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On the cover
Don Manuel Osorio Manrique de Zúñiga (Oil on canvas, 1787)

Francisco de Goya (1773-1812)

Metropolitan Museum of Art

INSTITUTO NACIONAL DE PSIQUIATRÍA
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Directorio

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Salud Mental

Since 1977, the SALUD MENTAL as the official publication of the National Institute of Psychiatry Ramón de la Fuente National Muñiz has sought to respond to the publishing needs of researchers working in the area of mental health, basing on four fundamental criteria: continuous education, updating, information and a multidisciplinary approach.

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EDITORIAL
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The Path to Psychiatric Research Dissemination: How Policy Decisions Are Made

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Salud Mental Journal (SMJ), the official publication of the Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz (INPRFM), has been Mexico's leading psychiatry and mental health journal for the past five decades. Since its inception in 1977, SMJ has shaped the public health research landscape in Mexico and parts of Latin America.

The journal has disseminated high-quality research exploring the nature of psychiatric (Medina-Mora et al., 2003) and substance use disorders (Berenzon-Gorn et al., 2024). It has impacted the academic discourse on these critical topics, providing valuable information for national mental health policymakers.

This issue of SMJ contains six articles on the clinimetric evaluation of various instruments. Developing valid, reliable and consistent instruments is the first step toward obtaining objective evaluations of psychiatric diagnoses and establishing a platform for mental health awareness, essential for psychiatric research dissemination.

Three of the articles evaluated children or adolescents, a particularly vulnerable population. The first one, by Unikel et al., 2025, validated the self-reported Binge Eating Disorder Scale in a sample of 378 school-aged children. The findings show that "eating without being hungry" is the main symptom reported, followed by "eating associated with a certain mood," which could help identify children with potential binge eating behaviors. The second, by Gutiérrez-Garcia et al., 2025, measured the psychometric properties of the Acquired Capability for Suicide Scale in Mexican adolescents. The results of their study of 459 adolescents in the community show that "pain tolerance" and "fearlessness toward death" are the factors that most accurately predict lifetime suicide events in this population. These findings demonstrate strong reliability, convergent validity, and predictive risk factors, as well as high sensitivity and specificity. The third paper determined the psychometric properties of the *Brief Life Skills Scale for Adolescents* (Fuentes et al., 2025) by administering it to 3787 students, The exploratory factor analysis model yielded a six-item structure: planning for the future, assertiveness, expression of emotions, resistance to peer pressure, decision making, and taking responsibility. These results show that the instrument has satisfactory psychometric properties, demonstrating its potential usefulness as a tool for assessing life skills in Mexican adolescents.

Disseminating these validated tools is the second step on the long road to establishing a national political path to psychiatric knowledge. In recent years , the SMJ has embarked on this endeavor on its own. Other psychiatric scientific journals published some years ago have since been discontinued. For example, publication of Psiquis, the official journal of the *Fray Bernardino Álvarez Hospital* in Mexico City ceased ten years ago. A similar organization, the *Asociación Mexicana de Psiquiatría Infantil*, stopped publishing its journal 20 years ago. A group of neurologists at the *Instituto Nacional de Neurología y Neurocirugía Manuel Velazco Suárez* in Mexico published *Archivos de Neurociencias* for 40 years with research on neuroscience, particularly neurological aspects, now in a new editorial area. The *Sociedad Mexicana de Neurología y Psiquiatría* published a journal called *Neurología, Neurocirugía y Psiquiatría*, discontinued in January 2024. Given this scenario, collaboration between SMJ and other psychiatric or mental health journals could help disseminate psychiatric knowledge.

The *Asociación Psiquiátrica Mexicana* (APM) published *Psiquiatría* for several decades. Fourteen years ago, it changed the name of the journal to *Revista APM Asociación Psiquiátrica Mexicana* (APMJ). Until 2023, APMJ not only published scientific papers (Busqueta et al., 2021) but also included social (Saucedo & Flores, 2020) and cultural content (Irigoyen, 2021). However, as from 2024, with the collaboration of SMJ, it was decided to transform APMJ into a scientific journal and benchmark publication in Mexico together with SMJ. The journals were established and originally guided by the commitment and vision of *Dr. Ramón de la Fuente Muñiz*, the ideological founder of both publications.

APMJ was transformed to align with SMJ's guidelines, implementing editorial strategies to evaluate original proposals, incorporating standardized evaluation formats, introducing manuscript delivery procedures to promote effective communication between editorial team members, peer reviewers and authors, and increasing international visibility in key fields. These actions were designed to achieve editorial collaboration whereby SMJ could share the editorial experience associated with its scientific success with APMJ. One of the main strategies was the participation of several SMJ co-editors as part of the editorial team in APMJ and their participation with editorials or original papers.

The first 2024 issue of APMJ included a systematic review of major health outcomes among medical students, which found suicide risk to be a prevalent risk factor (Guizar-Sánchez et al., 2024). The second included an editorial paper. Seventeen years ago, a health emergency was declared in *Villa de las Niñas* in *Chalco*, in the State of Mexico, where dozens of female adolescents were affected with functional neurological disorders. After many years, a detailed analysis of the social and psychiatric situation was discussed and published (de la Peña, Medina-Rodríguez et al., 2024). This issue also included a validation study with factor analysis based on the Morisky Medication Adherence Scale of participants diagnosed with major depressive disorder (Medina & Lugo, 2024). The third issue contained a systematic review with meta-aggregation. The findings suggest that video game exposure could be a moderating factor promoting healthy executive function development in both children and adolescents, while playing violent video games and being male could be predictors of depressive disorders (Medina et al., 2024). The final participation of SMJ's co-editors involved an original paper on the multi-informant procedure to diagnose limited prosocial emotions in a clinical adolescent population (de la Peña, Taboada-Liceaga et al., 2024).

A leading INPRFM researcher decided to publish a thought-provoking epidemiological paper acknowledging the existence of disruptive mood dysregulation disorder, linking it to certain sociodemographic characteristics (Benjet et al., 2024)

APM implemented a research and publication program for residents to publish their theses, called "Publica tu Tesis" (Publish your Thesis). An evaluation of child anxiety and depression at two foster care homes in Mexico City was the first research linked to this key initiative to be published (Guerrero-Medrano et al., 2024).

The revamped APMJ obtained its electronic International Standard Serial Number (eISSN 3061-7979) in February 2025. APMJ has been indexed in some of the top scientific databases, such as Google Scholar, the Latin American Network of Academic Journals in Social Sciences and Humanities (LatinRev), and the Scientific Literature Database (Scilit). Modifications to the journal included reducing the annual number of issues from four to three, reflecting its commitment to transitioning from a cultural and social magazine into a publication for the dissemination of psychiatric research.

In conclusion, SMJ scientific papers have made a key contribution to mental health policy decisions regarding psychiatric and substance use disorders. In the past, SMJ experienced certain difficulties in its collaborative editorial work with other journals. However, SMJ and APMJ will continue to share and improve their work with original papers, reviewing materials to enhance the quality of their publications and ensure the continuity and productivity of their collaboration.

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ORIGINAL ARTICLE
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Attitudes and opinions of Human Resources personnel towards the work capacities of people with mental disorders: creation of a scale and analysis in three cities

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ABSTRACT

Introduction. Work activity constitutes a pillar of well-being and self-identification for everyone, including those with mental disorders (MD) wishing to access and maintain competitive jobs. Human Resources (HR) professionals constitute essential mediators, capable of preventing discrimination, and facilitating the inclusion of those with mental disorders (MD) in the labor market. **Objectives.** 1) Describe the attitudes and opinions of HR personnel from companies in Guadalajara, Puebla and Mexico City (CDMX) towards people with MD. 2) Create a scale to measure the attitudes and opinions of HR personnel regarding the work capacity of people with MD. **Method.** This is an observational, analytical, prospective, and cross-sectional study with 62 participants, using the Community Attitudes to Mental Illness Scale (CAMI) and the Opinions about Mental Illness Scale (OMI). In addition, the authors developed and validated a measurement tool called Opinions about the Work Capacity of People with Mental Disorders Scale (OCAL-TM). **Results.** The findings revealed no significant variations between cities on any of the three scales. The OCAL-TM scale, validated and comprising 10 items, demonstrated high reliability (α = .874). **Discussion and conclusion.** The study identified negative perceptions regarding the work capacities of individuals, which can translate into stigma and discrimination. This points to the need to provide mental health information to HR personnel to foster greater tolerance and workplace inclusion.

Keywords: Human resources, mental disorders, stigma, workplace inclusion, scales, work.

RESUMEN

Introducción. La actividad laboral es un pilar de bienestar y autoidentificación personal, incluso para aquellos con algún trastorno mental (TM), quienes desean acceder y mantener un trabajo competitivo. Los profesionales de Recursos Humanos (RH) emergen como mediadores esenciales, capaces de prevenir la discriminación, y facilitar la inclusión de personas con TM en el mercado laboral. **Objetivo.** Describir las actitudes y opiniones del personal de RH de empresas en Guadalajara, Puebla y Ciudad de México (CDMX) hacia las personas con TM. Generar una escala que mida las opiniones del personal de RH sobre las capacidades laborales de las personas con TM. **Método.** Estudio observacional, analítico, prospectivo y transversal. Se utilizó la Escala de Actitudes de la Comunidad hacia la Enfermedad Mental (CAMI) y la Escala de Opiniones sobre la Enfermedad Mental (OMI). Se desarrolló y validó una herramienta de medición denominada "Escala de Opiniones sobre las Capacidades Laborales de las personas con Trastornos Mentales" (OCAL-TM). **Resultados.** La muestra estuvo compuesta por 62 individuos. No se encontraron variaciones significativas entre las ciudades para las tres escalas. La escala OCAL-TM, validada y estructurada con 10 ítems, demostró una alta confiabilidad (α = 0.874). **Discusión y conclusión.** A través de este estudio, se identificaron percepciones negativas hacia las capacidades laborales de las personas con TM, lo cual puede traducirse en estigma y discriminación. Por lo anterior, se requiere brindar mayor información de salud mental al personal de RH con el objetivo de fomentar una mayor tolerancia e inclusión laboral.

Palabras clave: Recursos humanos, trastornos mentales, estigma, inclusión laboral, escalas, trabajo.

INTRODUCTION

In contemporary society, work not only constitutes a source of income, but also a fundamental pillar of identity and well-being (Kun & Gadanecz, 2019). Since work is a center of satisfaction and concern in people's lives (Inayat & Jahanzeb, 2021), workplace well-being has become a critical consideration in both business management and public health promotion (Eriksson et al., 2017). Well-being at work is an essential concern in human resource management and public health (Peters et al., 2022), forming part of the global assessment of the physical, emotional, and mental state of employees in a work setting (Adams, 2019). The growing importance of the concept of well-being at work is due to its potential to influence productivity, job satisfaction and, ultimately, the Quality of Working Life (Leitão et al., 2021).

Organizational and working conditions can contribute to the deterioration of workers' mental health, manifesting as stress, depression, anxiety, substance use, and absenteeism (Irarrázaval et al., 2016; Mingote et al., 2011). Companies have a mission to raise awareness about the need for well-being at work, adapting and evolving in response to the needs of their employees (Zhenjing et al., 2022).

The intersection of mental disorders and workplace inclusion has emerged as a critical area of study in the relationship between public health and the work world (Bjørnshagen & Ugreninov, 2021). Mental disorders (MD), comprising a wide range of conditions affecting emotional and psychological health (Gross et al., 2019), represent a significant burden on society in terms of human well-being and financial costs (Tham et al., 2021). In this context, people's capacity to access and maintain employment becomes a crucial aspect of their recovery and quality of life (Brouwers, 2020).

