to raising hearing impaired children may intensify the tendency to overprotect. Valladares (2013) highlights that hearing parents, upon receiving the diagnosis of hearing impairment in their children, usually experience an emotional crisis that leads them to adopt overprotective behaviors, with the intention of compensating for the perceived limitations in their children.

For the World Health Organization, 2021 (WHO), the process of raising a hearing-impaired child involves specific challenges for parents, who are often unaware of the extent of their child's capabilities and potential. This perception may lead them to believe that the child requires excessive care, which restricts his or her ability to function on his or her own and overcome obstacles.

This study on overprotection in hearing impaired children not only offers a close look at the family experience, but also invites reflection on its clinical and educational implications. Understanding how this parenting style impacts the development of these children not only guides parents, but can also serve as a basis for designing therapeutic interventions, personalized educational plans and accompaniment strategies that strengthen their autonomy.

Although overprotection is born out of love and the desire to protect, it is critical for parents to recognize how their actions can influence their children's development because, although well-intentioned, it can limit their potential. Therefore, it is necessary to foster their ability to adapt, communicate and develop autonomously in their environment (UNICEF, 2022). Several studies have shown that parenting styles focused on autonomy and positive companionship contribute significantly to the emotional and social development of children with disabilities (López-Liria et al., 2020). In addition, organizations such as the Economic Commission for Latin America and the Caribbean (ECLAC) and the WHO promote family intervention policies that integrate inclusive education and the strengthening of parental competencies to improve the quality of life of these children and their families (ECLAC, 2023; WHO, 2021).

These recommendations highlight the importance of parental awareness and the implementation of psychoeducational support programs that reinforce independence and resilience in children with sensory conditions, such as hearing impairment. The literature explains that balanced parenting, which combines support and encouragement towards independence, is more beneficial for the development of children facing this sensory condition. González (2018) points out that fostering autonomy in these children not only improves their self-perception, but also facilitates their social and academic integration.

In addition, it is essential that parents receive professional guidance and support to properly manage the emotions and challenges associated with raising a hearing-impaired child. Perdomo (2010) stresses the importance of providing the family with tools and strategies that favor optimal child development and family well-being. This can help strengthen their skills and give them greater confidence to face the situations or difficulties they may encounter in each life cycle.

Although there are several studies that address hearing impairment from a clinical or communicative perspective, there is little research examining the impact of parental overprotection as a direct barrier to the development of autonomy in these children. This analysis aims to fill that gap by offering a thoughtful and documented look at how parenting dynamics, particularly the overprotective style, can limit the emotional, social, and functional

growth of hearing-impaired children. In doing so, we seek to raise awareness and open space for new forms of support that are more respectful of these children's ability to develop independently.

Overprotection and its Triggers

The family is the first environment of interaction, key for education (Manjarrés, 2013, p. 22), where parents encourage education through educational styles, such as the permissive, in which parents set few limits, which can generate demanding and insecure children; the authoritarian, which, with rigid control and little affection, is associated with children with low self-esteem and lack of self-control; the negligent, which, with little control and affection, produces children with aggressive behaviors and psychological disorders; and the democratic, characterized by affection, dialogue and clear limits, fosters children with high self-esteem, confidence and good social competencies (Perona, 2021).

For his part, the Austrian physician and psychotherapist Alfred Adler identified three parenting styles that are harmful to children, two of which coincide with those mentioned by Perona (2021), but differ in the social and emotional aspects: authoritarian, which makes children feel unaccepted; permissive, which prevents them from learning to respect; and overprotective parenting, which limits their ability to manage themselves in the physical, emotional, social, academic and communicative spheres. In this context, preventing children from facing suffering, a common characteristic of overprotection in our society, can hinder their social and academic adaptation, generating frustration (Jiménez, 2018).

According to Torio et al (2008), parents adjust their parenting style for each child, taking into account factors such as the number of children, their gender, their place in the birth order, their health and appearance, as well as the family's social, cultural and religious environment (p.156).

Parental overprotection manifests itself in various forms, which can be classified according to parental behaviors and attitudes. According to an article by the Association for Psychology and Education (2021), the following categories of overprotection are identified:

Excessive control. Parents supervise and direct every aspect of the child's life, preventing the child from making decisions on his or her own.

Risk prevention. The child is prevented from facing situations that could be beneficial to his or her learning and development, for fear of harm or failure.

Problem solving. Parents constantly intervene to solve difficulties that the child could handle alone, limiting the child's ability to develop coping skills.

Unrealistic expectations. Standards of perfection are set for the child to meet, which can lead to anxiety and a perception of incompetence.

In this context, overprotection is a phenomenon that manifests itself when parents assume activities that children are capable of performing, such as dressing or combing their hair, at an age when they should be able to do them independently (Barocio, 2004). Overprotection in childhood, commonly manifested during adolescence, although it is frequently observed in only children, those with elderly parents or raised by grandparents (Peláez & Ximena, 1993, p. 44), is also externalized in children with some disability, such as hearing impairment; which according to Rodríguez (2015), is defined as the loss or alteration in the functioning of the auditory system, which causes difficulties in hearing and limits access to oral language (p. 96).

According to Gallo (2010), overprotection is understood as unconditional love towards the child, but characterized by its excess. On the other hand, Barocio (2004) points out that, although overprotection stems from love for children, it is influenced by distrust in their ability to face challenges autonomously and by fear of allowing them to grow and become independent. By transmitting their own fears about suffering or harm, parents deprive their children of valuable experiences, limiting their ability to enjoy life. This confusion between

overprotection and love is especially evident in mothers, who, by making life easier for them, prevent their children from facing difficulties (pp. 112-122), a perspective that is also supported by Izquierdo (2007).

Through overprotection, parents seek to prevent any trauma and to completely satisfy their children's desires (Gallo, 2010). This attitude responds to the need to feel safe and important being close to them, added to the tendency to make decisions in their place, even controlling aspects related to their friendships (Barocio, 2004, p. 112).

For Bello (2014), parental overprotection is a commonly reported behavior in families with children with some disability, which is not only manifested in the constant resolution of the problems they face, due to the belief that they lack the necessary strengths to cope with life, but also in all their decisions, regardless of their importance. In addition to preventing children from facing challenges or emotions such as anger, disgust or sadness, they are prevented from experiencing failures and protected from possible dangers, to the point of not tolerating frustrations. As a result, parents often omit rules or limits.

Overprotection in the Development of Autonomy

Parents who overprotect their hearing-impaired children tend to limit their opportunities for participation in everyday activities, which restricts the development of essential skills for independence. This behavior can prevent children from gaining the confidence to function on their own (Gonzalez, 2018). In this sense, excessive protection limits their autonomy by preventing them from developing skills on their own (Barocio, 2004), such as socioemotional skills, which are fundamental for learning coping and adaptation strategies (Bello, 2014). Likewise, (Peláez & Ximena, 1993, p. 44) this overprotection can lead to a lack of effort and disinterest in studying, making integration into the adult world difficult and generating rejection among peers.

According to Bohórquez (2018), parental overprotection prevents children from fully developing their abilities and skills due to the lack of direct experiences, which negatively affects their autonomy and social adaptation. Within this framework, the research by Santa Cruz et al. (2021) indicate that overprotection may contribute to the development of socioemotional problems in hearing impaired children, such as anxiety and excessive dependence on their parents, as children may feel insecure when facing new situations without the constant support of their caregivers. Similarly, Delgado's (2018) documentary review highlights that family overprotection can lead to a significant decrease in the autonomy of children with this type of disability evidencing scenarios that have led to a decrease in their ability to make decisions and solve problems on their own.

Similarly, Morocho and Cuadrado (2023) point out that overprotection in children with special educational needs can hinder their emotional and social development, limiting their independence and adaptive skills.

In their study, *overprotection in children with hearing loss treated at the Otoacoustic Emission Unit of the Deafness Prevention Program in Guatemala (2007-2009)*, Orellana and Landeros (2010) state that hearing loss acts as a trigger for overprotection in 95% of the cases, delaying not only the social and psychological development, but also the intellectual development of children, generating dependency (p. 49).

Likewise, overprotection can affect children's self-esteem, altering their perception of themselves. This unfavorable perception can become a significant obstacle to the development of their autonomy. For Ocampo (2019), overprotected children may internalize the idea that they are not capable of facing challenges on their own, which decreases their self-esteem and motivation to be independent. In this context, research conducted by the Texas Tech University Health Sciences Center reveals that excessive parental protection of a child with a disability can result in decreased self-esteem and problems in achieving maximum development. These

attitudes can be considered manifestations of discrimination that, when internalized, can lead the individual with a disability to adopt the belief that he or she possesses inferior abilities compared to those of people without disabilities (ViveLibre, January 19, 2022).

Over time, this dynamic can consolidate an attitude of self-pity and resignation to his or her limitations, leading the child to accept a passive role in life, who may internalize the idea that his or her challenges are insurmountable without constant help, which can affect not only his or her perception of self, but also his or her sense of personal competence. Instead of building a vision of self-sufficiency commensurate with his or her abilities, the child may end up convinced that his or her limitations are insurmountable, perpetuating a dependency that will affect his or her potential to achieve and lead a fulfilling life.

Promoting Autonomy in Children with Hearing Impairment

To mitigate the negative effects of overprotection, it is essential that parents promote independence and confidence in their children by allowing them to face challenges and learn from their experiences, rather than constantly solving their problems. According to Anchundia and Navarrete (2021), the implementation of activities that promote decision making and problem solving can be beneficial for the development of autonomy in hearing impaired children. In addition, it is critical that parents receive guidance and support in understanding how their actions can influence the development of their children's ability to fend for themselves. According to Bohórquez (2018), parent education and counseling can reduce overprotective behaviors and encourage practices that favor children's independence.

