

# Gaudibility as a protective factor against suicidal ideation in young people

## Gaudibilidade como fator de proteção contra ideação suicida em jovens

### *Gaudibilidad como factor protector de la ideación suicida en jóvenes*

Karla Patricia Valdés-García<sup>1</sup>, Marisol Franco-López<sup>1</sup>, Luis Miguel Sánchez-Loyo<sup>2</sup>, Ferrán Padrós-Blázquez<sup>3</sup>

<sup>1</sup> Universidad Autónoma de Coahuila, Facultad de Psicología - Saltillo - Coahuila - México.

<sup>2</sup> Universidad de Guadalajara, Centro Universitario de Ciencias de la Salud - Guadalajara - Jalisco - México.

<sup>3</sup> Universidad Michoacana de San Nicolas de Hidalgo, Facultad de Psicología - Morelia - Michoacán - México.

## ABSTRACT

Suicidal behavior is a global public health problem mainly in young people due to its high prevalence and negative impact both individually and socially. Gaudibility is a concept that explains the rewarding experience and subjective sensations of enjoyment, the modulation between stimuli and perceived enjoyment, proposing modules that regulate this process. The objective of this study was to analyze the relationship between gaudibility and its modulators with suicidal ideation in young people and to know if there were differences by sex in the variables. A quantitative, non-experimental, cross-sectional study was developed with a sample of volunteer subjects. 1,355 students from a public university in northern Mexico aged 18 to 29 participated. Data was collected through an electronic application with sociodemographic data, the Gaudibility scale, and the Suicidal Ideation scale. The Mann-Whitney U and Odds Ratio were applied. The main results found that gaudibility and its modulators can be considered protective factors of suicidal ideation in young people, except for imagination. Furthermore, in men, no significant values were found in the modulators of enjoyment in solitude and sense of humor; the effect sizes determined with Rosenthal's  $r$  showed low to medium values. It is concluded on the importance of having recent, contextualized studies with a gender focus and analyzing variables that may be protective factors of suicidal ideation for their inclusion in clinical care protocols.

**Keywords:** suicide, suicidal ideation, protective factors.

## RESUMO

A conduta suicida é um problema de saúde pública a nível mundial principalmente em jovens por causa da sua alta prevalência e os seus impactos negativos a nível individual e social. O Gaudibilidade é um conceito que explica a capacidade de desfrutar é um conceito que se refere as experiências gratificantes e as sensações subjetivas de desfrute, o equilíbrio entre estímulo e prazer percebido, levam ao surgimento de mecanismos que regulam esse processo. O objetivo deste estudo foi analisar a relação entre gaudibilidade e seus mecanismos com a ideação suicida em jovens, e saber se havia diferenças por sexo nas variáveis estudadas. Foi realizado um estudo quantitativo, não experimental, transversal, com amostra de voluntários. Participaram 1.355 estudantes de uma universidade pública no norte do México, com idades entre 18 e 29 anos. Os dados foram coletados de maneira virtual solicitando dados sociodemográficos, a escala de Gaudibilidade e a escala de pensamentos suicidas. Foram aplicados o U de Mann-Whitney e Odds Ratio. Entre os principais resultados encontrados estão que a gaudibilidade e os seus mecanismos podem ser considerados fatores protetores da ideação suicida em jovens, com exceção da imaginação; Além disso, nos homens não foram encontrados valores significativos nos moduladores de desfrutar na solidão e senso de humor; os tamanhos de efeito determinados com o  $r$  de Rosenthal apresentaram valores baixos a médios. Se concluiu que é importante ter novos estudos contextualizados, com enfoque de gênero e que analisem variáveis que possam ser fatores protetores da ideação suicida, para que possam ser incluídos em protocolos de atendimento clínico.

**Palavras-chave:** suicídio, ideação suicida, fatores de proteção.

### Correspondence:

Karla Patricia Valdés-García.