Human Resources (HR) are the communication channel between management and employees (Mayon et al., 2019). As the guardians of an organization's workforce (Renwick, 2003), HR professionals have the power to influence the inclusion or exclusion of those with MD in the workplace (Hennekam et al., 2021). Their capacity to understand, support and foster inclusive work environments can be decisive in the lives of those facing mental health challenges (Wu et al., 2021).

Stigma and discrimination continue to be significant barriers to effective mental health management in the workplace. When an individual with a MD engages in competitive employment, either by applying for a job or returning to work after a diagnosis, the stigma associated with their condition poses challenges, especially if it is considered a disability (Dinos et al., 2004; Hielscher & Waghorn, 2017).

The decision of whether to disclose a MD to the organization is crucial because it determines the consequences an individual may face as a result (Honey, 2004). For organizations, MD disclosure presents challenges due to the attendant financial and legal liabilities. For this reason, individuals with a MD remain vulnerable not only to the symptoms, but also to coworkers' and employers' negative reactions, many of which are based on unfounded stereotypes about their capacity (American Psychiatric Association, 2013). A quantitative study reported that disclosure resulted in discriminatory responses, including work dismissal, differential treatment, changes in attitude by interviewers during the recruitment process, exclusion from task accomplishment, and avoidance by coworkers (Gladman & Waghorn, 2016).

Variations in mental disorder diagnoses also shape the decision to disclose. Some studies reveal that the less outwardly visible the symptoms of an MD, the less likely an individual is to disclose. One survey found that participants with depression were more likely to conceal their MD than those with schizophrenia, schizoaffective disorder, or bipolar disorder (Yoshimura et al., 2018).

Brohan et al. (2012) observed that individuals with MD perceived that employers tend to have low levels of mental health literacy, largely because they are highly influenced by stereotypical media attitudes towards those with MD. This, in turn, leads to negative behaviors, including rejection, condescension, disdain, and patronization.

HR perceptions, attitudes, and practices can make the difference between successful workplace integration and persistent discrimination (Kunz & Ludwig, 2022). Although instruments exist to evaluate opinions toward those with MD in community settings (Grandón et al., 2016) and among healthcare professionals (Fernandes et al., 2019), no specific instrument has been found to assess HR attitudes and opinions regarding the work capacity of people with this condition.

The main objective of this study is to explore the attitudes and opinions of HR personnel towards people with MD in companies in Guadalajara, Puebla, and Mexico City (CDMX). To achieve this, a scale was designed and validated to reliably quantify the attitudes and opinions regarding the work capacity of this population. The comprehensive approach of this research aims to shed light on the relationship between HR personnel and individuals with MD in the workplace, to encourage their effective understanding and inclusion in the work environment.

METHOD

Study Design

This study was observational, analytical, prospective, and cross-sectional.

Sample description

The sample comprised 62 participants working in the HR area of companies located in three cities in Mexico: Guadalajara, Puebla, and Mexico City (CDMX). The initial

design included invitations to HR professionals through social networks and visits to companies specializing in labor recruitment. Although face-to-face interviews were initially planned, many participants reported difficulties due to scheduling constraints or internal company policies. To accommodate these challenges, participants were offered two options: in-person interviews or remote interviews using a digital communication platform.

The sampling method was convenience-based, meaning that recruitment was conducted through centers identified online or in physical advertisements in the selected cities. Participants who answered these advertisements were encouraged to invite their colleagues to participate.

Since one of the objectives of the study was to validate the OCAL-TM scale, the sample size was calculated for a factor analysis. Based on recommendations in the literature, the sample size was set at 55 participants, with a minimum of five participants per item (MacCallum et al., 1999).

Sites

The study was conducted in three locations in Mexico: Guadalajara, Puebla, and CDMX. These cities were strategically selected to represent the geographic and demographic diversity of the country, providing a holistic understanding of the attitudes and opinions of HR personnel across work and cultural contexts.

Measurements

Two widely recognized scales were used to evaluate attitudes and opinions towards those with MD: The Community Attitudes to Mental Illness Scale (CAMI), developed by Taylor & Dear in 1981, and the Opinions about Mental Illness Scale (OMI), created by Cohen & Struening in 1962.

From these scales, we selected 19 items from the CAMI scale and 16 from the OMI scale for our research. Both scales use a Likert rating system, with responses ranging from 1 meaning "totally disagree" to 5 meaning "totally agree."

For this study, a new measurement tool called Opinions of Work Capacities of people with Mental Disorders Scale (OCAL-TM) was developed to evaluate the opinions of HR professionals on the work capacity of people with MD.

The OCAL-TM consists of 11 carefully worded questions, evaluated using the same Likert-type scale, where a higher score reflects less favorable attitudes and opinions towards people with a MD. Two occupational mental health experts developed the OCAL-TM items to ensure their relevance and validity in the context of human resources and employment. A pilot test had previously been conducted to analyze the format validity of the items.

Some items in the CAMI and OMI are reverse-scored on the Likert scale. This strategy was also adopted for the OCAL-TM to reduce potential response bias and ensure a more accurate evaluation. Combining positively worded and reverse-scored items is common practice in social research to prevent automatic responses and encourage participants to reflect more carefully, thereby improving data quality.

Reverse-score items were graded from 1 "totally agree" to 5 "totally disagree." In the CAMI scale, reverse-scored items included numbers 4, 5, 6, 10, 11, 13, 14, 18, and 19. In the OMI, these items corresponded to numbers 6, 8, 10, 12, 13, and 14, whereas in the OCAL-TM, reverse scoring was applied to items 4 and 7.

Procedure

The research procedure was systematically conducted to ensure the collection of reliable representative data. Companies located in the three study cities were contacted to recruit HR professionals.

Data collection took place between April and May 2023, beginning in Puebla, followed by CDMX, and finally, Guadalajara. After initial contact and before the interviews, participants were sent a digital informed consent form, which they were asked to sign and return. The information collected was securely stored. Since the instruments administered were brief—including a questionnaire on sociodemographic data—interviews lasted approximately 30 minutes. Data was stored in Excel spreadsheets and securely maintained by the principal investigator.

Statistical analysis

To compare the total scores across the three cities, a statistical analysis was conducted using the Kruskal-Wallis test. To validate the OCAL-TM scale, Cronbach's alpha was calculated to assess reliability, and Spearman correlations were used to evaluate validity. All statistical analyses were performed using SPSS v21 to ensure accurate data evaluation. The OCAL-TM scale was validated using principal component analysis with varimax rotation, yielding two factors that explained 63.44% of the variance. A factorial load of 0.40 or more was established as the criterion for retaining an item.

Ethical considerations

Ethical approval was obtained from the Research and Ethics Committee of the Faculty of Medicine of the Benemérita Universidad Autónoma de Puebla (BUAP), on March 30, 2023, with registration number 1029. The project, classified as negligible risk, adhered to the principles of the Helsinki Declaration and the Belmont Report.

All data were anonymized and stored by the principal investigator to protect confidentiality. These measures were outlined in the informed consent process, providing transparency regarding the security of participant information.

Participants were offered the opportunity to receive a summary of the findings once the study had been completed. This reflects the commitment of the study authors to transparency and ensured that participants would be informed of the outcomes of the research to which they had contributed.

RESULTS

In accordance with the methodological framework outlined above, the following section presents the results obtained from the comprehensive analysis of the data collected. These findings provide a detailed examination of the attitudes and opinions held by HR professionals towards individuals with mental disorders in the workplace.

Table 1
Sociodemographic Data of Participants

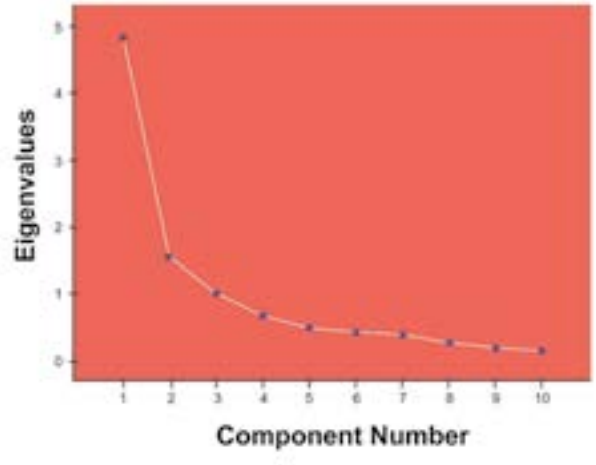
HR Professionals per City	*n*	*%*
Guadalajara	21	33.87
Puebla	21	33.87
CDMX	20	32.25
Sex		
Male	17	27.4
Female	45	72.6
Degree Programs		
Psychology	26	41.9
Administration	8	14.5
HR Degree	5	8.1
Others	23	37.09
Educational Attainment		
Bachelor's degree	36	58.1
Specialized studies	8	12.9
Diploma course	7	11.3
Master's degree	.9	14.5
PhD	2	3.2
Business sectors		
Personnel recruitment	9	14.5
Education	6	9.7
Pharmaceutical industry	5	8.1
Consulting	5	8.1
Parameters (in years)	*Mead*	*SD*
Age	*33.61*	*9.2*
Educational Attainment	*20.12*	*2.9*
Work Experience	*7.8*	*6.69*

Sociodemographic data are given in Table 1 with percentages, means and standard deviation depending on the characteristics of each variable. A total of 62 interviews were conducted with HR professionals in companies in Guadalajara ($n = 21$), Puebla ($n = 21$), and CDMX ($n = 20$).

Forty-five of the participants were women (72.6%), and the average age was 33.61 ($SD = 9.2$). The mean level of educational attainment was 20.12 years ($SD = 2.9$). Average work experience in HR was 7.8 years ($SD = 6.69$). A wide range of academic backgrounds was observed, with participants having pursued 17 different degree programs. The most common fields of study were psychology (41.9%), business administration (14.5%) and HR management (8.1%). Regarding postgraduate studies, 58.1% of participants had not pursued further studies, 12.9% had completed specialized studies, 11.3% held graduate degrees; 14.5% master's degrees and 3.2% doctorates. HR professionals worked across 23 business sectors, the most common ones being personnel recruitment (14.5%), followed by education (9.7%), with a tie between the pharmaceutical industry and consulting (8.1%).

No significant differences were found in the age and education variables in the cities studied. However, variations were observed in the number of years of work experience. In CDMX, the average number of years spent in HR was 10.22, with 7.8 in Guadalajara 7.8 and 5.7 in Puebla.

Regarding the validation and structure of the OCAL-TM, data from the screen plot and eigenvalues were used to determine the optimal number of factors. This analysis indicated that the most appropriate configuration for the scale consisted of two factors, as shown in Graph 1. During this process, item 5 was eliminated due to its reduced factor loading (< .40). The final scale therefore comprised 10 items (as shown in Table 2), showing that two factors accounted for 63.44% of the variance, and demonstrating high reliability with a Cronbach's alpha coefficient of .874.