To counteract the effects of overprotection, Restrepo and Correa (2024) suggest that it is essential to implement strategies aimed at strengthening the autonomy of children with disabilities. These include the use of reflective questions, the incorporation of visual tools that facilitate the organization of ideas and intentional work on dimensions such as self-confidence and self-esteem. Likewise, they should be encouraged to develop skills that allow them to request support, when necessary, without generating a relationship of dependence, thus ensuring that their personal growth is in tune with their own interests.

Garcia and Lopez's (2019) research mentions that integration in inclusive educational settings can help counteract these negative perceptions about hearing impaired children. This integration involves interaction with hearing peers and participation in common activities, which allows children to recognize their own abilities and reduce feelings of dependency.

Martinez and Torres (2020) stress the importance of early intervention programs that involve both children and their families. These interventions offer strategies to foster autonomy and change negative perceptions, promoting a more positive view of the child's capabilities.

Perceptions of disability and dependence in hearing impaired children are shaped by a variety of factors, including adult expectations, social representation, and personal experiences. In this context, according to Hernández and Ruiz (2021), positive media representation and the promotion of success stories can influence the perceptions of children and their families, favoring greater independence and self-esteem. It is therefore essential that society in general adopts a more inclusive and positive perspective towards hearing impaired people.

The Role of the Family in the Development of Self-Efficacy and Resilience

The family plays a critical role in the development of self-efficacy and resilience in children, especially those with hearing impairment. According to Bandura (1997), self-efficacy refers to the belief in one's own ability to organize and carry out the necessary actions to manage future situations. This perception is largely shaped by the experiences and support provided by the family environment.

In the context of hearing impairment, the family acts as the primary socializing agent, providing role models and coping strategies. Masten and Monn (2015) point out that resilience, understood as the ability to adapt positively to adverse situations, is strengthened when the child perceives that he or she can count on a solid support network within his or her nuclear

family. From this perspective, a family environment that promotes open communication and emotional support plays a crucial role in the development of resilience in children.

In addition, research by Henry, Morris, and Harrist (2015) explains that families that set clear and realistic expectations, while providing opportunities for decision making and problem solving, promote self-efficacy in children. These practices allow hearing impaired children to develop confidence in their abilities and feel competent to face challenges.

The active participation of the family in the education and rehabilitation of the hearing-impaired child is also essential. Luthar, Cicchetti and Becker (2000) indicate that interventions that involve the family in the child's educational and therapeutic process have a positive impact on the development of resilience. Collaboration between parents, educators and health professionals facilitates the creation of coherent strategies that reinforce the child's skills and ability to adapt to diverse situations.

Disability and Dependency in Hearing-Impaired Children

For Morales and Fernandez (2018), parental overprotection, although well-intentioned, may contribute to the perception of disability in hearing impaired children. By constantly solving their children's problems, parents may unwittingly send the implicit message that the child is not capable of handling situations on his or her own, undermining the child's confidence and autonomy.

The perception of disability and dependence in hearing impaired children is a complex phenomenon involving individual, family and social factors. For López and Martínez (2015), these children often internalize limiting messages from their environment, which can negatively affect their self-esteem and autonomy. This internalization process can lead children to see themselves as less capable, which limits their active participation in various activities.

Likewise, Perez and Gomez's (2017) research highlights that low expectations on the part of parents and educators can reinforce feelings of dependency in hearing impaired children. That is, when adults assume that these children are not capable of performing certain tasks on their own, they are deprived of opportunities to develop essential skills, thus perpetuating an unnecessary dependency.

On the other hand, Rodriguez and Sanchez (2016) note that the lack of hearing-impaired role models in positions of independence and success can limit the aspirations of these children. In this sense, the absence of positive references makes it difficult for children to visualize a future in which they can be autonomous and successful, which reinforces perceptions of incapacity.

Method

The study follows a documentary-descriptive design, which was appropriate given the exploratory nature of the phenomenon analyzed: overprotection in hearing impaired children. This methodology is justified by the interest of understanding in depth the existing theoretical contributions, establishing connections between psychosocial variables such as parenting, self-efficacy and resilience, and generating an interpretative basis to guide future research with an empirical approach. The documentary design made it possible to gather, classify and analyze secondary sources of scientific quality that address the subject from different perspectives.

The main working tool was a documentary analysis matrix, designed to systematize the information extracted from the selected texts. This matrix included the following fields: author(s), year of publication, country, objective of the study, methodology used, main findings, conclusions, and their relationship with the analytical categories of the study (overprotection, autonomy, resilience and self-efficacy). This structure allowed us not only to organize the information, but also to identify patterns, theoretical gaps and areas of convergence.

In order to select the documents included in the analysis, inclusion criteria were established: (1) studies published between 2015 and 2023, (2) research focused on childhood

hearing impairment, (3) texts that explicitly addressed topics such as overprotection, parenting styles, or emotional development, and (4) publications in Spanish or English with full access. As exclusion criteria, articles without peer review, studies with an exclusive clinical focus without mention of the family or emotional dimension, and duplicate documents or those irrelevant to the objectives of the study were discarded.

Information was collected from recognized academic databases such as Scielo, Redalyc, Google Scholar and university thesis repositories. The search terms used included combinations such as: overprotection in children with hearing impairment, self-efficacy in hearing impairment, resilience in children with hearing loss, and parenting styles in sensory impairment.

A sample of the documentary matrix can be consulted in Annex 1 of the article, as a methodological complement to guarantee transparency and allow replication of the study by other interested researchers.

Limitations and Future Lines of Research

One of the main limitations of this study lies in its exclusively documentary nature. While it provides a sound theoretical framework, it does not include direct empirical evidence obtained from parents or caregivers of hearing-impaired children. This restricts the possibility of contrasting the conclusions with real experiences or with specific contexts. Likewise, the availability of studies specifically focused on overprotection and hearing impairment is limited, which evidences a gap that this work is just beginning to explore.

Future research could be complemented with mixed methodologies that include interviews, focus groups or questionnaires applied to parents or families, teachers and hearing health professionals. Also, it is suggested to extend the analysis to different age ranges and socioeconomic conditions, considering that variables such as the stage of child development and socioeconomic condition could influence both the manifestation and the consequences of overprotection in hearing impaired children, especially with regard to their autonomy. It would also be relevant to explore the influence of the school and community context on the development of such autonomy.

Results

The documentary review on overprotection in children with hearing impairment shows the impact of this family dynamic on the development of self-efficacy, autonomy and resilience.

Self-efficacy, defined by Bandura (1997) as "*the belief in one's ability to organize and execute actions necessary to manage future situations*" (p. 3), is one of the areas most affected in overprotected children. Constant intervention by parents, who seek to protect their children from any difficulties, can limit the child's opportunities to develop confidence in his or her own abilities. This lack of confidence restricts learning through autonomous experiences.

The documentary review made it possible to identify various effects of parental overprotection in children with hearing impairment, mainly categorized in three areas: self-efficacy, autonomy and resilience. Based on the analysis of the sources, a documentary matrix was constructed to show the causes, indicators and consequences of this parenting pattern.

1. Effects on self-efficacy. The studies reviewed show that constant parental intervention in everyday situations restricts the child's opportunity to develop confidence in his or her own abilities. The main causes identified are parental fear, perceived vulnerability of the child and the desire to protect the child. Common indicators include restraint in decision making, adult problem solving and exaggerated risk communication.

Reported effects in this context include reduced self-efficacy, increased emotional dependence, and limited resilience. Studies agree that overprotection prevents children from facing challenging situations on their own, which negatively affects their self-confidence and capacity for initiative.

2. Limitations in the development of autonomy. The findings show a direct relationship between overprotection and decreased opportunities for decision making, participation in daily tasks and autonomous conflict resolution. Patterns of dependency are identified, especially in the family context, which reinforce the idea that the child needs constant assistance to get by, even in activities that could be done without help. The documents reviewed emphasize that these limitations also have an impact on academic performance, as excessive attendance and supervision prevent the child from developing autonomous study habits and personal organization skills.

3. Impact on resilience. Regarding resilience, it was found that overprotected children have greater difficulties in adapting to new or adverse situations. This condition is accentuated when parenting styles are characterized by excessive control and little exposure to self-improvement experiences. Studies suggest that family accompaniment focused on affection, but also on fostering independence, is key to strengthening this capacity.

4. Emerging categories. From the analysis of the studies included in the documentary matrix (see Table 2), several common categories emerge:

1. Parental perception of vulnerability: present in most studies as the origin of overprotection.
2. Limitation of the child's active participation: this recurrent pattern affects the child's autonomy, both in home activities and in the school environment.
3. Negative emotional effects: anxiety, low self-esteem and emotional dependence stand out as frequent consequences of parental overprotection.
4. Assessment of the family environment as a protective or limiting factor: studies coincide in highlighting the central role of the family, which can both promote and inhibit resilience and self-efficacy.
5. Proposal of family counseling programs: several studies recommend the implementation of interventions aimed at modifying the overprotective parenting style.

The evidence gathered reflects that parental overprotection, although motivated by care and affection, represents a significant barrier to the comprehensive development of hearing impaired children. Most studies agree that an environment that balances support with the promotion of autonomy favors better emotional, academic and social outcomes.