E-mail: [karlavaldes@uadec.edu.mx](mailto:karlavaldes@uadec.edu.mx)



## RESUMEN

La conducta suicida es problemas de salud pública mundial principalmente en los jóvenes debido a su alta prevalencia y sus impactos negativos tanto individuales como sociales. La gaudibilidad es un concepto que explica la experiencia gratificante y las sensaciones subjetivas de disfrute, la modulación entre estímulos y el disfrute percibido, proponiendo moduladores que regulan este proceso. El presente estudio tuvo como objetivo analizar la relación entre la gaudibilidad y sus moduladores con la ideación suicida en jóvenes, y conocer si existían diferencias por sexo en las variables. Se desarrolló un estudio cuantitativo, no experimental, transversal, con una muestra de sujetos voluntarios. Participaron 1,355 estudiantes de una universidad pública del norte de México, de 18 a 29 años. Los datos fueron recolectados de forma electrónica solicitando datos sociodemográficos, la escala de gaudibilidad y la escala de ideación suicida. Se aplicó la U de Mann-Whitney y Odds Ratio. Los principales resultados encontraron que la gaudibilidad y sus moduladores pueden ser considerados factores protectores de la ideación suicida en jóvenes, con excepción de la imaginación; Además, en los hombres no se encontraron valores significativos en los moduladores de disfrute en soledad y sentido del humor, los tamaños del efecto determinados con la  $r$  de Rosenthal mostraron valores bajos a medios. Se concluye, sobre la importancia de contar con estudios recientes, contextualizados, con enfoque de género y analizando variables que puedan ser factores protectores de la ideación suicida, para su inclusión en protocolos de atención clínica.

**Palabras clave:** suicidio, ideación suicida, factores protectores.

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### Highlights of Clinical Impact

- Gaudibility is a variable that can be developed from clinical practice with cognitive approaches in group and individual modalities.
- This research offers information for clinical therapists who provide care to young patients with suicidal ideation, mainly due to the high suicide rates that exist in the world and because, in many countries, it has not been possible to have scientific evidence to support the effectiveness of the clinical treatments applied to this problem.
- In addition, it can be considered for developing prevention protocols for the public, private, government, and educational sectors, among others.

The world population has been facing a highly complex problem, suicidal behavior that refers to a collective term that includes ideation, attempts, and suicide, which represents one of the main public health problems worldwide. According to the World Health Organization (WHO), it is estimated that at least 703,000 people died by suicide in 2019 (WHO, 2021). In Mexico, according to the National Institute of Statistics and Geography (INEGI), for the year 2022, the national suicide rate was 6.3 per 100,000 inhabitants, within which young people between 18 and 29 years old presented the highest suicide rate. Regarding sex, a higher prevalence of suicide was evident in men with a rate of 10.5 and women of 2.3; that is, eight out of every ten deaths from suicide occurred in men and two out of every ten in women (INEGI, 2023).

Valdez *et al.* (2023) state that in Mexico, a higher prevalence of suicidal ideation and attempts has been observed in women, data that agree with traditional rates; however, the suicide rate tends to be higher in men and is associated with lethality of the self-harm method.

Suicidal behavior refers to a collective term that includes ideation, attempt, and suicide. It has been shown that attempted self-harm with suicidal intent acts as the most important predictor of suicide (Valdez *et al.*, 2023). However, it is stated

that it is in suicidal ideation where the structure and planning to carry out the self-harm attempt is generated (González, 2023).

A factor that is primarily associated with suicidal ideation is anhedonia, which brings with it the inability of the subject to enjoy itself and has been considered a risk factor that can result in suicidal ideation, which becomes the cognitive construct that allows the structuring and planning of attacks on one's own life (Padrós *et al.*, 2021). Moreover, enjoyment has been defined as a positive affective state that occurs when a person engages cognitive focus on an experience or activity that satisfies a desire, goal, or need and brings with it states of pleasure, taste, and fun (Schmidt *et al.*, 2022).

Gaudibility is a Construct encompassing the processes that mediate between the stimuli and the enjoyment people experience (Padrós & Fernández, 2008). This concept comprises a series of modulators such as enjoyment in solitude, imagination, attention, concentration, and sense of humor, to mention a few, that regulate people's feelings about experiences in a lesser or greater degree of gratification, intensity, time and number of situations in which it is perceived that one is enjoying (Padrós & Fernández-Castro, 2008). Padrós *et al.* (2013) state that gaudibility explains the modulation between stimuli and individuals' perceived enjoyment.

As previously said, a set of modulators included in the gaudibility of a person regulates the rewarding experience and, to that extent, the subjective sensations of enjoyment in each individual. Gaudibility proposes three types of modulators. The first refers to skills such as imagination, concentration, interest, the ability to generate challenges, and a sense of humor; the second is linked to beliefs and cognitive styles, those irrational beliefs, internal locus of control, and perceived competence; finally, there are modulators linked to lifestyles, which are understood as the set of behaviors and attitudes of an individual to organize their daily routine, which are directly related to the enjoyment that this experience generates (Padrós & Fernandez, 2008).