Graph 1. Scree Plot for Factor Analysis for OCAL-TM

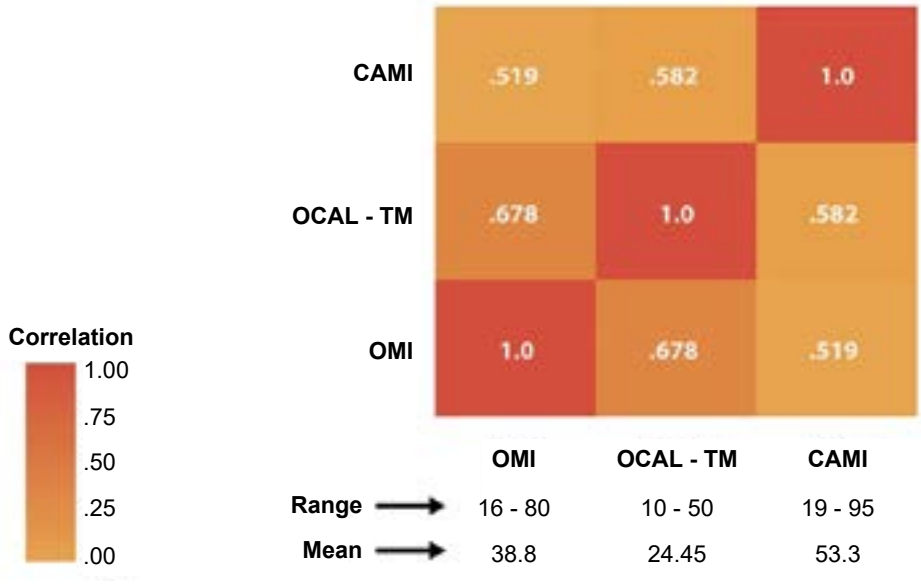
Note: The scree plot shows an inflection point at the second component (x-axis), since the eigenvalues goes below 1 at this point.

Table 2
Rotated Component Matrix, Factor Loads and Reliability of OCAL-TM

Item No.	*Item*	*Cronbach's Alpha*	*Factor*	*Factor loading*
1	People with mental disorders lack the capacity to perform under pressure.	.859	1	.535
2	People with mental disorders are more likely to make mistakes in the workplace due to their condition.	.856	1	.825
3	Anyone with a history of mental disorders has difficulty managing frustation.	.871	1	.848
4	People with mental disorders are just as capable of using the latest technologies, machinery and office formats.	.881	2	.758
5	A mental disorder prevents people from resolving work challenges or conflicts.	.864	1	.590
6	People with mental disorders are suitable for jobs that require leadership.	.855	2	.677
7	People with mental disorders will have difficulty identifying opportunities that could benefit a company.	.857	2	.799
8	Working in a team is a difficult requirement for people with mental disorders.	.860	2	.534
9	A job that requires more creativity cannot be performed by someone with a mental disorder.	.860	2	.825
10	People with mental disorders require additional supervision in the workplace.	.856	1	.817

Graph 2 is a heat map based on Spearman's test between the three instruments analyzed. Statistically significant correlations were observed between the three scales, with a significance level of $p =< .000$. Correlations between OCAL-TM and CAMI, and OCAL-TM and OMI was higher than the correlation between OMI and CAMI.

To assess the degree of stigma or discrimination towards people with MD, the possible scores on each scale were analyzed and the mean was examined in the studied sample. The last quartile of the values was calculated, enabling us to identify the number of participants who obtained extremely high scores, indicative of less favorable



Graph 2. Heat Map of Instrument Correlations with Range and Means

Note: CAMI: Community Attitudes to Mental Illness Scale; OMI: Scale and Opinions on Mental Illness scale; OCAL-TM: Opinions on Workplace Capacities of People with Mental Disorders Scale

attitudes and opinions towards people with MD. The results revealed that 18 participants obtained extreme values on the scales. Seven of these 18 participants obtained a score in the last quartile on the three scales, while the remaining 12 did so on the OMI and OCAL-TM scales.

DISCUSSION

The results of this study provide detailed insight into the attitudes and opinions of HR towards people with MD in three cities in Mexico. Most participants were women, reflecting the feminization of the HR labor market. Additionally, the variety of professions and work experience suggests that HR professionals are drawn from various contexts.

The presence of 18 individuals with exceptionally high scores on the scales suggests the possibility of potentially discriminatory attitudes and opinions towards individuals with MD. No significant statistical differences were found in attitudes and opinions towards people with MD among the cities studied, suggesting that geographic location and the specific context of each city do not affect these perceptions. The absence of differences, however, does not necessarily indicate positive attitudes. On the contrary, it could reflect a generality of less favorable attitudes toward people with MD.

The Opinions of Work Capacities of people with Mental Disorders Scale (OCAL-TM), constitutes a valuable tool for understanding the opinions of HR personnel of the work capacity of individuals with MD. It addresses the need to evaluate and understand the attitudes and opinions of HR personnel, who wield enormous influence in shaping organizational culture and formulating wellness policies.

Comprising 10 items, the OCAL-TM demonstrated high reliability and validity, with a Cronbach's alpha coefficient of .874 and moderate correlations with scales used to measure opinions in the general population (CAMI) and among health professionals (OMI). The correlation observed between the scales, supported by Spearman's test, indicates good concurrent validity among these scales. This cohesion suggests that HR personnel attitudes and opinions towards people with MD, as assessed by the OCAL-TM, consistently align with the general attitudes of the population and health professionals. This finding reinforces the importance of the OCAL-TM in the field of HR, highlighting its usefulness as a valid indicator of prevalent attitudes towards mental health at work. This underscores its role as an indispensable instrument for future research and comprehensive evaluations within the realm of human resources and labor inclusion. To strengthen its external validity, it should be administered to professionals other than HR personnel, which would allow for a broader evaluation of its usefulness and permanence. The OCAL- TM not only contributes to the internal understanding of HR perceptions but can also be used as an external tool to sensitize organizational leaders and other professionals to the importance of fairly and inclusively assessing the job skills of people with MD.

In a world where well-being at work is essential to public health and the quality of life of workers, the perceptions and understanding of HR professionals play a critical role.

This study underscores the need to address the negative attitudes and opinions identified. Fostering a culture of inclusion and eliminating stigma are key steps towards equitable work environments, regardless of mental health condition. Furthermore, the disclosure of an MD is the result of an interaction between internal and external factors. An individual's decision does not stem solely from the individual self but is also indirectly influenced by the environmental context acquired through social interactions (Hastuti & Timming, 2021). Social support plays an essential role in the disclosure process. It is therefore necessary for companies to promote mental health education, to prevent discrimination, prejudice, and stereotypes in the work environment.

Recognizing the influence of HR on organizational culture and mental health, this critical analysis highlights the urgent need to overcome existing barriers and promote workplace inclusion. Since functional recovery is a central aim of modern psychiatry, the perception of HR personnel, who constitute the primary filter in the job search process, is crucial. Identifying negative perceptions, such as the lack of technological skills, limitations in resolving challenges or conflicts at work, and the inability to make decisions at critical moments, underscores the need for mental health information to promote tolerance and workplace inclusion.

Through this study, we not only respond to the need to understand internal attitudes, but also to the opportunity to lead mental health awareness and education initiatives in the workplace. We underline the need to provide HR professionals with specific information on mental health, to foster tolerance and workplace inclusion. By doing so, we contribute to creating a more equitable, healthier work environment for all people, regardless of their mental health status.

Combining tools such as the OCAL-TM with educational strategies will ultimately strengthen HR's position in promoting an organizational culture that values and supports the mental health of all employees.

A key limitation of this transversal study is its reliance on a snapshot of data collected at a single point in time. The study may also be subject to self-report bias, as participants could provide socially desirable responses rather than accurate reflections of their behaviors or attitudes. Another limitation is the small sample size, which may restrict the generalizability of the findings. Future research should aim for larger, more representative samples to enhance the validity and reliability of results.

A major strength of this research is that it redresses the

lack of information on the attitudes and opinions of HR for people with MD. We have created a scale that can be used in this setting, to further understand these factors and enable them to be addressed in every workplace.

CONCLUSION

The OCAL-TM scale, with two factors and 10 items, showed adequate psychometric properties in the sample studied. Strong correlations were observed between the three scales studied. The resulting scores were in the middle of the range for each of these instruments, meaning that a degree of stigma and/or negative attitude toward people with SMI can be observed in the studied sample. A comprehensive approach toward MD within the workplace is essential to foster inclusion and reduce stigma.

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None.

Conflict of interests

The authors declare that they have no conflicts of interest.

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APPENDIX

Escala de Opiniones sobre las Capacidades Laborales de las personas con Trastornos Mentales (OCAL-TM)

INSTRUCCIONES:

Lee cada uno de los siguientes enunciados y señala el grado en el que estás de acuerdo con cada afirmación en relación con las personas con trastornos mentales (TM) en el ámbito laboral. Indica tu respuesta seleccionando una de las opciones que vienen en el primer renglón: Totalmente de acuerdo, de acuerdo, ni acuerdo ni desacuerdo, no estoy de acuerdo y totalmente en desacuerdo.

En algunas preguntas estar totalmente de acuerdo valdrá 5 y en otras valdrá 1, pero debes contestar de acuerdo con lo que dice en la parte de arriba en cada columna.

Indica tu respuesta en función de tu percepción general, no de casos particulares o experiencias aisladas. No hay respuestas correctas o incorrectas; se trata de expresar tus opiniones y actitudes hacia las capacidades laborales de las personas con trastornos mentales.

	Preguntas	*Totalmente de acuerdo*	*De acuerdo*	*Ni acuerdo ni desacuerdo*	*No estoy de acuerdo*	*Totalmente en desacuerdo*
1	Las personas con algún trastorno mental carecen de la capacidad de actuar bajo presión	5	4	3	2	1
2	Las personas con algún trastorno mental tienen más riesgo de cometer errores en el entorno laboral debido a su condición	5	4	3	2	1
3	Cualquier persona con historia de problemas mentales tiene dificultades para manejar sus frustraciones	5	4	3	2	1
4	Las personas con trastornos mentales son igual de capaces para utilizar las tecnologías más recientes, maquinaria o formatos de oficina	1	2	3	4	5
5	Un padecimiento mental provoca que las personas no sepan resolver retos o conflictos en el trabajo	5	4	3	2	1
6	Las personas con padecimientos mentales son aptas para desempeñar trabajos que requieren liderazgo	1	2	3	4	5
7	Las personas con padecimientos mentales difícilmente identificarán oportunidades que podrían beneficiar a una empresa	5	4	3	2	1
8	Trabajar en equipo es un requerimiento difícil de cumplir para las personas con padecimientos mentales	5	4	3	2	1
9	Un empleo que requiere mayor creatividad difícilmente podría ser desempeñado por alguien con un padecimiento mental	5	4	3	2	1
10	Las personas con padecimientos mentales requieren mayor supervisión en el área de trabajo	5	4	3	2	1
				Puntaje Total:		

salud mental

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Validation of the Self-administered Binge Eating Disorder Scale in Mexican Children

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ABSTRACT

Introduction: Regarding eating psychopathology, the international literature shows that between 7% and 17% of children aged seven to twelve present with disordered eating behaviors. **Objective:** The purpose of the study was to evaluate the psychometric characteristics of the Self-administered Children's Binge Eating Disorder Scale (SA-C-BEDS) as a screening tool for the risk of binge eating disorder (BED) in a Mexican child population. **Method:** The self-administered version of the C-BEDS was translated into Spanish and adapted, and its reliability, and exploratory and confirmatory validity obtained. It was sent to two samples of elementary school pupils from May-July 2022 through the *SurveyPlanet* online platform. **Results:** A total of 378 children (girls = 193 and boys = 185) with a mean age of 10.22 years (*SD* = .94), with no differences by sex, answered the questionnaire. "Eating without being hungry" was the main behavior reported (44.8% in girls and 33.7% in boys), followed by eating associated with a certain mood (25% in girls and 21.8% in boys). The scale was distributed within a single factor, obtaining a significant Bartlett's test of sphericity, .73 on the Kaiser-Meyer-Olkin test and an Ordinal alpha reliability of .81. Confirmatory validity showed that the model fits the data and is valid. **Discussion and conclusion:** Preliminary evidence of the validity and reliability of the SA-C-BEDS for evaluating the risk of binge eating behaviors in Mexican children was obtained, suggesting that this scale is useful for the timely identification of the risk of BED cases.