Table 1

Causes, indicators and effects of overprotection on the self-efficacy of hearing impaired children

Appearance	Description
Causes	<ol style="list-style-type: none"> 1. Parental fear. 2. Perception of vulnerability. 3. Love for the child.
Indicators	<ol style="list-style-type: none"> 1. Restricted decision making. 2. Problem solving by parents. 3. Communication of exaggerated risks
Effects	<ol style="list-style-type: none"> 1. Reduced self-efficacy. 2. Emotional dependence. 3. Limited resilience.

Source: Own elaboration

Pérez and Gómez (2017) explain that *"parents' fear of the possibility that their children will experience difficulties fosters constant protection, even in everyday situations that do not represent real risks"* (p. 23). In this sense, parental fear can become a barrier to the development of autonomy in children, limiting their learning experiences.

Thus, overprotection involves excessive parental intervention, which prevents the child from facing and learning from challenges. López and Martínez (2015) point out that *"overprotection generates a dependency that leads the child to rely on his or her parents to make everyday decisions"* (p. 12). This is particularly problematic in the context of hearing impairment, where the perception of vulnerability in children may intensify this protective behavior.

Gonzalez and Lopez (2018) state that *"children who experience overprotection at home develop a perception of helplessness that limits their active participation in various activities"* (p. 46). The interpretation of this theory states that when parents constantly intervene, they convey the implicit message that the child is not capable of facing challenges, weakening the child's sense of self-efficacy and strengthening unnecessary dependency.

Likewise, overprotective behavior not only affects the child, but also implies a considerable emotional burden for the parent, who must assume constant vigilance and the responsibility of making decisions, which can generate stress and exhaustion.

Table 2

Documentary matrix of overprotection in hearing impaired children

Author(s)	Year	Title of the study	Target	Methodology	Results	Conclusions
Ballesteros, R.	2017	Child overprotection as a barrier to development.	To analyze how parental overprotection affects the child's emotional and social development.	Literature review and critical analysis.	Overprotection arises from frustrated parental emotions, limiting the child's autonomy.	It is necessary for parents to differentiate between care and control, promoting coping skills and autonomy in children.
Restrepo, L. and Correa, P.	2024	Strategies to promote autonomy in people with disabilities.	Propose strategies to promote autonomy and self-determination in people with disabilities.	Qualitative study with interviews and experts.	Visual tools and strategic dialogue promote decision making and independence.	Autonomy must be promoted from an early age with strategies adapted to the interests of the individual and the inclusive

support of
society.

Table 2*Documentary matrix of overprotection in hearing impaired children (Continued)*

González, C.	2018	The influence of overprotection on skill development.	To investigate the impact of overprotection on the development of social and emotional skills.	Parent surveys and interviews with hearing impaired children.	Overprotected children develop low self-esteem and emotional dependence.	Overprotection limits the development of resilience and self-efficacy, which affects growth personal care of the child.
Pérez, A. and Gómez, C.	2017	Parental expectations and overprotection in children with disabilities.	To explore how parental expectations influence overprotection of children with disabilities.	Direct observation in family and school environments.	Low parental expectations reinforce the perception of disability in children.	It is crucial to educate parents to set realistic expectations and promote independence.

Brown, L.	2019	The overprotection and its impact on children with hearing loss.	Examine the relationship between overprotection and the development of children with hearing loss.	Longitudinal study with 150 families.	Overprotection is associated with lower levels of social competence in children.	Interventions aimed at parents can reduce overprotective behaviors and improve children's social development.
Martínez, M. and López, D.	2020	Effects of overprotection on the academic performance of hearing-impaired children	To evaluate how parental overprotection influences the academic performance of these children.	Quantitative analysis of academic data and parental surveys.	A negative assessment was found between overprotection and academic performance.	Encouraging independence in schoolwork can improve the academic performance of children with disabilities and auditory.

Source: Own elaboration

Table 2

Documentary matrix of overprotection in hearing impaired children (Continuity).

Author(s)	Year	Title of the study	Target	Methodology	Results	Conclusions
Chen, H. et al.	2021	Parenting styles and psychological outcomes in hearing impaired children.	To investigate how parenting styles affect psychological outcomes in hearing impaired children.	Cross-sectional study with 200 participants.	Overprotection on the use of the term is related to higher levels of anxiety and lower self-esteem in children.	Parenting support programs can help to adopt more balanced parenting styles, favoring the psychological well-being of children.

Rodríguez, P. and Sánchez, E.	2022	Overprotection and its impact on the social integration of children with disabilities hearing loss.	To analyze how overprotection affects the social integration of these children.	Semi-structured interviews with parents and educators.	Overprotection limits opportunities for social interaction, affecting integration.	It is essential to promote participation active participation of children in social activities to improve their integration.
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Source: Own elaboration

Table 2 shows a comprehensive view of how parental overprotection affects various aspects of development in hearing impaired children. The results indicate that this behavior, although motivated by the desire to protect, has significant negative consequences in key areas such as children's autonomy, social integration, academic performance and emotional health, as parental overprotection directly limits children's autonomy by restricting their opportunities to face challenges and solve problems.

Based on the above, it is important to highlight that parental overprotection of hearing-impaired children is a significant barrier to their comprehensive development, as it limits their autonomy, affects their social integration, reduces their academic performance and has repercussions on their emotional well-being. However, the documentary results also explain that, with appropriate interventions, it is possible to transform this behavior into a more balanced parenting style. Encouraging autonomy, setting clear boundaries and promoting self-efficacy are key strategies to ensure that these children can reach their full potential in an inclusive and supportive environment.

Discussion and Conclusions

Discussion

While studies agree on the immediate effects of overprotection, there are discrepancies about its long-term impact. Morales and Fernandez (2018) argue that the effects can be mitigated if guidance programs that promote independence in children are implemented. On the other hand, Perdomo (2010) concludes that *"parental overprotection during childhood establishes patterns of emotional dependence that persist into adulthood, affecting self-confidence and the ability to make decisions"* (p. 75). These differences highlight that early intervention and guidance to parents is critical to reduce the negative effects of overprotection on their children's development.

The importance of a comprehensive approach to family support is evident in the studies reviewed. Bandura (1997) argues that *"self-efficacy is built from experiences of success, which implies that the child must have opportunities to face and overcome challenges independently"* (p. 67). This statement underscores the importance of parents not only providing emotional support, but also enabling autonomous learning experiences, crucial for the development of self-efficacy.

Resilience, defined by Masten and Monn (2015) as *"the ability to adapt positively to adverse situations"* (p. 82), is a key factor in the development of children with hearing impairment. According to these authors, a family environment that favors open communication and continuous emotional support contributes significantly to the strengthening of this capacity. In the context of the present study, it is observed that overprotective parenting styles,

although well-intentioned, tend to weaken the child's perception of competence, limiting his or her opportunities to face challenging situations on his or her own. This can lead to overdependence on parents and hinder the development of coping strategies. On the other hand, when parents promote autonomy in an environment of affection and accompaniment, fertile ground is created for children to strengthen their resilience by learning to solve problems, take measured risks and recover from difficulties. Thus, resilience does not arise from the absence of adversity, but from the way in which the child is accompanied to face it.

Gaxiola et al. (2011) argue that *"resilience is built when the child has the opportunity to face problems and solve them autonomously, under the supervision and not under the total control of the parents"* (p. 34). The studies reviewed show that the role of the family in the development of self-efficacy and resilience is essential, and that counseling programs can be valuable tools for parents. As highlighted by Luthar et al. (2000), *"family counseling programs not only teach parents how to deal with overprotection, but also show them the importance of allowing their children to face small challenges"* (p. 45).

As Gonzalez (2018) notes, *"overprotected children tend to develop a perception of helplessness that hinders their active participation in everyday activities"* (p. 125). This demonstrates how constant parental intervention creates emotional and functional dependency, preventing the child from acquiring skills necessary for independence. In addition, the lack of autonomous experiences negatively affects their self-esteem and self-confidence.

This perception of disability not only has individual implications, but also restricts the child's integration in social contexts. Rodriguez and Sanchez (2022) emphasize that *"overprotection limits opportunities for social interaction, affecting the child's integration into his or her educational and community environment"* (p. 95). This points to the need to promote experiences that allow the child to develop interpersonal skills essential for social adaptation.

Another relevant aspect is how parents' frustrated emotions influence their parenting style. Ballesteros (2017) points out that *"overprotection reflects more the insecurities and fears of the parents than the real needs of the child"* (p. 48). Ballesteros' quote highlights how parents' fear of their child experiencing difficulties leads them to avoid situations that could strengthen their resilience. This behavior, although well-intentioned, generates a cycle of dependency in the child and reinforces the parents' beliefs about their vulnerability.

In addition, this dynamic can affect family relationships in general, especially with other children. In many cases, siblings perceive favoritism towards the child with a disability, which generates feelings of jealousy and neglect. Rodriguez and Sanchez (2022) mention that *"parents should be aware of the need to balance their attention to avoid conflicts among children and promote an inclusive family environment"* (p. 98). If not properly managed, this perception of inequality can deteriorate fraternal bonds and increase tensions within the family nucleus.

The impact of overprotection is also seen in children's academic performance. According to Martinez and Lopez (2020), *"excessive parental intervention in homework reduces the child's ability to develop problem-solving and self-management skills"* (p. 40). This leads to the child's constant dependence on parents to complete tasks, which affects their performance and confidence in their academic abilities. In addition, this overprotective approach can generate conflicts with educators, who face difficulties in fostering the child's independence in the classroom.