Regarding suicidal ideation and gaudibility modulators, it has been reported that imagination can also promote negative emotions. For example, in people with suicidal ideation, the content of the imagination can be negative or catastrophic, which can increase emotional distress (Cha *et al.*, 2022). Beliefs and cognitive styles imply the subject's constant interpretation of reality; for this reason, when a tendency to biases and cognitive distortions occurs during information processing, the deployment of adaptive and problem-solving skills decreases. Which increases the possibility of experiencing suicidal ideation (Victoria, 2019).

One of the modulators that are part of gaudibility are lifestyles and will act as a risk factor when there is a perception of isolation and loneliness that does not generate a subjective sensation of enjoyment that is related to the increase in a negative emotion. (Hyland *et al.*, 2021) For this reason, loneliness has been postulated as a risk factor in suicidal ideation (Nichter *et al.*, 2021).

In accordance with the above, it has been shown that ideation is the initial step on the path to suicidal action; it is the predecessor of other more severe and potentially dangerous suicidal behaviors such as self-harm, suicide attempts and the completed act of suicide (Jobes & Joiner, 2019). Given the problem of suicidal behavior and its individual and social impact, the WHO (2022) highlights the importance of promoting mental health and the need to generate sustained actions over time to create healthy environments and living conditions that act as Protective factors. This is why different approaches aimed at suicide prevention have been generated.

Ceja-Sosa *et al.* (2023) conducted a systematic review evaluating the effectiveness of interventions. They found that Cognitive Behavioral Therapy (CBT) is one of the most effective therapeutic approaches in the treatment of suicidal behavior, specifically in ideation and its vulnerability, having key strategies such as collaborative work, psychoeducation, development of protective factors, cognitive approach, emotional regulation, problem solving, reduction of hopelessness, safety plans, relapse prevention, among others, which significantly increases its effectiveness in the treatment.

However, although there are specific approaches and techniques for caring for people with suicidal behavior, the interventions efficacy remains unclear (Fox *et al.*, 2020), and the need to study more protective factor is required to improve the impact of the strategies for prevention. This need for scientific evidence and generation of evidence-based strategies is more prevalent in countries like Mexico in which suicide rates have not been reduced. That is why, under this premise and relevance of studying possible and novel protective factors, such as gaudibility and its relationship with suicidal ideation can impact suicide prevention.

The objective of this study was to analyze the relationship between gaudibility and its modulators as possible protective factors for suicidal ideation in young people, a second objective was to analyze whether there were differences by sex in the study variables.

## METHOD

An empirical research report is presented, carried out using a quantitative non-experimental methodology, since it is impossible to control the study's variables, cross-sectional and with a selection of the aleatory sample of volunteer subjects (Guerrero & Guerrero, 2020). An associative cutting strategy was applied to analyze the relationship between the variables studied (Ato *et al.*, 2013).

The instruments were applied to a total of 1,481 people, of which 126 people were eliminated because they were outside the age range (69), they responded that they did not wish to participate (39), they reported not being students at the University from the study (17) and one person who had a repeated response. The final participants were 1,355 students from a public university in northern Mexico who responded to an electronic form sent to them by their directors and/or teachers. The majority of the sample were women (66.79%,  $n=905$ ), and their ages ranged from 18 to 29 years ( $\bar{x} = 20.6$ ,  $\sigma = 1.99$ ). The data was collected from March to April 2022. The data collected were analyzed in SPSS 26 Software, with non-parametric statistics, because a normal distribution is absent.

Of the total sample, 337 students reported having suicidal ideation in the last 12 months, 74% women and 26% men, and 146 students reported suicidal ideation in the last 7 days, of which 75% were women and 25% men.

The sociodemographic data of the participants were requested, and they were asked if they had had suicidal ideation in the last 12 months. In relation to the instruments used, they were the Gaudibility scale (Padrós-Blázquez *et al.*, 2021), which measures six factors (imagination, irrational beliefs, enjoyment in solitude, interest, concentration and sense of humor) through 24 items that They are answered on a Likert scale. Likewise, to determine the presence of suicidal ideation in the last seven days; the scale has reported a Cronbach's alpha of  $= .858$  (Padrós-Blázquez *et al.*, 2021) and in the present study the

Cronbach's alpha obtained in the total scale was  $\alpha = .838$ . And, the Roberts and Chen (1995) Suicidal Ideation scale, valid for the Mexican population, with a Cronbach's alpha of  $\alpha = .666$  (Padrós *et al.*, 2023), and for the present study of  $\alpha = .839$ ; This scale consists of four items that are responded concerning the number of days that the instrument's assertions have been presented and that it has a cut-off point of six.