Keywords: Child, binge eating disorder, obesity, psychometrics.

RESUMEN

Introducción: En lo que se refiere a psicopatología alimentaria, la literatura internacional muestra que entre 7% y 17% de los niños entre siete y doce años presentan trastornos de la conducta alimentaria. **Objetivo:** El propósito del estudio fue evaluar las características psicométricas de la Escala Autoadministrada de Trastorno por Atracón Infantil (ESCATA-I) como herramienta de detección del riesgo de trastorno por atracón (TA) en una población infantil mexicana. **Método:** Se tradujo y adaptó la versión autoadministrada del C-BEDS (por sus siglas en inglés) y se obtuvo su confiabilidad y validez exploratoria y confirmatoria. Se envió a dos muestras de alumnos de primaria entre mayo y julio de 2022 a través de la plataforma online *SurveyPlanet*. **Resultados:** Respondieron al cuestionario 378 niños (niñas = 193 y niños = 185) con una edad promedio de 10.22 años (*DE* = .94), sin diferencias por sexo. "Comer sin tener hambre" fue la principal conducta reportada (44.8% y 33.7% en niñas y niños), seguida de comer asociado a un determinado estado de ánimo (25% y 21.8% en niñas y niños). La escala se distribuyó en un solo factor, con una prueba de esfericidad de Bartlett significativa, .73 en la prueba de Kaiser-Meyer-Olkin y una confiabilidad alfa ordinal de .81. La validez confirmatoria mostró que el modelo se ajusta a los datos y es válido. **Discusión y conclusión:** Se proporciona evidencia preliminar de la validez y confiabilidad del ESCATA-I para evaluar el riesgo de conductas de atracón en niños mexicanos, útil en la identificación oportuna del riesgo de casos de TA.

Palabras clave: Niños, trastorno por atracón, obesidad, psicometría.

INTRODUCTION

Childhood obesity is considered a risk factor for chronic diseases (WHO, 2022), low quality of life and psychological problems (Rankin et al., 2016; Trujano-Ruiz et al., 2013). Data from the World Health Organization (WHO) indicate that at an international level, the prevalence of overweight and obesity in children and adolescents aged five to nineteen increased from 4% in 1975 to over 18% in 2016 (WHO, 1994; WHO, 2022).

In Mexico, overweight and obesity in pupils aged five to eleven is a priority issue due to the increase in prevalence. The National Health and Nutrition Surveys (Spanish acronym ENSANUT) show that the population reported a combined prevalence of overweight and obesity in this age range of 26% in 2006, 35.6% in 2018, and 38.2% in 2020 (Gutiérrez et al., 2012; Olaíz-Fernández et al., 2006; Shamah-Levy et al., 2020). For the above reasons, it has become essential to identify the correlations and predictors of the alarming increase in these indicators to reduce rates.

While genetics plays a critical role, other physiological, social, behavioral, and psychological factors also have a substantial impact. Children with overweight or obesity are more likely to have psychosocial problems than their peers with a healthy weight, in addition to suffering from the stigma attached to obesity, criticism and bullying, with the resulting health consequences, although it is unclear whether psychological and psychiatric problems are a cause or consequence of childhood obesity (Rankin et al., 2016).

Regarding eating psychopathology, international literature shows that between 7% and 17% of children aged seven to twelve present with disordered eating behaviors (DEB) and that prevalence is higher among those suffering from obesity (Gowey et al., 2014). In Mexico, the ENSANUT found that in both boys and girls between the ages of ten and thirteen, concern about weight gain was more frequent, with 11.4% and 11.3%, followed by overeating with 10% and 9.9%, and loss of control over eating, with 7% and 5.8% respectively (Olaíz-Fernández et al., 2006).

Franco-Paredes et al. (2017) found that in children aged ten and eleven with overweight and obesity in Mexico, DEBs occurred in 22.9% and 15.9% respectively, coinciding with the data reported internationally (Caleyachetty et al., 2018).

Eating psychopathology includes Binge Eating Disorder (BED), characterized by recurrent episodes of overeating while experiencing a feeling of loss of control over what or how much one is eating, accompanied by great distress, without involving any compensatory behavior and with possible weight gain as a result. Apropos of this, the first meta-analytical review of children and adolescents aged five to twenty-one with overweight and obesity was recently published. The results showed that binge eating and loss of control over eating occurred in a quarter of children regardless of race, sex, age, body mass index or evaluation method (He et al., 2017).

Regarding the research methods used to diagnose DEBs and BED in children, structured and unstructured interviews such as the Kids' Eating Disorder Survey (KEDS) and the Eating Symptom Inventory (ESI) have predominated. None of them, however, evaluates loss of control, a crucial element in diagnosis (Childress et al., 1993; Whitaker et al., 1989). The Children's Eating Disorders Examination (ChEDE) and the adolescent version of the Questionnaire on Eating and Weight Patterns (QEWP-A) have also been used. However, both showed discrepancies when assessing binge eating or loss of control over eating (Morgan et al., 2002; Tanofsky-Kraff et al., 2004). Evaluating EDs in children requires readily available, age-appropriate interviews, given that the diagnostic criteria developed for adults may not be appropriate, and that children find it difficult to answer recall questions, or engage in lengthy interviews with open-ended questions, which does not mean that BED does not occur in children, but rather that a specific age-appropriate approach is required. This led Marcus and Kalarchian (2003) to propose provisional criteria for measuring BED in children, based on a review and summary of findings from studies focusing on the age of onset of binge eating. The only specific questionnaire for children validated in Mexico is ChEAT (Escoto & Camacho, 2008), with a reliability of .82.

As a result, Shapiro et al. (2007) developed the Children's Binge Eating Disorder Scale (C-BEDS), administered to the US child population with a mean age of 8.7 within a range of five to thirteen years regardless of body weight. Subjects were Caucasian (58%), African American (30.9%), Asian (1.8%), Native American (1.8%), or Hispanic (1%) or self-identified as "other" (5.5%). The scale comprises simple, understandable, quick, and appropriate questions to capture the key characteristics of BED (Shapiro et al., 2007). The scale contains seven items based on the critical behaviors proposed by Marcus and Kalarchian. Six of the items are binary, while item six measures the duration of the behaviors in weeks. The results showed that approximately half the children reported sometimes eating without being hungry, not being able to stop once they had started to eat and wanting food as a reward for doing something well.

Finally, 63% of the subjects stated that they ate because of negative emotions, while 29% of the total sample met the BED provisional criteria. The C-BEDS therefore proved to be a viable alternative and easier to administer to children to identify binge eating behaviors (Shapiro et al., 2007).

The usefulness of the C-BEDS was compared with that of the ChEAT in a sample aged six to twelve. It proved more effective in identifying eating behavior due to negative emotions and the possibility of developing BED (Dmitrzak-Węglarz et al., 2019). The scale has been administered in other contexts.

In Poland, Dmitrzak-Węglarz et al. (2019) examined 550 healthy children within an age range of six to twelve years, to determine whether a correlation exists between overweight and obesity and BED symptoms and to verify the usefulness of the scale as a BED screening instrument. The C-BEDS scale was also used as the basis for developing the Children's Brief Binge-Eating Questionnaire. Franklin et al. (2019) developed the questionnaire and administered it to seventy children aged between seven and eighteen who were patients at an obesity clinic in the Southeast of the United States.

The objective of the present research was to evaluate the psychometric characteristics of the C-BEDS in a child population from fourth to sixth grade at public schools in the states of Campeche (southeast Mexico) and Mexico (central Mexico). A self-administered version was used to avoid the difficulty of undertaking individual diagnostic interviews and to determine the usefulness of this instrument for large-scale surveys. The reliability of the scale and exploratory and confirmatory validity were obtained in two samples of Mexican children. In addition, the percentage distribution of each of the items in the questionnaire was reported by sex.

METHOD

Sample

All the children included in the purposive sampling study in the morning shift at four schools in the federal school system of the Ministry of Public Education: two in the State of Campeche and two in the State of Mexico. The sample comprised 386 children, eight of whom did not wish to participate, leaving a total of 378, including 193 girls (51.1%), and 185 boys (48.9%), who were elementary school pupils in the states of Campeche (n = 249; 51% girls) and Mexico (n = 129; 51.2% girls) in the period from May to July 2022. The t test yielded a mean age of 10.22 (SD = 0.94) (t = 1.26, p = .206), with no statistical differences by sex, and an age range of eight to twelve.

Instruments

C-BEDS is a brief interview designed to assess the risk of binge eating in children. It comprises seven items based on the characteristic behaviors proposed by Marcus and Kalarchian (2003), six of which are binary questions and one of which measures the evolution of behaviors. Questions are scored 0 (no) and 1 (Yes). Children are classified as being at risk of BED if they answer "yes" to the questions on eating without being hungry and feeling unable to stop eating, and at least one of the questions about eating in response to emotions, eating as a reward or hiding food, having symptoms that have persisted for more than three months (question six), and question seven "Do you ever do anything to get rid of what you ate?" (Shapiro et al., 2007).

Shapiro et al. (2007) found that the question on the duration of the evolution of symptoms was unreliable because children lack a clear notion of time beyond three months in the past. For this reason, we deleted question six in the reliability and validity analysis of the scale, and performed the analysis with the six items scored with yes (1) and no (0). We called this version of the questionnaire the Self-Administered Children's Binge Eating Disorder Scale (SA-C-BEDS).

To obtain the definitive version, the scale was translated using the back translation method from English to Spanish. A translator whose mother tongue is Spanish translated the scale from English to Spanish, and a translator whose mother tongue is English subsequently translated it from Spanish to English to ensure that the items maintained the same meaning as in the original scale (van Widenfelt et al., 2005). This seven-item version was used to conduct cognitive laboratories with fifteen children from fourth to sixth grade of elementary school in the State of Morelos, Mexico. They were asked about their understanding of both the questions and the structure of the questionnaire. Three of the authors of this article (CU, IC, LAR) participated in writing the final items according to the results of the cognitive laboratories. The version resulting from this phase was administered to children within this age range to check their understanding of the concepts and answer form. The definitive version was made up of all the items from the original version, which were uploaded to an online platform together with a battery of questionnaires, two of which were developed and validated in Mexico in samples of adolescents and adults: disordered eating behaviors (Unikel et al., 2004) and thin ideal internalization (Unikel et al., 2006), while three were developed in other countries: body dissatisfaction (Stice et al., 2006), appearance-related teasing (Castillo et al., 2023) and negative affect (Robles & Páez 2003).

Procedure

Contact was established with the school authorities in the area, who, after agreeing to participate in the study, liaised between school principals and researchers. The questionnaires were administered by sending internet links via WhatsApp, initially to the school principals, and subsequently to the teachers of elementary school pupils from fourth to sixth grade in the four participating schools. Teachers sent the internet link to parents, explaining that before answering the questions, they should read the informed consent form and decide whether they wished their children to participate. If they chose not to, that would indicate the end of their participation. Given that the children were asked to provide their informed consent, parents were asked to help them if they had problems understanding and answering the consent form, although only the children answered the questionnaires.