On the other hand, children's emotional health is also affected by overprotection. Chen et al. (2021) found that *"overprotected children had higher levels of anxiety and lower self-esteem compared to those whose parents adopted a more balanced approach"* (p. 354). This finding highlights how lack of autonomy and constant parental intervention reinforce negative emotions and decrease the child's confidence in his or her ability to cope with challenges.

Despite the documented negative effects, several studies suggest strategies to mitigate overprotection. Luthar, Cicchetti, and Becker (2000) propose that *"family counseling programs*

can teach parents to balance emotional support with promoting autonomy in their children" (p. 45). These interventions not only benefit the child, but also help parents to manage their own emotions and fears, allowing them to build bonds based on mutual trust instead of constant control, thus favoring a more balanced relationship and a healthier family environment.

Conclusions

Overprotection of hearing impaired children is a complex phenomenon that, although it arises from the parents' desire to provide security and care, can have significant negative consequences on the child's overall development. This article has made it possible to explore how this behavior affects the child's autonomy, social skills, academic performance and emotional well-being, shedding light on a problem that needs to be addressed with sensitivity and precision.

One of the most salient aspects of the review is the relationship between overprotection and loss of autonomy. When parents assume excessive control over the child's decisions and activities, they limit the child's opportunities to explore the environment, make decisions and learn from their mistakes. This dynamic not only delays the development of critical life skills, but also reinforces a perception of inadequacy in the child, affecting his or her self-esteem and self-confidence.

It is important to highlight that parental fear and the perception of vulnerability in hearing impaired children are determining factors that feed overprotection. These emotions and beliefs lead parents to adopt a controlling role that, while seeking to avoid suffering, ends up depriving children of essential experiences for their growth. This highlights the need to balance emotional support with the promotion of independence in the family context.

Likewise, social skills are affected by overprotection. Hearing impaired children who are overprotected often have fewer opportunities to interact with other children, as their parents tend to restrict their participation in group activities for fear of possible rejection or communication difficulties. This can lead to social isolation which, in turn, limits the development of interpersonal skills needed to establish healthy relationships and deal constructively with conflict.

In academia, overprotection also creates significant challenges. Parents who complete homework assignments for their children or constantly intervene in the classroom, albeit with good intentions, prevent the child from developing problem-solving and self-management skills. This not only affects their academic performance, but also diminishes their sense of responsibility and their ability to handle educational challenges independently.

From an emotional perspective, the effects of overprotection are equally troubling. Children who grow up in an overprotective environment often develop high levels of anxiety, stemming from the belief that they are not capable of handling difficult situations without constant help from their parents. In addition, lack of exposure to challenging experiences limits their ability to build resilience, an essential skill for overcoming life's adversities.

Another relevant aspect is the impact of overprotection on family dynamics. Siblings of hearing impaired children may perceive favoritism toward the overprotected child, leading to feelings of jealousy, resentment, and neglect. These tensions can affect family cohesion and create conflicts that hinder the emotional well-being of all family members.

Practical Recommendations

Despite these challenges, it is important to recognize that overprotection is not irreversible. The studies reviewed suggest that parents can be guided to adopt more balanced practices that foster their children's independence, even in the context of a disability. Family counseling programs, which include specific strategies to promote autonomy, self-efficacy and resilience, have proven to be effective in this regard.

One of the key strategies to address overprotection is to teach parents to set healthy boundaries that allow the child to explore and make choices within a safe environment. This includes fostering the child's active participation in daily activities, adapted to his or her abilities and interests, and encouraging him or her to progressively assume responsibilities, which reinforces his or her confidence and sense of competence.

Another fundamental approach is to promote social inclusion. Facilitating hearing impaired children to participate in group activities and bonding with their peers not only improves their social skills, but also gives them a sense of belonging. Inclusion should not only be an individual effort of the family, but a collective goal of the community and the educational environment.

It is also essential that parents receive support in managing their own emotions, especially fear and anxiety, which fuel overprotection. Training in emotional management techniques and awareness of the impact of their children can help them adopt a more balanced and empowering perspective on parenting.

Therefore, it is concluded that overprotection of hearing-impaired children is a multifaceted problem that requires attention and action on the part of families, communities and professionals involved in the education and care of these children. Although it arises from the desire to provide care and security, overprotection limits the child's overall development, affecting his or her autonomy, social skills, academic performance and emotional well-being.

To address this premise, it is crucial that parents reflect on their practices and seek a balance between support and independence. Promoting autonomy does not mean abandoning the child, but rather giving him or her the tools and confidence to explore, learn and grow in a safe environment. This approach not only benefits the child, but also strengthens family relationships and fosters a healthier and more equitable dynamic among all family members.

In addition, society has an important role to play in this process by promoting an inclusive culture that values the abilities of people with disabilities and offers them opportunities to participate fully in social, educational and professional life. This cultural shift, combined with targeted family interventions, can transform the experience of hearing impairment into an opportunity for growth and empowerment.

Consequently, it is concluded that overprotection is directly associated with decreased opportunities for children to face challenges, learn from their mistakes and develop confidence in their own abilities. Self-efficacy is particularly affected, as children, in this case hearing impaired, do not experience situations that allow them to prove that they are capable of handling problems on their own. Similarly, resilience is limited, as children do not face and overcome difficulties that are crucial for their emotional and social development.

Although this article focuses on the effects of overprotection, it also opens the door for future research to explore effective approaches to its prevention and management. Training and ongoing support for families, along with the creation of inclusive environments, are essential steps to ensure that hearing impaired children can reach their full potential and enjoy a full and meaningful life.

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LIFE, DEATH, AND SUICIDE - A PHENOMENOLOGICAL AND PARADOXICAL PERSPECTIVE

VIDA, MORTE E O SUICÍDIO – PERSPECTIVA FENOMENOLÓGICA E PARADOXAL

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ABSTRACT

Keywords:

Suicide attempt. Existential sense. Sociocultural factors. Phenomenology. Psychology.

This article addresses the theme of suicide from the perspective of the meaning of life and death. The objective is to reflect on the attempt against one's own life based on the theoretical-practical paradigms of phenomenology and conceptions of psychoanalysis, philosophy, and sociology, as a methodological strategy to understand this phenomenon. Therefore, it follows a design based on integrative review, seeking in the literature both converging and diverging factors and conceptions that may lead a person to this act. The conducted researches address sociocultural, psychological, and existential components that enable understanding. It is acknowledged that both attempts and consummations generate disorders and suffering for these individuals, their families, and society, justifying the need for further studies. It is a complex and multifactorial problem of psychological, existential, sociocultural, and political nature regarding mental and public health. Results are sought to show that in such an act there are elements of analysis that converge with potential and significant psychological, existential, and social factors. It is proposed to focus on the paradoxical aspect of the act against one's own life based on

an expanded understanding of the phenomenon. It is expected to conclude that within the act itself, there are vital and potent elements that can fundamentally reconstruct the sense of living for these individuals.

VIDA, MORTE E O SUICÍDIO – PERSPECTIVA FENOMENOLÓGICA E PARADOXAL

RESUMO

Palavras chave:

Tentativa de suicídio, sentido existencial, fatores socioculturais, fenomenología, psicologia.

O presente artigo trata da temática do suicídio pela perspectiva do significado da vida e da morte. O objetivo é refletir sobre a tentativa contra a própria vida com base nos paradigmas teórico-práticos da fenomenologia e concepções da psicanálise, filosofia e sociologia, como estratégia metodológica de compreender esse fenômeno. Segue, portanto, um desenho embasado na revisão integrativa, em que se busca na literatura, tanto os fatores e concepções que convergem como divergem ao que pode levar uma pessoa a esse ato. As pesquisas realizadas abordam os componentes socioculturais, psicológicos e existenciais, que oportunizam a compreensão. Reconhece-se que a tentativa e a consumação geram transtornos e sofrimentos a essas pessoas, à família e à sociedade, o que justifica a necessidade de novos estudos. É um problema complexo e multifatorial de cunho psicológico, existencial, sociocultural e político no que concerne à saúde mental e pública. Busca-se resultados de que em tal ato existem elementos de análise que vão ao encontro de potencialidades e significativos fatores psicológicos, existenciais e sociais. Propõe-se focalizar o aspecto paradoxal do ato contra a própria vida baseado na compreensão ampliada do fenômeno. Espera-se concluir que no próprio ato concentram-se elementos vitais e potentes que podem, fundamentalmente, serem reconstituintes do sentido de viver para essas pessoas.

VIDA, MUERTE Y SUICIDIO - PERSPECTIVA FENOMENOLÓGICA E PARADÓJICA

RESUMEN

Palabras clave:

Intento de suicidio, sentido existencial, factores socioculturales, fenomenología, psicología.

Este artículo aborda el tema del suicidio desde la perspectiva del significado de la vida y la muerte. El objetivo es reflexionar sobre el intento contra la propia vida basado en los paradigmas teórico-prácticos de la fenomenología y las concepciones del psicoanálisis, la filosofía y la sociología, como estrategia metodológica para comprender este fenómeno. Por lo tanto, sigue un diseño basado en la revisión integradora, buscando en la literatura tanto factores y concepciones convergentes como divergentes que puedan llevar a una persona a este acto. Las investigaciones realizadas abordan componentes socioculturales, psicológicos y existenciales que permiten la comprensión. Se reconoce que tanto los intentos como las consumaciones generan trastornos y sufrimiento para estos individuos, sus familias y la sociedad, justificando la necesidad de más estudios. Es un problema complejo y multifactorial de

naturaleza psicológica, existencial, sociocultural y política en lo que respecta a la salud mental y pública. Se buscan resultados que muestren que en tal acto hay elementos de análisis que convergen con potenciales y significativos factores psicológicos, existenciales y sociales. Se propone centrarse en el aspecto paradójico del acto contra la propia vida basado en una comprensión ampliada del fenómeno. Se espera concluir que dentro del propio acto hay elementos vitales y potentes que pueden reconstruir fundamentalmente el sentido de vivir para estos individuos.