An ethics committee approved the research, established in the Ethical Clearance Certificate with reference number C.B/01-03-22. Likewise, ethical aspects were addressed regarding informed consent, delivery of results, access to psychological support materials, and a care directory with a variety of public, private, free, and low-cost alternatives. Participants could leave the study whenever they decided and had access to the main author's contact email to request related information.

## RESULTS

To compare the groups of participants with and without suicidal ideation in relation to total gaudibility and the subscales, a Mann-Whitney U test was performed, and the effect size

generated was analyzed with Rosenthal's  $r$ . The above was applied to the group of people with suicidal ideation in the last 12 months (Table 1) and people with suicidal ideation in the last 7 days (Table 2).

As can be seen in Table 1, lower scores were reported in the subscales and the total score of gaudibility in the students with suicidal ideation, except for the imagination subscale. Regarding the effect sizes, they ranged from low (.10 to .20) to medium (.21 to .50) (Domínguez-Lara, 2018), with the highest scores being the interest subscale and the total score of gaudibility.

Concerning people who reported suicidal ideation in the last 7 days, lower scores were found for participants with suicidal ideation compared to those who did not report it in all subscales and the total score of the Gaudibility scale. The effect size obtained using Rosenthal's diagnosis showed values from low (.10 to .20) to medium (.21 to .50) except for the imagination scale, which does not have a significant effect size (Domínguez-Lara, 2018).

Likewise, in the case of people with suicidal ideation in the last 7 days, the sample was divided into those with suicidal

**Table 1.** Mann Whitney U to identify differences in gaudibility and its modulators in students with and without suicidal ideation in the past 12 months and their effect size differences.

| Variable           | With ideation |       | No ideation |       | Z      | Sig.  | Effect size |
|--------------------|---------------|-------|-------------|-------|--------|-------|-------------|
|                    | Mean          | Sd    | Mean        | Sd    |        |       |             |
| Imagination        | 11.04         | 3.89  | 11.25       | 3.34  | -0.22  | .825  | 0.01        |
| Irrational beliefs | 10.81         | 2.96  | 12.22       | 2.59  | -7.73  | <.001 | 0.21        |
| Enjoy in solitude  | 8.96          | 4.84  | 10.56       | 4.14  | -5.09  | <.001 | 0.14        |
| Interest           | 9.46          | 3.20  | 12.36       | 2.93  | -14.06 | <.001 | 0.38        |
| Concentration      | 5.41          | 4.12  | 8.36        | 4.39  | -10.52 | <.001 | 0.29        |
| Sense of humor     | 10.12         | 3.81  | 11.85       | 3.17  | -7.25  | <.001 | 0.20        |
| Gaudibility        | 55.79         | 12.81 | 66.60       | 11.95 | -12.67 | <.001 | 0.34        |

Note. Own elaboration. Effect size analyzed with Rosenthal's  $r$ .

**Table 2.** Mann Whitney U to identify differences in gaudibility and its modulators in students with and without suicidal ideation in the past 7 days and their effect size differences.

| Variable           | With ideation |       | No ideation |       | Z      | Sig.  | Effect size |
|--------------------|---------------|-------|-------------|-------|--------|-------|-------------|
|                    | Mean          | Sd    | Mean        | Sd    |        |       |             |
| Imagination        | 11.10         | 4.01  | 11.21       | 3.42  | -0.26  | .794  | 0.01        |
| Irrational beliefs | 10.44         | 3.14  | 12.04       | 2.65  | -6.03  | <.001 | 0.16        |
| Enjoy in solitude  | 8.24          | 4.94  | 10.39       | 4.25  | -5.12  | <.001 | 0.14        |
| Interest           | 8.76          | 3.55  | 11.99       | 3.03  | -10.12 | <.001 | 0.27        |
| Concentration      | 4.40          | 4.09  | 8.02        | 4.40  | -9.08  | <.001 | 0.25        |
| Sense of humor     | 10.05         | 3.69  | 11.58       | 3.35  | -4.80  | <.001 | 0.13        |
| Gaudibility        | 52.99         | 13.12 | 65.23       | 12.39 | -9.90  | <.001 | 0.27        |

Note. Own elaboration. Effect size analyzed with Rosenthal's  $r$ .

ideation and without suicidal ideation and with the presence or absence of gaudibility and its modulators, taking as the cut-off point the median, to analyze the protective effect or risk through the analysis of Odds Ratio (OR) with a 95% confidence interval (Altman, 1991). These results are presented in Table 3, where it is observed that all variables were identified as protective except for the imagination subscale.