Data analysis

Analyses of frequencies and percentages were conducted with central tendency measures of the demographic variables and for each of the questions on the scale. Item-total correlations were obtained, considering that items with a value of less than .20 should be eliminated (Streiner & Norman, 2008). An exploratory factor analysis was conducted (Field, 2009), based on Yela's criteria (1997) according to which 1) An item must have a saturation equal to or greater than .40, 2) An item is only included in the factor with the highest level of saturation, 3) Conceptual congruence must exist between all the items included in a factor, 4) To be considered as such, each factor must comprise at least three items. Finally, a confirmatory factor analysis was conducted (Brown, 2015). The sample was randomly divided into two parts, yielding an initial sample of 197 subjects (ninety-six girls and 101 boys) and a second sample with 181 subjects (ninety-seven girls and eighty-four boys), so that the exploratory analysis could be undertaken with one and the confirmatory analysis with the other, and in both cases, the quota of five to twenty participants per item was achieved (Campo-Arias & Oviedo, 2008; Sánchez & Echeverry, 2004). In addition, the statistical power of the sample was obtained for a medium effect size of .922 and .896 respectively (Cárdenas & Arancibia, 2016) and the minimum requirement of 150 subjects was met to conduct the confirmatory factor analysis (Wang & Wang, 2012), reliability was obtained with Ordinal alpha (Meulman et al., 2004). SPSS 21.0 (IBM Corp, 2012), JASP (JASP Team, 2020), Factor (Lorenzo-Seva & Ferrando, 2011) and G *Power (Faul et al., 2007) were used for the data analysis.

Ethical Considerations

The protocol was approved by the Research Ethics Committee of the National Institute of Public Health on February 6, 2021, grant number 1542. The questionnaire links sent to parents included informed consent forms for parents or guardians and children.

RESULTS

Disordered Eating behaviors

Disordered eating behaviors are shown separately for boys and girls. The main behavior found was eating without being hungry, with 44.8% in girls and 33.7% in boys, followed by eating when they are in a bad, sad, bored or other mood, with 25.0% in girls and 21.8% in boys, followed by eating as a reward for doing something, with 26.0% in girls and 23.8% in boys, followed by being unable to stop eating, with 15.6% and 15.8% respectively, and hiding food, with 18.8% and 12.9% respectively. No statistically significant differences were found by sex.

Reliability and exploratory validity

The item-total correlations were obtained, considering the full original scale. The first five questions showed values greater than .20, while questions six and seven obtained values of .10 and .14, respectively. According to Streiner & Norman (2008), item-total correlations of at least .20 are required to retain an item so we considered removing these two items. Notwithstanding the above, due to the conceptual importance of items six and seven, however, we conducted the factor analysis with the seven items comprising the scale. The analysis yielded a two-factor structure, the first comprising questions one to five, and the second questions six and seven. Since it is important for the factor to contain at least three items (Yela, 1997), in addition to the fact that questions six and seven have item-total correlations of less than .20 and since item six was considered inappropriate for children because of the difficulty of recalling the length of time they have engaged in these behaviors (Shapiro et al., 2007), we decided to eliminate these questions and repeat the factor analysis with questions one to five.

As a result, only one factor was obtained, (Table 1), with a significant Bartlett sphericity test ($B = 104.77$, $df = 15$; $p < .001$) and a Kaiser-Meyer-Olkin test value of .73 (KMO). Ordinal alpha reliability was calculated, yielding a value of .81. The last version of the scale is a modified

Table 1
Factor loadings for the exploratory and confirmatory factor analysis of the Self-administered Children's Binge Eating Disorder Scale

	Item	*Factor Loadings*
1	Do you ever want to eat when you are not even hungry? ¿A veces quieres comer cuando no tienes hambre?	.671
2	Do you ever feel that when you start eating you just cannot stop? ¿A veces sientes que cuando empiezas a comer, no puedes parar?	.675
3	Do you ever eat because you are in a bad, sad, bored, or any other mood? ¿A veces comes porque te sientes mal, triste, aburrido o de cualquier otro humor?	.595
4	Do you ever want food as a reward for doing something? ¿A veces quieres comida como recompensa por hacer algo?	.640
5	Do you ever sneak or hide food? ¿A veces ocultas comida o la llevas a escondidas?	.597
	Ordinal Alpha	.81

version with five items.

Confirmatory validity

Confirmatory Factor Analysis was performed using Diagonally Weighted Least Squares (DWLS) (suitable for ordinal measurement levels).

This confirmatory factor analysis showed appropriate goodness of fit indices (*CFI* = 1.00, *RMSEA* = .000, *CI* 90% [<.102], *GFI* = .98, *SRMR* = .070 Chi2 (Chi2 = 4.81, *gl* = 5, *p* = .43). All items showed statistically significant factor loads, with estimates between .53 and .77, and Z values between 5.5 and 7.3 (with $p < .001$ levels in all cases). (Figure 1)

DISCUSSION AND CONCLUSION

To obtain a self-administered instrument that makes it possible to evaluate binge eating episodes and the risk of BED in children, the self-administered version of the C-BEDS was translated into Spanish, adapted, and administered to Mexican children ages eight to twelve. The psychometric properties of the questionnaire were also obtained.

The SA-C-BEDS provides a new tool in the field of study of eating disorders in children. It is a self-administered instrument that enables cross-cultural research, as well as evaluations for epidemiological studies, making it possible to determine the prevalence and impact of BED-related behaviors in the child population and subsequently develop timely interventions. It is also necessary to have specific instruments for behavior related to loss of control over eating and other behaviors associated with eating disorders, since to date, studies have reported inconsistent prevalence depending on the evaluation instruments used (Tanofsky-Kraff et al., 2004). The SA-C-BEDS has the advantage of being brief. It does not include recall questions that might be difficult to answer in some cases, nor does it have open questions, which can be complicated for children. According to the research conducted, these elements should be considered when evaluating the child population (Marcus & Kalarchian, 2003). In addition, a question should be included on loss of control over eating, which is key in the diagnosis of eating disorders, unlike other instruments that do not include it (Childress et al., 1993; Whitaker et al., 1989). Likewise, adapting it to a self-administered instrument avoids the limitation observed by Franklin et al. (2019), of causing discomfort in subjects when answering an interview.

Although the percentages reported in other studies show trends in response frequency, it is not possible to compare them with our results, because these are samples with distinctive characteristics. For example, the study by Shapiro et al. (2007) involved children interested in participating in a program designed to improve eating habits and physical activity, the majority of whom were overweight and the offspring of obese parents, whereas the study by Dmi-

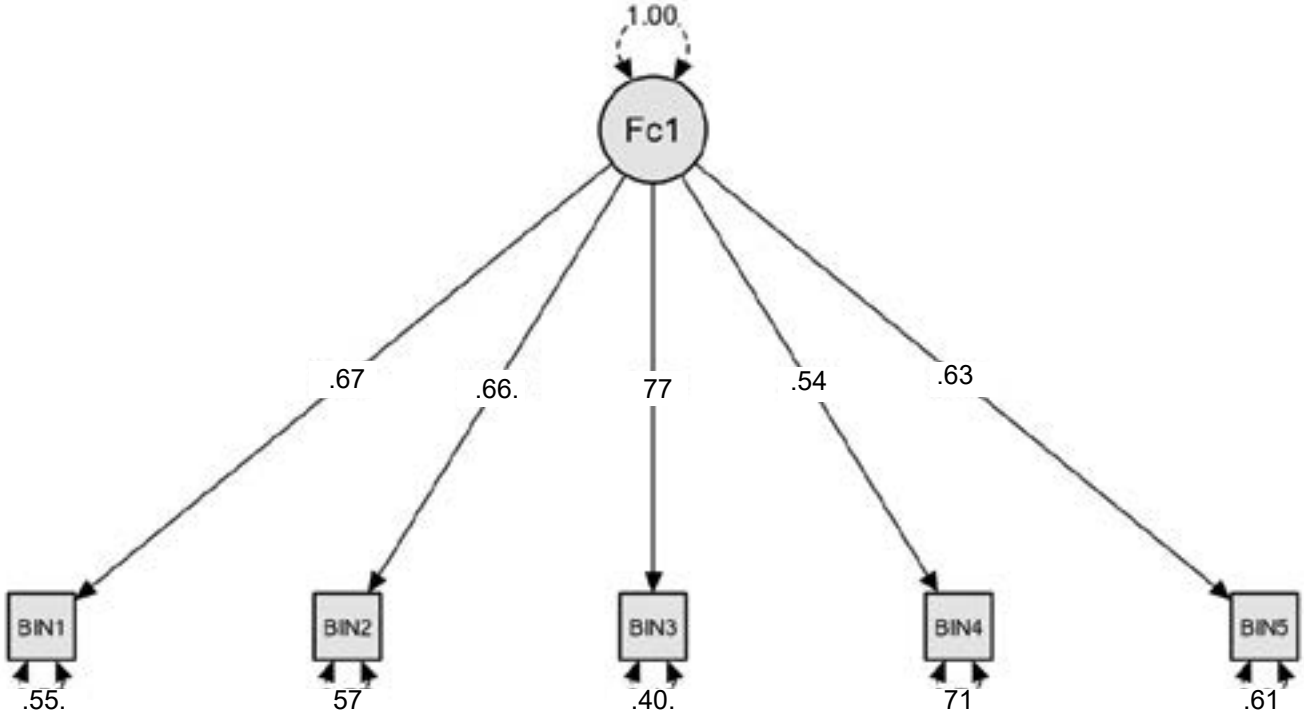

Figure 1. Confirmatory Factorial Analysis of the Self-administered Children's Binge Eating Scale

trzak-Węglarz et al. (2019) comprised school age children in Poland. In this last study, based on the answers to the C-BEDS items, the authors concluded that 12% of the subjects had a substantial risk of having an ED, which differs from the original authors' study, which found that 29% of subjects were at substantial risk. Conversely, the meta-analysis conducted by He et al. (2017) shows that the global prevalence of binge eating was 22.2%, while loss of control over eating was 31.2% (He et al., 2017) in studies with both community and clinical samples. One explanation for the discrepancies found is that according to Franco-Paredes et al., (2017) and Gowey et al. (2014), disordered eating behaviors occur more frequently in overweight or obese children, which may be the case in some of the studies reviewed by these authors.

Nationwide, the data provided by ENSANUT, which evaluates DEBs including loss of control while eating, show that in 2006, 18.3% of the population aged ten to nineteen experienced this problem. In 2012, 7% of boys and 5.8% of girls aged between ten and thirteen stated that they were in this situation (Gutiérrez et al., 2012; Olaíz-Fernández et al., 2006; Shamah-Levy et al., 2020). In the present study, this behavior was present in 15.8% of the boys and 15.6% of the girls, with no differences being reported between the participants of the two populations included in the study. These differences are only potential since this is a nationwide survey with multistage sampling and face-to-face data collection rather than a study with convenience sampling conducted online. One of the criteria proposed by Marcus and Kalarchian (2003) for BED is that eating should not be associated with the regular use of inappropriate compensatory behaviors. In the C-BEDS, this criterion is reflected in question seven (getting rid of food). However, when internal consistency was evaluated, it was decided to remove it from the scale since its item-total correlation was less than .20, and it was not concentrated in a factor with at least three items. The five remaining items obtained an ordinal alpha of .81, grouped into a single factor while the confirmatory validity analysis also showed a single factor with adequate factor loads for the five proposed items, and the model fit the data, proving that it is valid.