Introduction

The aim of this article is to reflect on the phenomenon of suicide. The hope is to broaden our understanding in such a way as to subsidize approaches in the field of mental and public health, as a means of prevention and of being able to respond immediately to the suffering caused to these people and their families. This phenomenon involves the various contexts and factors involved, such as social, political, educational, psychological and existential, which interact and influence the act. In this scenario, the focus of this phenomenon is on the priority of suffering, including judgement, normalization and disciplinarization. This study, therefore, seeks to destigmatize the act only by isolated determinants, such as psychological distress, factors external to the individual or having no way out of conflicts. In this way, it innovates by looking for powerful psychological and existential elements that enable new meanings in living. To do this, we used a paradoxical perspective based on phenomenological-existential concepts. The paradox is evidenced by the fact that in the act in which the desire to die is implicit, there is also the desire to live. The ontological and paradoxical reflection, therefore, has in the attempt against life itself the possibility of encountering the very meaning of existence.

The bibliography on the phenomenon of suicide is consistent and diversified, although quantitatively reduced, especially in terms of phenomenology. Thus, we adopt the phenomenological foundations of Edmund Husserl, Martin Heidegger, contemporary authors, and the theoretical approach to psychic mechanisms of psychoanalytic theory, especially Freudian theory. Concepts originating in philosophy are essentially in dialogue with this theme, with references from Baruch Spinoza and Jean-Paul Sartre, and through the social prism of Émile Durkheim. Psychopathological aspects are considered by Neury José Botega, and psychological aspects such as depression, anxiety and anguish by researchers in the field of psychology and psychoanalysis.

According to data collected from the Ministry of Health by the Federal Attorney General's Office (2019): "In Brazil, 11,000 people take their own lives every year, making suicide the fourth leading cause of death among young people aged between 15 and 29." Ordinance No. 1876 of August 14, 2006, based on the organic laws of the Federal Constitution, which establishes prevention guidelines, considers "that the phenomenon of suicide is a serious public health problem that affects all of society and can be prevented" (Ministry of Health, 2006). Epidemiological data is also taken into account: mental disorders, especially depression; repeat offenders; users of alcohol and other drugs; prison and clinic inmates; victims of sexual violence; rural workers exposed to toxic agents; people with chronic degenerative diseases and HIV/AIDS; indigenous populations, among others (Ministry of Health, 2006).

The method is based on knowledge and reflections on suicide obtained from scientific literature and seeks to associate the motives and factors that can influence a person to commit the act. Gonçalves, Gonçalves and Marques (2021) explain the paradigms that therefore form part of the foundations of literature. They explain that the concepts of Husserl's and Heidegger's phenomenology are based on what is in the essence of a phenomenon. In Husserl (1989) through the concept of "pure seeing" and in Heidegger (2009) through the concept of *Dasein* (being-ai). While the qualitative research model of a paradigm that comes from phenomenology is understood as a "method of scientific investigation". The researcher refers to "imaginative variation", a strategy that "allows him to discover the structural themes extracted from the textual descriptions produced during the process of phenomenological reduction" (Gonçalves, Gonçalves & Marques, 2021, p. 11).

Method

As outlined, the methodology is aimed at understanding the phenomenon of suicide using knowledge from different areas: phenomenology, psychoanalysis, psychology, philosophy and sociology. The references of the integrative review helped to identify related

bibliographies, providing an opportunity for dialogue between the contexts of the literature and the individual's phenomenological experience. Another methodological aspect is to use studies from around the last decade that are consistent and in-depth, as well as the few recent ones, especially those with a phenomenological reference. The method of searching for literature that speaks to the proposed theme is anchored by broad approaches - psychological, social, existential, cultural, political - with the aim of broadening the understanding of suicide.

According to Gonçalves, Gonçalves and Marques (2021), the phenomenological method, which makes description possible, is explained by them as "returning to things in themselves in order to discover the essential structures of the phenomenon" (Gonçalves, Gonçalves & Marques, 2021, p. 15). They argue that the prior diagnosis of the suicide attempt can be identified by describing the essential structures of the lived experience. The method of "phenomenological reduction" supports this process by suspending the investigator's previous convictions and focusing on the "structures of the essence of the phenomenon". The narrated experience allows us to find meaning in the existential sense and the symbolic image of death. In this way, the description of the phenomenon as it happens purely in the experience fosters the analysis, as well as the result based on the paradox between the choice to live and not to live.

In summary, the discussion and conclusion will be based on the relationship between theoretical foundations and the motives, factors and subjectivities that permeate the suicide phenomenon. The aim is to find elements of analysis in the literature that meet human psychological and existential potentialities and meanings. This reflective method aims to focus on the paradoxical aspect of the act against one's own life, based on a broader understanding of the phenomenon. The aim is to discuss and conclude that the suicide attempt concentrates vital and powerful elements that can fundamentally reconstitute the meaning of life for these people.

Results

Fundamentals of Phenomenology

The foundations of phenomenology make up the paradigmatic scope that makes it possible to understand the phenomenon of suicide. It is important to understand the concepts underpinning it, which were first developed by Edmund Husserl (1859-1938). The proposition of this theoretical-practical approach guides both the understanding of conceptions of this approach and the phenomenon under study, in a dialectical process. Husserl, influenced by René Descartes with regard to the *cogito*, proposes reflecting on doubt and thus producing knowledge. It is understood that the first absolute data is obtained from the experience of reflecting, in other words, the acquisition of intuitive knowledge through the practice of cogitating, reflecting or understanding (Husserl, 1989). This formulation refers to the process of consciousness, characterized by the perception of what is observable and reflected in the movement of becoming conscious. In this way, Husserl (1989) builds the basis of his theory: "All intellectual experience and all experience in general, when carried out, can make itself the object of a pure seeing and grasping, and in this seeing, it is an absolute given" (Husserl, 1989, p. 55). For Husserl, this mental process consists of "the absolute and clear giving of oneself, self-presentation in the absolute sense". He then created the concept of "phenomenological reduction", the method of which is the perceptive movement of what can be seen and elaborated by the individual. This approach enables a dialog between the foundations of phenomenology and the individual's experience of committing the act against their own life.

In Heidegger (2009), phenomenology develops by elucidating the human existential meaning in relation to the phenomenon of death. According to him, the "phenomenon" is that

which is evident, which reveals itself, giving rise to the meaning of phenomenology: "to let and make see for itself that which shows itself, as it shows itself from itself." (Heidegger, 2009, p. 74). The relationship that Heidegger (2009) attributes to death is dealt with by the "phenomenon of healing", the meaning of which is the movement of reflecting on one's own existence and being in the world, that is, the awareness of the meaning of "being" and "being-in-the-world". Heidegger (2009) presents "consciousness as a call for healing" (Heidegger, 2009, p. 353), which means the exercise of reflecting on the meaning of existing. The idea of the "existentiality of the self" is concluded through the "everyday self-interpretation of presence" (Heidegger, 2009, p. 401-402). He highlights the phenomenon of "being-being-all", which implies the meaning of "end", in other words, the ontological understanding of "being-for-the-end": an existential concept of death as a phenomenon of life recognized by the being of presence, or rather, the perception of the passage from "being of presence" to "no longer being presence" (Heidegger, 2009, p. 309-344). The dialog between Heidegger's conceptions and the proposal of this study is established by the correlation between the experience of suicide and the meaning of the phenomenon of death for the individual.

Peres (2017) explains that Husserl's creation of phenomenological principles occurred when he "developed for the first time in detail the phenomenological method of analyzing the essences of psychic experiences" (Peres, 2017, p. 118). Husserl's interest, according to Peres (2017), was to "employ the psychological method to elucidate epistemological problems" (Peres, 2017, p. 119-120). Husserl creates phenomenology by "data obtained by internal perception", as well as "*a priori* knowledge about subjectivity", this cognition being backed up by the science of essences. He concludes that the experience is a real-factual psychic event, singular and unrepeatable, although the objective content can be repeated.

Referencing Husserl, Heidegger, Sartre and Merleau-Ponty, Feijoo and Mattar (2014) explain the three elements for phenomenological research: phenomenological reduction, description of the vectors internal to the phenomenon and making experiences explicit. The authors say: "Husserl used the phenomenological method to investigate the phenomenon of consciousness" (Feijoo & Mattar, 2014, p. 443), in which intentionality is a process of transcendence of itself. They elucidate the description of the vectors internal to the phenomenon, "insofar as the researcher accompanies the very constitution of consciousness in act" (Feijoo & Mattar, 2014, p. 443). This thought reflects on a person's conscience when carrying out the act of causing their own death.

Dutra (2011), based on Heidegger, interprets the statements of teenagers who have attempted suicide by considering the concepts of "being-there, being-in-the-world, anguish and being-for-death". It rescues the idea of the intention of death as the last existential possibility, as well as the representation of what is most concrete that the human being can count on. Based on Heidegger's proposition, the author characterizes the anticipation of death by the individual's lack of openness to possibilities and the construction of meanings of finitude. The anguish generated by the act of suicide and the misunderstanding of a viable or unique path differs, however, from the meaning of "being-for-death". The author suggests facing anguish and situating oneself in the world, including experiencing it as a possibility of "being", which even includes death.