To analyze sex differences in the variables, it was first determined that there was a significant difference between sexes determined by the Chi-square test, finding that there were significant differences for both people who reported suicidal ideation in the last 12 months ( $X^2= 11.76, p=.001$ ), as well as for those who reported suicidal ideation in the last 7 days ( $X^2= 4.54, p=.033$ ).

Mann-Whitney U tests were performed to compare the groups of men and women with and without suicidal ideation concerning the variables studied. Finding in both women and men, with suicidal ideation in the last 12 months, significant differences were identified in all subscales except for imagination and with effect sizes determined with Rosenthal's *r* in the subscales with significant differences, values from low (.10 to .20) to medium (.21 to .50) (Domínguez-Lara, 2018), the results can be seen in table 4.

Regarding the differences by sex in the prevalence of suicidal ideation in the last 7 days, it was observed that in the case of women all the protective factors had significant differences between women with and without suicidal ideation

**Table 3.** Odds Ratio for the comparison of Gaudibility and its modulators in students with and without suicidal ideation.

| Variable           | Mdn | No ideation |     | With ideation |     | OR   | IC 95% |      | z    | P     |
|--------------------|-----|-------------|-----|---------------|-----|------|--------|------|------|-------|
|                    |     | Yes         | No  | Yes           | No  |      | IL     | SL   |      |       |
| Imagination        | 12  | 611         | 598 | 80            | 66  | 1.19 | .84    | 1.67 | .97  | .331  |
| Irrational beliefs | 12  | 785         | 424 | 60            | 86  | .38  | .26    | .53  | 5.46 | <.001 |
| Enjoy in solitude  | 11  | 626         | 583 | 54            | 92  | .50  | .35    | .72  | 3.78 | <.001 |
| Interest           | 12  | 852         | 357 | 50            | 96  | .22  | .15    | .31  | 8.21 | <.001 |
| Concentration      | 8   | 367         | 842 | 15            | 131 | .26  | .15    | .45  | 4.78 | <.001 |
| Sense of humor     | 12  | 679         | 530 | 59            | 87  | .53  | .37    | .75  | 3.57 | <.001 |
| Gaudibility        | 64  | 669         | 540 | 30            | 116 | .21  | .14    | .32  | 7.36 | <.001 |

Note. Own elaboration. Mdn: Median.

**Table 4.** Differences in gaudibility and its modulators in men and women with and without suicidal ideation in the last 12 months

| Variable           | sex   | Mean  | Sd    | Z      | Sig.  | Effect size |
|--------------------|-------|-------|-------|--------|-------|-------------|
| Imagination        | women | 11.05 | 3.95  | -.33   | .744  | 0.01        |
|                    | men   | 11.11 | 3.67  | -.53   | .596  | 0.01        |
| Irrational beliefs | women | 10.91 | 2.89  | -7.45  | <.001 | 0.20        |
|                    | men   | 10.38 | 3.15  | -3.70  | <.001 | 0.10        |
| Enjoy in solitude  | women | 9.28  | 4.87  | -3.76  | <.001 | 0.10        |
|                    | men   | 8.05  | 4.66  | -3.86  | <.001 | 0.11        |
| Interest           | women | 9.53  | 3.26  | -10.63 | <.001 | 0.29        |
|                    | men   | 9.23  | 2.93  | -9.06  | <.001 | 0.25        |
| Concentration      | women | 5.29  | 4.16  | -8.32  | <.001 | 0.23        |
|                    | men   | 5.92  | 3.98  | -5.73  | <.001 | 0.16        |
| Sense of humor     | women | 10.25 | 3.88  | -6.20  | <.001 | 0.17        |
|                    | men   | 9.71  | 3.66  | -4.03  | <.001 | 0.11        |
| Gaudibility        | women | 56.31 | 13.06 | -9.85  | <.001 | 0.27        |
|                    | men   | 54.39 | 12.13 | -7.80  | <.001 | 0.21        |

Note. Own elaboration.

in the last 7 days, except for imagination; For the groups of men, no differences were found in the variables of imagination, enjoyment in solitude, and sense of humor. Likewise, for the variable of irrational beliefs in men, despite finding a significant value in the Mann-Whitney U test, the effect size determined

with Rosenthal's  $r$  was small and not significant in practical terms; the rest of the variables analyzed showed values from low (.10 to .20) to medium (.21 to .50) (Domínguez-Lara, 2018). The results can be seen in Table 5.