Although the measurement instruments available to date have made it possible to study the risk of BED in children, further studies are required in both clinical and population contexts to determine their incidence and acquire a deeper understanding of their characteristics and the circumstances surrounding them and undertake preventive actions and intervention programs in several types of population. It is also recommended to expand the study and administer it to more populations in Mexico, ideally with a representative nationwide sample. Achieving this requires having more instruments to assess the risk of BED in children, especially through self-administered instruments. The present study therefore contributes preliminary evidence, specifically the construct validity and adequacy of the scale to the proposed theoretical model through confirmatory analysis, as well as internal consistency, to the study of binge eating with an instrument structured around a single factor for use in population studies to facilitate early detection of the problem.

Limitations of the study include the fact that since it is a self-reported instrument, it is not sufficient to establish a clinical diagnosis of BED. The anthropometric measurements (which would have been useful for characterizing the sample by body weight categories), were based on parents' reports, reducing their reliability. Other instruments were administered to validate them, which did not enable us to perform convergent or divergent validity analyses. Given the characteristics of the study, no diagnostic interviews were conducted nor was the group compared with a clinical sample. Validations of the scale should therefore be undertaken on its self-reported version in other contexts, which would shed more light on the risk of BED in the child population, as well as convergent, divergent, predictive, test-retest validation and a comparison with clinical samples.

The SA-C-BEDS in Spanish is a valid instrument for measuring specific eating behaviors of BED in the sample studied in two Mexican states (Campeche and Mexico). It is brief and easy to understand and administer. It also provides key information for identifying cases in a timely manner and is useful in the prevention of subsequent BED, as well as related complications.

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Conflict of interests

The authors have no relevant financial or non-financial interests to disclose.

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Psychometric properties of the Acquired Capability for Suicide Scale in Mexican adolescents

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ABSTRACT

Introduction. There is a dearth of valid and reliable psychometric scales to measure Acquired Capability for Suicide in adolescents, who are among the most vulnerable group for suicide attempts in Mexico. **Objective.** To obtain the reliability and structural, convergent, and predictive validity, as well as a sensitivity and specificity test of the adapted version of the ACSS in Mexican adolescents. Additionally, we tested whether the adapted structure of the scale is consistent for both clinical and non-clinical adolescent populations. **Method.** A Confirmatory Factor Analysis, invariance test and reliability analyses were obtained from a sample of 429 Mexican adolescents (73% non-clinical and 27% clinical participants). Then, a refined version of ACSS (ACSS-AP) was applied to a different sample of 345 adolescents diagnosed with psychiatric disorders, to determine its convergent validity with related constructs, and its predictive validity through a simple linear regression to predict lifetime suicide attempts. The sensitivity and specificity of the instrument were evaluated using the occurrence of lifetime suicide attempts, analyzed through a binomial logistic regression model. **Results.** A factor structure is proposed for each sub-sample; the Fearlessness about death factor is stable across both clinical and non-clinical populations, while the Pain tolerance factor in the clinical sample is assessed through more severe pain exposure events. The fit indices for both scales were excellent. The reliability for non-clinical adolescents (α = .67 -ω = .71-) was lower compared to clinical adolescents (α = .87 -ω = .87-). The scale correlated positively with a moderate strength with its nomological network and predicted lifetime suicide attempts explaining 16.4% of the variance. The overall classification accuracy of the model was 80.3%. **Discussion and conclusion.** ACSS-AP showed validity and reliability in clinical populations. Acquired capability manifests differently in clinical and non-clinical adolescent populations.

Keywords: Suicide attempt, adolescents, measurement, risk factors.

RESUMEN

Introducción. Existe una escasez de escalas psicométricas válidas y confiables para medir la Capacidad Adquirida del Suicidio en adolescentes, quienes se encuentran entre el grupo más vulnerable para los intentos de suicidio en México. **Objetivo.** Obtener la confiabilidad y validez estructural, convergente y predictiva, así como una prueba de sensibilidad y especificidad de la versión adaptada del ACSS en adolescentes mexicanos. Adicionalmente, se probó si la estructura adaptada es consistente en población clínica y no clínica. **Método.** Se realizó un Análisis Factorial Confirmatorio, pruebas de invarianza y confiabilidad en una muestra de 429 adolescentes mexicanos (73% no clínicos y 27% clínicos). La versión refinada del ACSS (ACSS-AP) se aplicó a 345 adolescentes con trastornos psiquiátricos, para determinar su validez convergente con constructos relacionados, y su validez predictiva mediante una regresión lineal simple para predecir los intentos suicidas a lo largo de la vida. La sensibilidad y especificidad del instrumento fue evaluada usando la ocurrencia de intentos suicidas a lo largo de la vida, analizada a través de un modelo de regresión logística binomial. **Resultados.** Se propone una estructura factorial para cada submuestra; el factor Valentía ante la muerte es estable en ambas submuestras, mientras que Tolerancia al dolor es evaluado mediante eventos de exposición al dolor más severos en la muestra clínica. Los índices de ajuste de ambas escalas fueron excelentes. La confiabilidad para los no clínicos (α = .67 -ω = .71-) fue menor en comparación con los clínicos (α = .87 -ω = .87-). La escala correlacionó moderada y positivamente con su red nomológica y predijo los intentos de suicidio en un 16.4%. El porcentaje de clasificación global del modelo fue del 80.3%.**Discusión y conclusión.** La ACSS-AP mostró validez y confiabilidad en poblaciones clínicas. La capacidad adquirida se manifiesta diferente en ambas muestras.

Palabras clave: Intento de suicidio, adolescentes, medición, factores de riesgo.

INTRODUCTION

The suicide mortality rate in Mexico has exhibited a consistent upward trend. Between 2014 and 2021, the rate rose from 6.09 to 6.84 per 100,000 inhabitants (Institute for Health Metrics and Evaluation [IHME], 2024). Over the past decade, this increase reached 22%, with a higher rise among women (37%) (Borges et al., 2019). Globally, individuals aged 15–29 constitute the most vulnerable group (IHME, 2020; Organización Mundial de la Salud [OMS], 2021; Instituto Nacional de Estadística, Geografía e Informática [INEGI], 2023), with adolescents aged 13–15 showing the highest increase in lifetime suicide attempts (Valdez-Santiago et al., 2021).

The Interpersonal Psychological Theory of Suicide (Joiner, 2005) is a second-generation framework (Yöyen & Keleş, 2024) that seeks to understand why the desire to die is insufficient to predict a suicide attempt. This parsimonious theory has demonstrated empirical support and explanatory power, even when controlling for widely studied factors such as mood disorders, personality traits, or family history, and highlights the importance of interpersonal factors and social context (Chu et al., 2017; Van Orden et al., 2010).

An acquired capability for suicide (ACS) is the belief that he or she is capable of ending his or her own life. Joiner's theory posits that engaging in lethal self-harm requires habituation to fear and pain involved in self-harm (Van Orden et al., 2008; Van Orden et al., 2010; Joiner, 2005).

Thus, ACS is built on two main factors: pain tolerance and fearlessness about death (Van Orden et al., 2008). Its nomological network includes impulsivity, a related condition for its acquisition (Van Orden et al., 2010), and other variables in Joiner's model (2005; Van Orden et al., 2010; Van Orden et al., 2015).

Instruments to measure ACS have been developed and tested in adult Anglo-Saxon populations, but adaptations and testing are needed for other vulnerable populations, like adolescents from diverse cultural contexts. Additionally, many scales fail to fully align with the two dimensions proposed by the theory (Joiner, 2005; Van Orden et al., 2008). Despite their strong psychometric properties, examples include the ACSS-FAD (Acquired Capability for Suicide Scale – Fearlessness about Death; Ribeiro et al., 2014; *SRMR* = .03 - .05, *CFI* = .93 - .99, *TLI* = .90 - .98, *RMSEA* = .04 - .06), the ACWRSS (Acquired Capability with Rehearsal for Suicide Scale; George et al., 2016; $X^2_{(11)} = 17.24$, $p = .10$, RMSEA = .030 (90% *IC* = .000 - .057), *CFI* = .997, *TLI* = .994, $\alpha = .83$), and Rimkeviciene et al.'s proposal (2017; *CMIN* / *df* = 2.98, *RMSEA* = .05, *CFI* = .95; R^2 = 47%). Although Ribeiro et al. (2014) included 10 – 20% of Latin American participants, participants in these scales were predominantly Caucasian Australian adults.

There are other scales available to measure the two proposed factors of ACS, such as the ACSS (Van Orden et al., 2008), the GCSQ (German Capability for Suicide Questionnaire; Wachtel et al., 2015), and an adaptation of the ACSS for the Mexican population (Rangel-Villafaña et al., 2023). The *GCSQ* showed acceptable adjustment indices (*CFI* = .94, *RMSEA* = .09 -*IC* 90% = .07 - 1.1-, *SRMR* = .07, α Fearlessness about death = .90, α Pain tolerance = .77), however, it was evaluated in a Caucasian adult population residing in Germany; while no formal psychometric studies have been done for the ACSS, with only reliability being reported as $\alpha = .84$ in general population. The Mexican adaptation of ACSS (Rangel-Villafaña et al., 2023) was studied with an adult general population, underwent confirmatory factor analyses, and yielded excellent adjustment indices (*RMSEA* = .011, *CFI* = .99, *TLI* = .99, *IFI* = .99, *NFI* = .91, $X^2 = 86.75$, *DF* = 84, $p = .397$; α=.77). Items in Mexican Spanish were carefully chosen to suit the language and cultural context.

The main objective of this study was to obtain the reliability and structural, convergent, and predictive validity, as well as a sensitivity and specificity test of the adapted version of the ACSS (Rangel-Villafaña et al., 2023) in Mexican adolescents. An additional objective was to investigate whether the adapted scale structure is consistent for both clinical and non-clinical adolescent populations.

METHOD

The ACSS (Rangel-Villafaña et al., 2023) was adapted for Mexican adolescents by modifying item wording (DeVellis, 2017 & Furr, 2018) to ensure comprehension. Three expert judges evaluated inter-judge agreement (80% satisfaction) and provided qualitative opinions on content validity through three iterative rounds. Aiken's V coefficient with a desired value of at least .70, Type I Error $p < .05$ (Charter, 2003) and its confidence interval ensuring a lower limit of at least .70 (Merino & Livia, 2009) were computed for content validity (Appendix I).

To achieve the aims of this study, two phases were conducted: Phase I – Confirmatory Factor Analysis and Reliability, and Phase II – Convergent and Predictive Validity; sensitivity and specificity.

Design

Development of psychometric properties of a measurement scale.

Phase I - Confirmatory Factor Analysis and Reliability

Participants

The sample included 429 adolescents (71.3% female) aged

13 to 18 years (M_{age} = 15.9, SD_{age} = 1.2). Two subsamples were recruited: non-clinical (73%) and clinical (27%). Adolescents with adequate comprehension skills, allowing them to understand and complete the items of the scale, were invited to participate.

In the non-clinical group, most participants were female (67.4%) and lived with their nuclear family (81.5%). Additionally, 80.5% of the sample were exclusively students, with 42.8% enrolled in the second semester of high school. In the clinical group, 81.9% were female, most were also exclusively students (78.4%), and 19.1% were in the third year of middle school. The majority lived with their nuclear family (63.8%). Furthermore, 93.8% presented psychiatric comorbidities, with 65.2% having three or four diagnoses, primarily mixed types (internalizing and externalizing disorders, 55.8%).

Settings

Public schools in three cities in Mexico, and the Hospital Psiquiátrico Infantil "Dr. Juan N. Navarro" (HPIJNN).