Rocha, Boris and Moreira (2012), through research carried out with patients in a psychiatric hospital, understand that "the suicidal experience can be recognized as a worldly experience, since it is not possible to understand it without its condition of imbrication with the world" (Rocha, Boris & Moreira, 2012, p. 69). From this angle, the authors point out that "the cultural and socio-economic conditions surrounding suicide must be systematically considered and studied in depth so that this human phenomenon can be better understood as mundane" (Rocha, Boris & Moreira, 2012, p. 69). This understanding is based on a systemic vision in which family, religion, drugs and society all play a role in influencing suicidal behavior.

Fukumitsu (2019) understands that pain and suffering are marked by a lack of clarity about the meaning of life. For her, "The person with suicidal ideation projects onto death the possibility that they can't achieve in life." (Fukumitsu, 2019, p. 82). He argues that there is a request for help in the act and that it is related to the desire to live and not to die. Fukumitsu (2018) approaches suicide beyond an individualized or private approach, but from a social and public health perspective. For Fukumitsu (2014) suicide is not characterized by the crystallization of an inherent behavior, but by a singular movement produced by impulse. For her, "The psychotherapist's job, therefore, should not be to prevent death, but, in fact, to promote the expansion of situations in which the client can feel alive" (Fukumitsu, 2014, p. 271).

Feijoo (2019) diverges from the moralizing and labeled views of suicide, such as the condition of sin in the Middle Ages and pathology in the Modern Age. It considers social, economic, political and cultural factors, but adds what is represented in the realm of human existence in the singularities and particularities of the individual. Feijoo's (2019) phenomenological stance is in line with reflections that seek to understand the phenomenon of suicide without the pathological premise, but from feelings, thoughts and attitudes that start from autonomy and the freedom to be and choose what is meaningful and adds to the person's interests. Feijoo (2019) presents his therapeutic attitude towards patients who want to end their lives: "We remain together with the person who is thinking of ending their life, listening attentively so that the other person can take more time with their (in)decision" (Feijoo, 2019, p. 171). She proposes a clinic that opens up space to be in the phenomenon without suffering prejudice, but to be in contact with the experience from the point of view of producing a new relationship and being in the essence of the experience. She concludes that meaningful affections, welcoming the search for help and being with the subject in the ambivalence of the decision to live and die, make it possible to choose to live and give new meaning to existence.

In addition to referring to pre-existing studies, the aim is also to understand the act of suicide through the therapeutic practices of contemporary phenomenologists. Fukumitsu (2019) approaches it through intentional motivation, the existential message of which is the symbolic representation of death. Rehfeld (2021), based on Heidegger, reflects on the existential and ontological meaning of life, death and "being-in-the-world", which is recognized in a paradoxical way between the meaning of life and death: "The question of the meaning of life is given by the awareness of our finitude" (Rehfeld, 2021, p. 283).

The Social Gaze

The social approach to suicide is based on the treatise by sociologist Émile Durkheim (1858-1917), founded on social science, which makes it possible to analyze this phenomenon by understanding it through social determinations. Durkheim (2019) emphasizes the social aspects and characterizes suicide as a social symptom. It was, however, by looking at the various constitutions of societies that Durkheim (2019) found in "the nature of societies themselves the causes of the disposition that each of them has towards suicide" (Durkheim, 2019, p. 383). Since it is considered a "social pathology", according to Durkheim (2019) "everything that is morbid can be avoided", understanding the act of suicide as a morbidity that can be treated, however, since it is a social symptom, it is to treat society, which, on the other hand, there is no technology to treat.

The conclusion of Durkheim's study is an attack on the constitutions of societies - political, educational, religious, family and labor - which go in the opposite direction to "a moral force capable of constituting the law for men; but even so, it must be sufficiently involved with the things of this world to be able to estimate their true value" (Durkheim, 2019, p. 502). The resolvability lies in the theoretical and philosophical imagination, that is, in the realization of

humanity's historical development, which does not allow for a reform of society and which, according to the sociologist, should be done by decentralizing its "centers of forces", which operate in a plastered and often perverse logic. Rescue or confrontation, according to Durkheim, is not about restoring a society that has already been worn down and overcome, but about searching for what he called the "germs of new life", which both lies somewhere in history and is the process to be developed. If it can be understood that germs contaminate, then what are these germs of society that must contaminate society itself? What real existential and social meanings of life need to spread?

Based on Durkheim, Ribeiro and Moreira (2018) understand the phenomenon of suicide among young Brazilians from a social perspective. The authors go back to concepts from ancient Greece in which the principle "that empties individuality as a cause" is connoted. They argue that every society has "a definite disposition towards suicide" and add: "Suicide is the result of the ordering pressure that social cohesion exerts on individuals" (Ribeiro & Moreira, 2018, p. 2822), while the individual aspects fall to public mental health because it is a psychological disorder. The authors defend the thesis that "there is a regular stock of suicides in every society and there are regularities that can be identified in order to determine the social causes" (Ribeiro & Moreira, 2018, p. 2822).

The psychosocial and environmental view of suicide, attempt and ideation is presented by Minayo, Figueiredo and Mangas (2019) in a study carried out in long-term care institutions for the elderly. They point to the productive psychosocial determinants of the related problems. They are based on Durkheim's "moral constitution of society", which determines acts against life itself, including by a specific "collective force" coming from each population. They also refer to family conflicts, drug use, mental disorders such as depression and anxiety, illnesses, unfavorable environmental conditions, among others, which influence and determine the desire to die and resolve these problems. Protective factors include religiosity, life satisfaction and optimism, autonomy, healthy relationships and communication, and pharmacological treatment.

Philosophy Assumptions

Baruch Spinoza's philosophy discusses the issue of suicide through the idea of a free and autonomous being, based on the definition of God as a "substance consisting of infinite attributes" (Spinoza, 2017, p. 13). According to the philosopher, an attribute is "that which the intellect perceives of a substance as constituting its essence" (Spinoza, 2017, p. 13). Still according to this Spinozian formulation, the substance he refers to is "that which exists in itself and is conceived by itself, that is, that whose concept does not require the concept of something else from which it must be formed" (Spinoza, 2017, p. 13). This elaboration deals with autonomy and freedom of thought, which contributes to understanding the act that a person produces in order to end their life. The notion of affection that dialogues with suicide refers to its influences: "By affect I mean the affections of the body, by which its power to act is increased or diminished, stimulated or restrained, and, at the same time, the ideas of these affections" (Spinoza, 2017, p. 98).

It can be seen in Ming-Wau et al. (2020) results of research based on existential phenomenology, which understands the lived experience of people in their decision to no longer live. The authors are guided by Sartrean philosophy, which focuses on being free and freedom of choice. Ming-Wau et al. (2020) conceive of suicidal behavior "as a multifactorial and complex phenomenon, involving psychological, cultural, biological, genetic and social factors" (Ming-Wau et al., 2020, p. 1312). The authors show that, for Sartre, "suicide is a man's choice as the last act of his life" (Ming-Wau et al., 2020, p. 1313) and treat it as "absurd", as it seeks to finalize the "project of being", which is driven by choices and actions that give meaning to life. The confluence with the act of suicide is at the point where freedom of choice produces

ambivalence.

Psychological and Psychiatric Aspects

It is essential to address depression because we understand its psychological and organic structures and the intervening factors. Scientific literature also identifies it as one of the main psychological symptoms related to suicide, especially in adolescents. One of the specific studies on this issue is observed in Melo, Siebra and Moreira (2017), which finds significant aspects of depression in adolescents and its consequences. In addition to the relationship between depression and suicide, the authors highlight predominant symptoms of "sad mood, irritability and anxiety" which, because they imply other disorders, warn of "schizophrenia and bipolar disorder" (Melo, Siebra & Moreira, 2017, p. 22-23). According to them, the depressive experience is constituted by the meanings involved and how the individual relates to the reality of the world. Adolescents are thus constituted "with and in the world".

Souza and Moreira (2018) expose new elements from other perspectives on depression. The authors consider the psychological, biological, cultural, social and existential aspects, among others, which are related to the complexity of this symptom. The phenomenological approach they discuss underpins the reflection that associates depression with suicide. Their defense stems from the problematization of studies that emphasize external influencing factors as the sole and determining causes of movements to provoke voluntary acts against one's own life. They understand the depressive state from singular meanings in an ambiguous process and intersubjective relationships (Souza & Moreira, 2018). They debunk common-sense ideas about confusing feelings of sadness with depression, as well as the depressive state as a natural reaction to an unusual situation or a depressed life. Souza and Moreira (2018) explain that melancholic depression, which is characterized by depression-sickness, due to its severity, is a strong influence on suicide.

From a psychoanalytic perspective, anguish is presented by Homem (2020) as an important human affection. This idea is brought about by the incessant search of human beings today to anesthetize what is produced by anguish and to try to avoid or deny it. The psychoanalyst refers to people's attempts to "overthrow consciousness", "kill subjectivity" and reiterates that "the hole in here is very difficult". Anguish is characterized by a void in which nothing can be found, as she says "a void of language", "a void of meaning". Homem (2020) talks about the impossibility of getting rid of the "suffering of the soul", this emptiness, which is proper to human nature, "constitutive of the human". In this sense, we question the dissemination of the stifling of anguish, in the form of momentarily plugging the hole with the use of psychotropic drugs, instead of getting in touch with it, since it is more of an affection. This psychoanalytic framework presented by Homem (2020) points to the importance of understanding anguish as an affection intrinsic to the human being, as well as indicating a process to be gone through by the subject in life. In this sense, psychoanalytic theory highlights the value of depathologizing the anguish implicit in the phenomenon of suicide.