**Table 5.** Differences in gaudibility and its modulators in men and women with and without suicidal ideation in the last 7 days

| Variable           | sex   | Mean  | Sd    | Z     | Sig.  | Effect size |
|--------------------|-------|-------|-------|-------|-------|-------------|
| Imagination        | women | 10.80 | 4.16  | -.43  | .664  | 0.01        |
|                    | men   | 12.08 | 3.47  | -1.73 | .083  | 0.05        |
| Irrational beliefs | women | 10.45 | 3.20  | -5.55 | <.001 | 0.15        |
|                    | men   | 10.22 | 2.94  | -3.04 | .002  | 0.08        |
| Enjoy in solitude  | women | 8.24  | 4.83  | -4.86 | <.001 | 0.13        |
|                    | men   | 8.11  | 5.41  | -1.95 | .051  | 0.05        |
| Interest           | women | 8.70  | 3.72  | -7.99 | <.001 | 0.22        |
|                    | men   | 8.78  | 3.11  | -6.07 | <.001 | 0.17        |
| Concentration      | women | 4.05  | 3.95  | -8.12 | .005  | 0.22        |
|                    | men   | 5.72  | 4.27  | -3.55 | <.001 | 0.10        |
| Sense of humor     | women | 9.83  | 3.82  | -5.01 | <.001 | 0.14        |
|                    | men   | 10.61 | 3.31  | -1.20 | .231  | 0.03        |
| Gaudibility        | women | 52.07 | 13.49 | -8.89 | <.001 | 0.24        |
|                    | men   | 55.53 | 12.06 | -4.23 | <.001 | 0.12        |

Note. Own elaboration.

## DISCUSSION

Regarding the objective of analyzing the relationship between gaudibility and its modulators as possible protective factors for suicidal ideation in young people, negative statistically significant differences were found between gaudibility and its modulators, except for imagination, with suicidal ideation, so participants with higher scores in gaudibility were less likely to present suicidal ideation in the last 12 months and the last 7 days.

Specifically, in the analysis by subscales, it was observed that the imagination variable did not present differences in any of the two groups of people who reported ideation (last 12 months and 7 days). This can be explained by findings on the association between imagination and the presence of suicidal ideation since the content of the imagination can be negative or catastrophic, which can increase people's emotional distress (Cha *et al.*, 2022), and the gaudibility scale asks if the person has the capacity to imagine in a general way and does not ask if the person uses this capacity to enjoy.

Regarding irrational beliefs, negative differences were found, with a medium effect size in the ideation group in the last 12 months and low in the last 7 days, which refers to the fact that more irrational ideas are presented regarding enjoyment in the group of people with suicidal ideation. The presence

of irrational beliefs in suicidal behaviors has been reported (Álvarez *et al.*, 2019; Arroyo & Herrera, 2019), because of these beliefs an increase in negative cognitive aspects can generate maladaptive emotions or behaviors. These results suggest that intervening in irrational beliefs could be a protective factor against suicidal ideation.

The ability to enjoy solitude presented negative differences with low effect sizes in the sample. The finding is relevant since loneliness has been reported as a factor of emotional distress and risk in the case of suicide ideation and attempts (Hyland *et al.*, 2021; Nichter *et al.*, 2021). Apparently, it is not so much about loneliness itself but rather how it is perceived by the person, which puts them at risk of developing suicidal ideation.

Regarding the modulator of interest, it was found that it can be a protective factor of suicidal ideation since significant differences were found, with a medium effect size, which agrees with other studies that have reported that a greater capacity to be interested is correlated negatively with suicidal ideation (Auerbach *et al.*, 2015). The ability to be interested in everyday activities could protect against possible suicidal ideation, since it may be reflecting that the person has activities, people or things that give them reasons to live or generate connections that prevent them to a certain extent from focusing on thinking about take their life.