Measures

Sociodemographic Questionnaire. This consisted of general data about the participants, including their age, occupation, psychiatric diagnosis, living arrangements, and other relevant information.

Acquired Capability for Suicide Scale, version adapted for Mexican adolescents. It consisted of 23 items with six response options intended to measure two factors: Fearlessness about death and Pain tolerance.

Procedure

The scale was administered to 445 adolescents through both face-to-face and online modalities, depending on the conditions arising from the COVID-19 pandemic. Prior to participating, the adolescents and their guardians provided verbal and written assent and consent, respectively.

Bias

The items of the ACSS were randomized in the electronic version, and three printed versions were created with the items in different order.

Statistical analysis

We used IBM SPSS® version 26. Cases with near-zero or extreme standard deviations (≥ 3; Simms et al., 2019) and those with errors on the commitment question were excluded, resulting in a final sample of 429 participants. No cases or items were eliminated due to < 10% missing values. Little's MCAR test (χ^2 = 76.60, p > .05) confirmed randomness, allowing simple imputation using the median of adjacent points (Pardo-Merino & Ruiz-Díaz, 2005).

To analyze the original scale's structure, we used IBM SPSS® AMOS graphics version 26. Items were examined for variance explained (≥ .20; Hooper et al., 2008) and factor loadings (≥ .40; Bandalos & Finney, 2010; Guadagnoli & Velicer, 1988; Hogarty et al., 2005). Items with values below these cutoff points and with high correlated errors were considered for elimination if theoretically justified (Brown, 2015; Pituch & Stevens, 2016; Lloret-Segura et al., 2014). Adjustment indices calculated included Chi-squared/Degrees of freedom (< 3), Comparative Adjustment Index (*CFI* ≥ .95), Mean Square Error of Approximation with 90% confidence (*RMSEA* < .05), and *pClose* (p > .05) (Hu & Bentler, 1999). We maintained those items that made the best contribution to the evaluated model.

If the scale did not meet desirable adjustment indices, items from the item pool constructed during the content validity were added to improve structural validity. This iterative refinement process, along with the specification and respecification of the model, continued until satisfactory fit indices were achieved, without neglecting the individual contributions of each item.

Total scores were calculated for each respondent. Since data were not normally distributed (*K-S* = .067, p < .01), the Mann-Whitney U test compared scores between non-clinical and clinical populations. Post hoc analyses examined power and effect size. Configural, metric, scalar, and strict invariance analyses compared both populations. The better-fitting population served as the base for refining the other. The final versions and their reliability were assessed using Cronbach's α and McDonald's ω, as well as the percentage of explained variance.

Phase II - Convergent and predictive validity; sensitivity and specificity

Participants

The sample included 345 clinical adolescents (73.6% females), aged 13 to 18 years (M_{age} = 15.2, SD_{age} = 1.4). Adolescents with adequate comprehension skills, allowing them to understand and complete the items of the scale, were invited to participate. 46.2% of the sample were hospitalized with an average stay of M = 7.6 days (SD = 6.4), and 53.8% received outpatient care. Most (55.4%) had three or four psychiatric diagnoses, predominantly of a mixed type (internalizing and externalizing; 52.4%). 78% of the sample reported having attempted suicide at least once in their lifetime, with the majority having made five attempts (76%). The average age of onset was M = 12.6 years (SD = 2.3).

Settings

Hospital Psiquiátrico Infantil “Dr. Juan N. Navarro” (HPIJNN).

Measures

Acquired Capability for Suicide Scale for clinical adoles-

cent population (ACSS-AP). A version derived from Phase I of this study.

Interpersonal Needs Questionnaire (Silva et al., 2018). The scale comprises 15 items with seven response options, grouped into two factors: Thwarted belongingness and Perceived burdensomeness. In this sample, nine items demonstrated effective performance: Five for the first factor and four for the second. Psychometric properties for this sample were α = .87 for the overall scale, .93 for Perceived Burdensomeness, and .80 for Thwarted Belongingness; *CMIN/gl* = 1.65, CFI = .993, RMSEA = .041, *pClose* = .73.

Impulsivity Scale (Climent et al., 1989; González-Forteza et al., 1997). Five items that assess the frequency of impulsive traits on a scale ranging from five to 20 points. The reliability was α = .76, and the fit indices were *CMIN/gl* = 2.25, CFI = .98, RMSEA = .056; *pClose* = .347.

Beck Suicide Ideation Scale (Artasánchez-Franco, 1999; Beck & Steer, 1993). Items one, two, three and five measured passive suicidal ideation (Forkmann et al., 2021); their psychometric properties were α = .88; *CMIN/gl* = .325, CFI = 1.000, RMSEA = .000, *pClose* = .880. Items four, six, seven, eight and nine measured active suicidal ideation (Forkmann et al., 2021) with psychometric properties of α = .86; *CMIN/gl* = 1.358, CFI = .999, RMSEA = .030, *pClose* = .60.

Lifetime Suicide Attempts: A dichotomous and continuous variable measured by the questions: *"¿alguna vez te has herido, cortado, intoxicado o hecho daño a propósito con intención de quitarte la vida?" [have you ever purposely hurt, cut, intoxicated, or harmed yourself with intent to take your own life?]* and *"¿cuántas veces te has herido, cortado, intoxicado, o hecho daño a propósito para tratar de quitarte la vida?" [How many times have you intentionally harmed, cut, poisoned, or injured yourself in an attempt to take your own life?]* (CIP-DERS; González-Forteza & Jiménez-Tapia, 2019).

Procedure

Adolescents and their legal guardians who agreed to participate in the study provided their assent and informed consent, respectively. The scales were administered to a total of 396 adolescents; those who were hospitalized received a printed version, while those in outpatient care completed the electronic version.

Statistical analysis

We used IBM SPSS® version 26. Univariate assumptions were checked for each variable in the ACS nomological network using specified psychometric instruments. Outliers for lifetime suicide attempts (identified as z-scores ≥ 3) were removed, resulting in a final sample of 345 adolescents. Multivariate analyses included a predicted vs. residual plot to ensure no outliers affecting the distribution. Both univariate and multivariate analyses assumed normality (skewness and kurtosis ≤ 2; Miles & Shervin, 2011).

The Pearson Product-Moment coefficient was obtained to confirm a positive association between ACS, measured with the proposed scale, and the rest of the constructs as evidence of convergent validity. Predictive validity was assessed using simple linear regression between ACS and lifetime suicide attempts, examining model significance and explained variance. Sensitivity and specificity analyses were conducted using a binomial logistic regression model, with the same dependent variable measured dichotomously. Significance was examined using the Hosmer & Lemeshow test. The overall classification accuracy, the percentages of correctly classified positive and negative cases, and the explained variance percentages were evaluated using Cox and Snell and Nagelkerke indices.

Ethical considerations

This study was conducted following the principles of the Declaration of Helsinki. Recruitment, consent, and data collection procedures were approved by the Research Ethics Committee of the Hospital Psiquiátrico Infantil "Dr. Juan N. Navarro" (HPIJNN), in Mexico (approval number PI3/01/0921).

RESULTS

Phase I - Confirmatory Factor Analysis and reliability

We performed four CFA, one for the original items and factor structure (Version 1), and three for different adapted versions. Version 2 excluded items from the original scale that did not meet minimum factor loadings and explained variances. Version 3 excluded newly created items from the item pool suggested by the expert judges during the scale adaptation period, to observe their behaviour with the rest of the items and their corresponding factor and identify those that were not functioning correctly. Version 4 excluded newly created items that did not meet expected values.

The first part of the Table 1 presents the factor solutions and goodness-of-fit indices for the four versions for comparison.

Given the minimal differences in goodness-of-fit indices between Version 2 and Version 4, and the preference for a parsimonious structure, Version 2 was chosen as the base model for the CFA. This model, shown in Figure 1, will be referred to as ACSS – A.

The Mann-Whitney U test compared the mean ranges of the non-clinical and clinical population for the total ACSS – A score. Results indicated a statistically significant mean difference *(U* = 10985, $p < .001$), with the clinical

Table 1
Goodness of fit indices for different CFA of ACSS and ACSS in clinical population

ACSS				
Index	*Original scale (Version 1) 14 items, two factors*	*Refined version 1 (Version 2) Seven items, two factors*	*Version 2 with newly created items (Version 3) 16 items, two factors*	*Refined version 3 (Version 4) Eight items, two factors*
CMIN/gl	7.692	1.131	7.259	1.148
CFI	.689	.998	.748	.998
RMSEA	.125	.018	.121	.019
pClose	.000	.931	.000	.964
ACSS – clinical population				
Index	*Original scale (Version 1) 14 items, two factors*	*Refined version 1 (Version 2) Seven items, two factors*	*Version 2 with newly created items (Version 3) 13 items, two factors*	*Version 2 with newly created items (Version 3) 13 items, two factors*
CMIN/gl	2.699	1.663	1.195	1.069
CFI	.722	.975	.984	.995
RMSEA	.122	.076	.041	.024
pClose	.000	.212	.638	.753

population (*Mean Range* = 276.80) scoring higher than the non-clinical population (*Mean Range* = 192.10). Post-hoc tests showed a power of $1 - \beta = .99$ and an effect size $d = .72$, indicating a major difference in the clinical population.

The invariance analysis results between the non-clinical and clinical populations are in Table 2. The significant Chi-square difference ($\Delta\chi^2$) indicated a lack of invariance between both populations in metric, scalar, and strict models. In the non-clinical sample, the regression weights of each item were significant, but not in the clinical sample.

Therefore, a new factor structure was needed for the clinical population. The scale's reliability for the non-clinical population was $\alpha = .669$ ($\omega = .71$) for the total scale, $\alpha = .663$ ($\omega = .63$) for Pain Tolerance, and $\alpha = .849$ ($\omega = .86$) for Fearlessness about death, explaining 50.6% of the variance.

The second part of Table 1 displays the goodness-of-fit indices for the original scale and various item-filtered versions for the clinical population. Version 4, which exhibited the best fit indices, was chosen as the final scale for the clinical population (ACSS – AP, Figure 2). This version consisted of 10 items: six for Pain Tolerance and four for Fearlessness about death. The overall reliability was $\alpha = .869$ ($\omega = .87$), with $\alpha = .80$ ($\omega = .81$) for Pain Tolerance and $\alpha = .86$ ($\omega = .86$) for Fearlessness about death, explaining 52.6% of the variance.