From a psychopathological perspective, according to Botega (2014), mental disorders are associated with suicide. He highlights "depression, bipolar mood disorder and dependence on alcohol and other psychoactive drugs". He also correlates other disorders, such as "schizophrenia" and "personality traits", which aggravate the risk. The author addresses strategies and access to treatment, and the cultural influence of each population, such as gender, age group, among other variants. With regard to statistics, the author points out that attempted suicide is higher than completed suicide and the risk increases with the first attempt. Botega (2014) explains: "A suicide attempt is the main risk factor for future suicide. After an attempt, it is estimated that the risk of suicide increases by at least a hundred times compared to the rates present in the general population" (Botega, 2014, p. 233). The indication, therefore,

is that these people should be treated soon after the first act and that through this strategy they can "re-signify this experience" (Botega, 2014, p. 233).

Theoretical Fragments of Psychoanalysis

The bibliographic selection of elements of psychoanalysis is of fundamental importance for understanding the phenomenon of suicide. These are references that deal with psychic mechanisms discovered by the psychoanalysis of Sigmund Freud and his successors. It goes back to Freud's (2010) publication of *Beyond the Pleasure Principle*, 1920, when he revisited the theory of drives in order to understand dreams and repetitive behaviors of a traumatic nature from the perspective of the pleasure principle. However, at this point, he questions the theory itself: why do we repeat what is unpleasant, if we are driven by the pleasure principle? From this, Freud arrives at the concept of "repetition compulsion", an incessant attempt to elaborate the conflict, but being in the position of being active and not passive to the suffering. He then formulates the existence of the death drive, which causes the repetition compulsion. In it, - unlike the drive for life, in which the subject will try to adapt to new external stimuli, renewing themselves and therefore prolonging life, - the subject will always be repeating themselves, never innovating, which ends up shortening the path back to inaction by leading the person faster to the end of life due to their inability to adapt to external factors. He concludes his theory by recognizing the dualistic version, i.e. the existence of two great drives, one "of life" and the other "of death". For Freud (2010), the death drive is therefore conservative, regressive and, consequently, self-destructive. This psychoanalytic reference, in an intimate relationship, understands the act provoked against life as having in the death drive the experience of the anticipated state of non-living.

Freud (2010), in *Mourning and Melancholia*, points out that these two psychic phenomena are similar in terms of the way they are expressed, the depressed state of mind or sadness, but that they differ in terms of their pathological degree. While mourning, according to Freud (2010), "is the reaction to the loss of a loved one or of an abstraction that takes their place, such as homeland, freedom, an ideal, etc." (Freud, 2010, p. 171-172), melancholy is seen as an aggravating symptom, as the author emphasizes: "by a painful dejection, a cessation of interest in the outside world, loss of the capacity to love, inhibition of all activity and diminished self-esteem" (Freud, 2010, p. 172). Freud (2010) observes that in mourning there is no loss of self-esteem, whereas in melancholy, in addition to this factor, there is a loss of the I (or *ego*); in this way, Freud defines melancholy: "he has suffered a loss relative to the object; his statements indicate a loss in the I itself" (Freud, 2010, p. 178). When dealing with the "conflict of ambivalence", the individual is affected by the duality of the investment of the love object, i.e. the regression to the identification towards the sadistic stage. Freud addresses the relationship between the "conflict of ambivalence" and "suicide": "Only this sadism solves for us the enigma of the inclination to suicide, which makes melancholy so interesting - and so dangerous" (Freud, 2010, p. 185). According to him, this is an "enigmatic understanding", in which the individual turns against their Self in a sadomasochistic process of mistreatment and self-destruction. It can thus be inferred that the Self's self-destructive process can culminate in concrete destruction, i.e. the self-inflicted death of the subject

Carvalho (2019, p. 43) refers to Freud's conception of suicide as "a murder of the evil object that the individual believes he has become". From this perspective, the problem is understood as a search for restoration, which the psychoanalyst complements by pointing out the motivations that lead individuals to suicide. The author's hypothesis indicates that "suicide reveals its paradoxical side, because it is self-conserving" (Carvalho, 2019, p. 43). The reflections produced by her and by the phenomenological-existential framework, point out that in the act against life there is a movement driven to continue existing, as well as the opposite, the image of not being alive, by a process motivated to get rid of existential pain or psychic

suffering, can be both creative and powerful, because one would find in death the solution to life. Carvalho's (2019) analysis exposes psychic pain, creativity, suicide and the conflict of this interrelationship. She translates these understandings by giving us the poetic expression of Antonin Artaud (French poet - 1896-1948): "If I kill myself, it's not to destroy myself, but to rebuild myself" (Carvalho, 2019, p. 47).

Sociocultural and Behavioral Factors

According to Public Health Policies, the Health Surveillance Secretariat (2019) conducted a survey published in Epidemiological Bulletin 15 on exogenous intoxication, identified as the main method used by people who attempt suicide, as well as consummate the act. The study conceptualizes attempted suicide as referring to "any non-fatal suicidal behavior, such as self-inflicted poisoning, injury or intentional self-inflicted damage" (Secretaria de Vigilância em Saúde, 2019, p. 1). Other studies seek to understand suicidal behavior in specific populations and find that it occurs in various contexts. Sol et al. (2022) presented data on the prevalence of this behavior in medical students "throughout life", by variables of "suicidal ideation, plan and attempts". The prevalence rates found were 27.7% for ideation, 12.5% for plans and 5.7% for attempts. For the last 12 months, prevalence rates were 18.9% for ideation, 6.1% for plans and 1.7% for attempts. (Sol et al., 2022, p. 4). The survey found mental disorders in 50% of cases, with major depression in 59.4%, and factors associated with alcohol and other drug abuse and stress from excessive academic work.

Simões et al. (2022) observed factors related to suicidal acts based on the discourse of adolescents who had committed suicide. The study was carried out on a sample from a Psychosocial Care Center (CAPS). In this context, triggering reasons were noted, such as changes in the life cycle at a stage when biopsychosocial development produces a new relationship with life and in the processes of socialization and identity formation. The authors highlight the position of this public in putting themselves in situations of risk, including those located in a social context vulnerable to violence. It has been shown to interact with internal factors such as anxiety, distress, depression, personal and family conflicts, poor self-esteem and self-image. Complicated experiences in childhood and adolescence were identified, characterized by significant losses, sexual abuse and physical and psychological violence. It is recognized that factors internal and external to the individual and those of a socio-cultural nature converge in an inter-relational process.

In the sense that factors determine or influence suicide attempts, Barbosa et al. (2022) present them from non-communicable diseases such as depression, which is associated with suicidal acts in adolescents. The study highlights social vulnerability, obesity associated with unhealthy eating, the use of alcohol, tobacco, drugs and physical inactivity. They consider the social determinants of poverty to play a role in depression, linking it to other non-communicable diseases and obesity. Based on Barbosa et al. (2022), that depression is a "risk factor" that is closely associated with suicide and that physical activity is an important "protective factor" because it increases neurogenesis and hippocampal value, among other benefits to the body, while physical inactivity has been associated with depression and the risk of suicide.

Discussion and Conclusion

The integration of multiple theoretical conceptions related to suicide - phenomenology, psychology, psychoanalysis, psychiatry, sociology and philosophy - add up to a broader understanding of this phenomenon. The psychological, existential and sociocultural aspects predominate in the notes highlighted by the authors. Therefore, we discuss the possibility of

interrelating these approaches and finding elements that understand what leads a person to produce an act that leads to death. The conclusion is that elucidating the meaning of being alive, the reality of death and the symbolic or imaginative representation, gives new meaning to life, death and the act itself. This reflective path presents relevant theoretical and practical points that complement each other and sometimes diverge, but nevertheless corroborate the broad and complex vision of the phenomenon.

Through phenomenology, problems are solved by analyzing everything in itself, as Husserl (1989) refers to the "method of analyzing essences in the sphere of immediate evidence" (Husserl, 1989, p. 34-35). This is in line with the purpose of this study, which is to observe and analyze suicide based on the clarity that the individual who commits this act has in this experience. According to Heidegger, understanding is based on meanings and senses in the integration and elucidation of the phenomena of death and suicide. According to him, this explains the phenomenon of "power-being-all", or rather, the totality of senses and meanings of life and death. The meaning of "end" is implied, the ontological understanding of "being-for-the-end" expressed by him: "an existential concept of death" as a phenomenon of life. It is related to death, the "phenomenon of healing", whose meaning is the movement of reflecting and being aware of one's own existence and being in the world, being "consciousness as a call for healing" (Heidegger, 2009, p. 353), that is, the incessant movement of seeking awareness of the meaning of existing, which is paradoxically revealed in suicide. Attempted suicide is a search for life through the imaginary representation of death.