Concentration was also significant, with a medium effect size, which provides evidence consistent with the reported relationship between high impulsivity and lack of reflexivity in people with suicidal behaviors (Millner *et al.*, 2020). It is relevant to continue studying particular characteristics of concentration such as its duration, the situations that facilitate or hinder it, and whether this ability to focus can reduce people's suicidal ideation, thus generating a protective effect; It may even be relevant as an analysis variable in school contexts where concentration is relevant for academic success, which have also been studied in terms of academic failure being a risk factor for suicidal behavior (Castellví *et al.*, 2020).

Finally, regarding the modulator of the sense of humor, it was significant, with the difference that in people who reported suicidal ideation in the last 12 months, the effect was medium, and the effect was low in people with ideation in the last 7 days. These findings agree with what has been reported that a sense of humor can be a protective factor against suicidal behaviors, influencing the promotion of people's resilient behaviors (Aaker & Bagdonas, 2021; Blanco, 2020).

A second objective sought to determine the differences by sex in the factors studied. In this sense, it was observed that women presented higher scores in the variables studied compared to men in the group with suicidal ideation in the last twelve months. The protective factors in women with medium effect sizes were interest, total gaudibility, and concentration; in men, it was only interest and total gaudibility.

Another finding related to sexual differences was observed in participants with suicidal ideation in the last 7 days, specifically in the case of men, where no significant variables were detected in the present study. The above could be related to the instruments used or that for men, the protective factors evaluated do not have a protective effect for current suicidal ideation, so research would have to be carried out to identify protective factors that were significant in the case of men in the prevalence of suicidal ideation in the last 7 days. Finally, it can be assumed that men who report suicidal ideation in the last 7 days may present more intense depressive symptoms, which minimizes the positive impact of protective factors (Miranda-Mendizabal *et al.*, 2019).

In the analysis of the results differentiated by sex, it was identified that imagination was a risk factor for men, which increased the probability of reporting suicidal ideation by 145%; in women, it was not considered significant as a protective or risk factor. The above agrees with what was reported by Cha *et al.* (2022) concerning the possibility of presenting a more significant negative, uncomfortable, and catastrophic vision in people with more imagination and who present suicidal ideation.

The findings of this study can directly impact increasing the effectiveness of intervention strategies in people with suicidal ideation. There is a group intervention proposal, based on cognitive behavioral therapy, to increase gaudibility in people with depression which generated positive and lasting results in

the sample studied (Padrós *et al.*, 2014), and the present study can serve as scientific evidence that supports the inclusion of techniques that increase gaudibility in patients with suicidal ideation in cognitive behavioral interventions.

The study has limitations, as it was carried out only with young people from a single university in northern Mexico. To determine the validity of the results more broadly, it is necessary to continue studying the variables in other contexts and population groups, the study must be expanded to include more ages and other social and contextual characteristics.

Furthermore, it was carried out in a historical period in which educational spaces were gradually returned after the COVID-19 pandemic, an element that could also have influenced the study variables.

Another limitation of the study was that it only considered the possible protective factors in relation to suicidal ideation without considering that perhaps its impact could be related to other variables considered risk factors for suicidal ideation, such as depression or hopelessness. Gaudibility could explain the absence of depression, hopelessness, or some other variable rather than suicidal ideation itself. This limitation needs to be analyzed in future studies to strengthen the findings of this study.

## CONCLUSIONS

Negative statistically significant differences were found between gaudibility and its modulators, except for imagination, with suicidal ideation, were found. So, people in the sample with greater gaudibility were less likely to have suicidal ideation. Therefore, it can be inferred that gaudibility may be a protective factor against suicidal ideation in young people. Furthermore, developing these protective factors with the possible anticipation of the presence of suicidal ideation can have a better impact.

In general, the variables studied can be considered as protective factors and seem to be more effective in the case of women, so it is relevant to generating research that analyzes gender differences in protective factors because they may differ in men and women, as this study found.

Among the main contributions of the study are that it provides recent and novel information concerning protective factors that had not been studied in their relationship with suicidal ideation and that it allows us to have contextualized scientific evidence for its application in the care and prevention of suicide ideation. Finally, the data reported in the study can be considered for future studies that analyze the impact and benefit of including techniques and strategies in clinical care protocols that develop gaudibility in clients with suicidal ideation.

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