Contemporary authors with a phenomenological basis present elements that underpin the understanding of the self-inflicted act against life. Feijoo and Mattar (2014) characterize it by intentionality, they understand it as a process of transcendence of oneself, or rather, the subjective manifestations represented in suicide happen through a conscious act, and awareness of it can give it new meaning. Dutra (2011) uses these propositions to redeem the intention of death as the last existential possibility and points to the representation of what is most concrete that the human being can count on. In the psychological clinic, Fukumitsu (2019) treats it through intentional motivation, whose existential message comes through the symbolic representation of death. His therapeutic practice is marked by the integral expression of feelings: "release of repressed pain" (Fukumitsu, 2018, p. 219), whose paradoxical effect of this process occurs through the direct contact of psychological elements, enabling the construction of new meanings. Rehfeld (2021) approaches the spectre of suicide from the perspective of the existential and ontological meaning of life, death and "being-in-the-world", which is paradoxically recognized by the meaning of life and death. For him, existential meaning is given by the awareness of finitude. Still in the psychological clinic, Feijoo (2018) proposes phenomenological analysis, by investigating phenomena present in human existence, understanding suicide as an unnatural phenomenon. She analyzes it using the method of "phenomenological reduction", which *a priori* suspends psychopathological, judicial or Christian conceptions and opens up space to be in the phenomenon without prejudice, but in contact with the experience from the point of view of producing a new relationship, of being in the essence of that experience.

Durkheim's (2019) social science approach to the phenomenon of suicide analyzes it through social determinations, characterizing it as a social symptom. However, it was because he saw the different constitutions of societies that he found in "the nature of societies themselves the causes of the disposition that each of them has towards suicide" (Durkheim, 2019, p. 383). The attack he makes on the constitutions of societies - political, educational, religious, state, family and worker - accuses the opposite direction of "a moral force capable of constituting the law for men; but even so it must be sufficiently involved with the things of this world to be able to estimate its true value" (Durkheim, 2019, p. 502). The conclusion, according to Durkheim (2019), is to tackle this problem by restoring society, worn out and outdated, as

revealed in human history. He proposes the search for "germs of new life", which is both somewhere in history and the process to be developed. If we understand that germs contaminate, then what are these germs in society that must contaminate society itself?

In Ribeiro and Moreira's (2018) study, suicide is understood from the perspective of a social phenomenon, which "empties individuality as the cause". The aforementioned authors defend Durkheim's conceptions that each society has "a definite disposition towards suicide", which is a consequence of the social pressure exerted on individuals. Minayo, Figueiredo and Mangas (2019) portray suicide, suicide attempts and ideation by psychosocial and environmental determinants, understanding them as a "collective force" specific to each population.

We conclude that the convictions of Durkheim and contemporary authors contribute essentially to reflections on the paradoxical idea of suicide in relation to human existential meaning, because if social causes determine suicide, the counterpoint may lie in the idea that if there were no such causes, it wouldn't happen. However, it is believed that there will always be social causes because man is a social being, so this intrinsic dynamic will always exist. On the other hand, the sense of existing may or may not depend on these causes, due to the very sense of existence, that is, the choice to exist, dependent or independent of influencing factors, satisfactory or unsatisfactory. The fact is that the individual's life span is the time they have to find the meaning of being alive, which may even tempt or even interrupt their trajectory.

The conceptions originating in philosophy that dialog with the theme of suicide followed the references of Spinoza (2017), who conceives the idea of a free and autonomous being. The philosopher deals with the autonomy and freedom of thought that a person produces in order to end their life. This approach confers thought as a mental process with its own constitution and the recognition by the intellect of the essence of this psychic production. It characterizes the individual's power of autonomy, enabling them to perform the autonomous act reproduced in the suicide attempt. Through the Spinozian understanding of what affects the body or the meaning of the potency of significant affects, this study uses this conception when referring to the potency of acting for or against being alive or the imaginary of being dead, by recognizing in ambivalence itself, the production of an increase or decrease in the potency of what can be seen in the act of suicide.

The philosophical foundation based on Sartre is recalled by Ming-Wau et al. (2020) to understand the lived experience of people in their decision to try to take their own lives. The individual is seen from the Sartrian perspective of being free and having freedom of choice. Supported by Sartre, the authors express these thoughts in order to understand suicide as the choice of an act as the last of life, however, they recognize it as "absurd", because it interrupts the "project of being", through which the individual develops actions that give meaning to life. The authors conclude that existential freedom is allied to the act of trying to take one's own life. This formulation converges with the paradoxical idea that is evident in the act because it implies the desire to die, and also the desire to live. It follows that freedom of choice produces ambivalence, attraction and desire for death/life.

The psychological and psychiatric aspects related to suicide consist of symptoms such as depression and anguish. They are relevant signs to be addressed due to their psychological, organic and constituent factor characteristics, as scientific literature identifies them as indispensable, from a psychological point of view, for understanding suicide. Melo, Siebra and Moreira (2017) highlight significant aspects of depression in adolescents and the subsequent consequences. Souza and Moreira (2018) provide new insights into depression and its relationship with suicide. The authors consider the psychological, biological, cultural, social and existential aspects, among others, but the phenomenological approach they discuss is enough to clarify the depressive state. They understand the depressive symptom from singular meanings in an ambiguous process and intersubjective relationships, however, they see

"melancholic depression", which is characterized by "sick-depression", as the factor by which suicide is implicated.

Anguish, present in psychoanalytic literature and in the words of patients who have tried to take their own lives, is presented by the psychoanalyst Homem (2020) when she considers the importance of this affection for human beings. According to her, the idea is brought about by the population's incessant search today to anesthetize what is produced by anguish by trying to avoid or deny it. Homem (2020) talks about the impossibility of getting rid of the "suffering of the soul", this emptiness that is proper to human nature, because it is "constitutive of the human". Based on the theories presented, it can be concluded that there are divergent understandings of anguish, since it can be interpreted as a trigger for suicide and as a powerful affect for human psychic development.

The divergence of principles is also due to the psychopathological approach, according to Botega (2014), in which psychological disorders are associated with suicide. It highlights "depression, bipolar mood disorder and dependence on alcohol and other psychoactive drugs" and points to "schizophrenia" and "personality traits", which aggravate the risk of suicide when they correlate. However, the subjective aspects implicit in these psychological illnesses and disorders are debated by authors who understand them from other points of view, such as psychological symptoms, which can even show the individual elements and conflicts, when treated in a psychotherapeutic context, which, in the meantime, stimulate human psychological and existential development.

Freud finds in drives the recognition of the dualistic version, that is, the existence of two great drives, life and death. For the founder of psychoanalysis, the death drive is conservative, regressive and, consequently, self-destructive. It seeks to restore the inanimate condition of being that, after the experience of life, can only be obtained through the experience of death. On the other hand, the life drive pushes the organism to assimilate what is new and adapt to external stimuli, prolonging life by constantly renewing itself, creating and recreating connections and bonds with the external. The psychoanalytic framework of drives essentially dialogues with the object of this study, since the death drive is the experience of making a regressive journey from the anticipated state of being non-living, which is related to what is apparently hoped to be obtained from the act against life. Freud (2010) discusses the relationship between the "conflict of ambivalence" and "suicide": "Only this sadism solves for us the enigma of the inclination to suicide, which makes melancholy so interesting - and so dangerous" (Freud, 2010, p. 185). In agreement with Freud (2010), the individual turns against their Self in a sadomasochistic process of mistreatment and self-destruction. It can be inferred that the Self's self-destructive process can culminate in concrete destruction, i.e. suicide. Similarly, Carvalho (2019) refers to Freud's conception of suicide as "a murder of the evil object that the individual believes he has become". The author adds to the paradoxical idea of suicide: "suicide would reveal its paradoxical side, because it is self-conserving" (Carvalho, 2019, p. 43).

Through a view that focuses on the paradoxical nature of suicide, we can see that, while the individual is trying to kill himself, he can recognize the Self, even though he is in the process of self-destruction, because there is still the ambivalence of the feeling of being alive, and more, of still being alive. In this context, aggravated by the intervening factors, in addition to suffering, there is the possibility of recognizing some power. Reflecting on this, Freud (2010) questions how the destruction of the "I" can occur if the "drive life", better understood as the "drive for life and death", is charged with the "love of the 'I' for itself", even though it is threatened by anguish. It is understood that when the individual comes into contact with the emptiness felt at the moment he tried to destroy the Self, he recognizes that the unbearable affection he should kill was this emptiness or pain, and not the Self. At this complex, conflicting and painful point for the individual, it is the therapist's job to help him discern what is the Self, which deserves to be intact or preserved, and what is represented in the self-destructive conflict, i.e. what he must

work out in order not to bring him any more suffering. In this way, the psychotherapeutic process enables both the elaboration or reconstitution of the Self and conflicts.

Socio-cultural factors feature prominently in public health policies to understand and solve problems related to suicide. Research seeks to identify this problem in specific populations and adolescents. Currently, researchers associate various internal and external factors with this spectrum, such as: mental disorders; major depression; abuse of alcohol, tobacco and other drugs; stress; changes in the life cycle, socialization and identity formation in adolescents and for putting themselves at risk in contexts vulnerable to violence; anxiety; anguish; depression; personal and family conflicts; unsatisfactory self-esteem and self-image; obesity and physical inactivity, as well as the social determinants of poverty. The emphasis is on the dialectic of socio-cultural factors, in an inter-relational process that produces feelings, attitudes and relationships that can culminate in acts against one's own life. The authors suggest a systemic understanding, since the roles of various segments of society, such as family, religion, drugs, etc. play an influential role in the act of suicide. By means of concomitant conflict sizes, such as the systemic conception proposes to observe, the relationship of young people in their experiences in society which, in turn, does not welcome them and does not offer them qualified means to face life.

The scarcity of research with phenomenological foundations is a limitation that this study encountered, since the emphasis that was sought was to understand the phenomenon of suicide from an existential and paradoxical phenomenological perspective. On the other hand, the various theories presented have added up and helped to broaden the understanding of the phenomenon, but still without exhausting the full understanding of the problem, as it is complex and multifactorial, as well as being made up of elements of extreme subjectivity and singularity at the interface with countless factors.

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