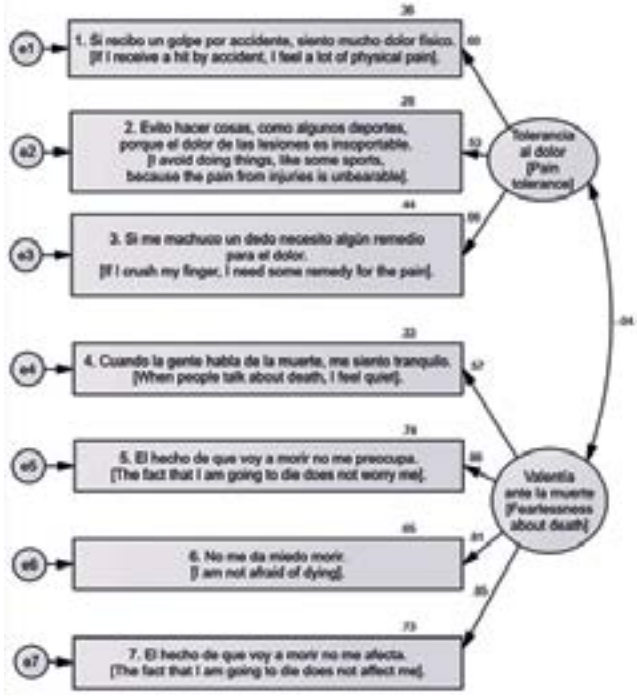

Figure 1. Final Factor Solution for the complete sample of ACSS – A

Phase II – Convergent and predictive validity; sen-

Table 2
Analysis of invariance between the non-clinical and clinical population for ACSS – A

Model	*χ^2 (df)*	*χ^2/df*	*CFI*	*RMSEA (CI 90%)*	*Δ χ^2 (df) p > .05*	*ΔCFI ≤ .01*	*ΔRMSEA ≤ .015*
M1. Configural invariance (Baseline)	32.824 (26)	1.262	.993	025 (.000 - .048)			
M2. Metric or weak invarvance (restricted *λ*)	45.151 (31)	1.456	.985	.033 (.003 - .052)	**12.327 (5), *p* = .031**	-.008	.008
M3. Scalar or strong invariance (*λ* and τ restricted)	66.803 (38)	1.758	.970	.042 (.025 - .059)	**33.979 (12), *p* = .001**	-.015	.009
M4. Strict invariance (*λ*, τ and *θ* restricted)	82.617 (48)	1.721	.964	.041 (.025 - .056)	**49.793 (22), *p* = .001**	-.006	-.001

sitivity and specificity

Table 3 presents the descriptive statistics for each variable in the nomological network of ACS, including overall scales and their factors. The skewness and kurtosis for each variable were approximately 1, appropriate for normal distributions (Miles & Shervin, 2011). Pearson's correlation coefficients indicate statistically significant positive associations between constructs ($p < .01$), except for Thwarted belongingness with lifetime suicide attempts ($p = .102$).

The INQ and ACSS – AP scales exhibit high to very high correlations with their factors ($r > .7$; Cohen, 1988), as theoretically expected. ACSS – AP correlations with other constructs are moderate ($r > .4$; Cohen, 1988), with Thwarted belongingness having the lowest correlation ($r = .3$), although all statistically significant ($p < .01$). High correlations are also observed between INQ and impulsivity, active and passive suicidal ideation, with Perceived burdensomeness predominating over Thwarted belongingness ($r > .6$).

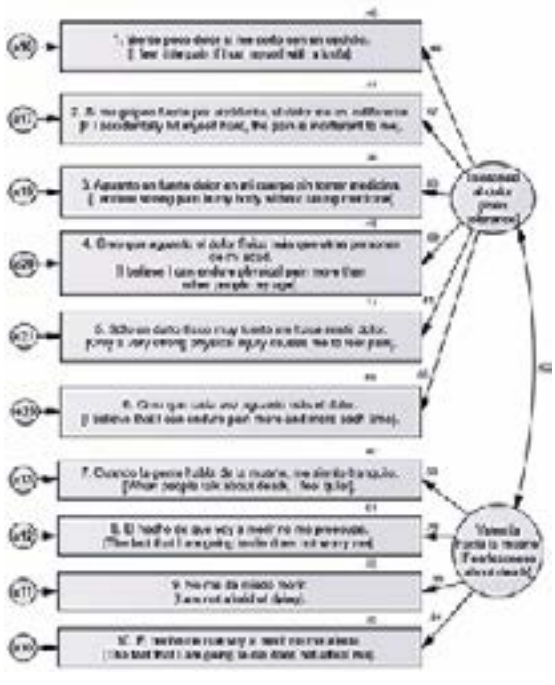

Figure 2. ACSS – AP Final Factor Solution. *Note:* For the Pain Tolerance factor, items one and two are original, and the rest are newly created. For the Fearlessness about death factor, all items are the original ones. All items are scored directly.

Simple linear regression showed ACS significantly predicted lifetime suicide attempts ($\beta = .40$, $t = 8.3$, $p < .001$, 95% *CI* [.091-.15]) in adolescents with psychiatric disorders, explaining 16.4% of the variance ($F_{(1,343)} = 68.44$, $p < .001$).

The binomial logistic regression model was statistically reliable ($X^2 = 49.252$, $DF = 1$, $p = .000$), and the Hosmer & Lemeshow test indicated a good fit to the data ($X^2 = 11.792$, $DF = 8$, $p = .161$). The model explained between $13.3\%_{\text{Cox and Snell}}$ and $20.9\%_{\text{Nagelkerke}}$ of the variance in the occurrence of lifetime suicide attempts among adolescents. The overall correct classification was 80.3%, with the model correctly predicting 96% of cases in which individuals had attempted suicide at least once in their lifetime and 18.6% of those without suicide attempts.

DISCUSSION AND CONCLUSION

This study aimed to establish the psychometric properties of the Acquired Capability for Suicide Scale (Rangel-Villafaña et al., 2023) in Mexican adolescents, exploring its equivalence across clinical and non-clinical populations.

A significant finding was the distinct structuring of Pain Tolerance between these groups. In the non-clinical sample, the items phrased in the same direction as the original scale to measure non-tolerance to pain performed better (e.g., *"Si recibo un golpe por accidente, siento mucho dolor físico" [If I accidentally receive a blow, I feel a lot of physical pain]*), whereas the clinical sample responded more favorably to items assessing pain tolerance, particularly those depicting severe pain exposure situations (e.g., *"Sólo un daño físico muy fuerte me hace sentir dolor" [Only very strong physical harm makes me feel pain]*).

The difference in item phrasing was supported by feed-

Table 3
Descriptive statistics and correlations for all measures for Phase II

Model	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1 Acquired Capability for Suicide Scale	1									
2 Pain tolerance	.913**	1								
3 Fearlessness about death	.850**	.561**	1							
4 Interpersonal Needs	.507**	.461**	.432**	1						
5 Thwarted belongingness	.263**	.203**	.271**	.771**	1					
6 Perceived burdensomeness	.542**	.520**	.428**	.887**	.389**	1				
7 Impulsivity	.459**	.410**	.402**	.660**	.390**	.671**	1			
8 Passive suicidal ideation	.562**	.479**	.521**	.746**	.498**	.718**	.771**	1		
9 Active suicidal ideation	.514**	.451**	.460**	.714**	.428**	.722**	.888**	.856**	1	
10 Lifetime suicide attempts	.408**	.397**	.315**	.281**	.102	.333**	.346**	.275**	.327**	1
Minimum value	0	0	0	9	4	5	0	0	0	0
Maximum value	50	30	20	63	28	35	2	8	10	18
Mean	25.7	13.9	11.9	30.2	14.5	15.7	.54	2.7	2.3	4
Standard Deviation	13.1	8.4	6.5	14.6	7.3	10.09	.73	2.5	2.9	3.9
Skewness	-.2	-.03	-.4	.33	.09	.6	.98	.6	1.03	1.3
Kurtosis	-.95	-1.04	-1.14	-.8	-1.09	-1.05	-.5	-.81	-.2	1.7

Note: Acquired Capability for Suicide Scale – psychiatric adolescent version. ** Correlation is significant at the .01 level (two-tailed).

back from clinical respondents, who normalized situations involving minor injuries or continuing physical activities despite pain. This suggests lower sensitivity to minor pain in they, likely due to their increased exposure to intense pain situations such as self-inflicted burns or suicide attempts (Van Orden et al., 2008; Van Orden et al., 2010), resulting in a larger effect size, highlighting the need for tailored item formulation. It is important to note that measuring pain tolerance through self-report can be complex as it is subjective and influenced by perception biases; objective measures are suggested as a more reliable method, such as electrical stimulation, the cold pressor task, thermal stimulators, or mechanical pressure devices. Among these, electrical stimulation has demonstrated greater objectivity, reliability, and patient-friendliness in assessing pain (Edwards & Fillingim, 2007; Wachtel et al., 2015; Wagemakers et al., 2019).

Two items performed poorly in both samples: *"Evito participar en peleas porque no soporto el dolor fisico que generan" [I avoid getting into fights because I can't stand the physical pain they generate]*, where adolescents noted reasons other than pain for avoiding fights, and *"Necesito tomar medicamentos para quitar algún dolor fisico" ["I need to take medication to relieve any physical pain"]*, which was redundant with item three (Figure 1) and thus eliminated.

Regarding Fearlessness about death, the items that performed well were consistent across both non-clinical and clinical populations, indicating a stable manifestation of the construct. These items assessed emotions related to death, such as fear or worry. Two removed items focused on the act of dying rather than the associated emotions, (e.g., *"Podría matarme a mí mismo si quisiera" ["I could kill myself if I wanted to"]*. Although this item could theoretically be considered highly relevant to the construct, its performance within the overall model was suboptimal, likely because the other items were measuring emotions related to death rather than the act of dying itself. According to Hinkin (1995), at least three items are needed for them to cluster together. Probably including more items related to the act of dying might group them into another factor (Rimkeviciene et al., 2017), potentially forming a subdimension or a more precise measure. In the German version (Wachtel et al., 2015), this item did not contribute to Fearlessness about death but was retained as a single item for ACS. Ribeiro et al. (2014) suggested that items assessing Fearlessness about one's own death, rather than death in general, may better capture the construct.

Furthermore, several items that did not effectively measure Fearlessness about death were removed due to their focus on other constructs. E.g., *"Imaginar mi muerte no me asusta" [Imagining my death does not scare me]* primarily reflects suicidal ideation, while *"El miedo a morir me inquieta" [The fear of dying worries me]* is worded in reverse and is not aligned with the other items. *"Me asusta el dolor asociado a morir" [I'm scared of the pain associated with dying]* primarily assesses pain related to death.

It is also important to consider the cultural context in

Mexico, where death is celebrated during *Día de los Muertos*, viewed traditionally with humor and satire. Consequently, the concept of death may not evoke fear among Mexicans. Therefore, items like *"La posibilidad de morir me causa ansiedad" [The possibility of dying causes me anxiety]* or *"Pensar en mi propia muerte me causa curiosidad" [Thinking about my own death causes me curiosity]* were not effective in either sample. The latter item also overlaps closely with suicidal ideation. This leads to the need to consider cultural influences in specific populations in order to determine the functioning of items intended to assess the construct.

It is worth mentioning that, in addition to the theoretical inconsistencies identified through the qualitative analysis of the eliminated items, these items did not exhibit statistically satisfactory performance. Consequently, their contribution to the total variance of the model was minimal or even detrimental, which justified their removal.

The reliability of both the full scale and Pain Tolerance scale was lower in the non-clinical sample. This suggests that the scale may lack sensitivity in detecting ACS in adolescents without significant suicidal behavior or with lower levels of it (Rogers et al., 2021). In contrast, adolescents with psychiatric disorders who often experience more severe and frequent pain, showed higher reliability for the scale and this factor (Van Orden et al., 2008; Van Orden et al., 2010). Fearlessness about death exhibited greater stability across both populations, with higher reliability.

The ACSS – AP scale demonstrated a positive and moderately strong relationship (Cohen, 1988) with theoretically expected constructs (Van Orden et al., 2008; Van Orden et al., 2010; Van Orden et al., 2015), indicating convergent validity. Thwarted belongingness and perceived burdensomeness showed statistically significant moderate associations, consistent with findings in clinical adolescent samples (King et al., 2019; Horton et al., 2015). Surprisingly, the correlation between ACS and lifetime suicide attempts was higher than previously reported (r = .09, p = .027; Chu et al., 2017); however, it is crucial to note that only four studies included adolescents in this meta-analysis.

Impulsivity is identified as a contributing factor to the ACS (Van Orden et al., 2010), although Bender et al. (2011) and Witte et al. (2008), suggest it does not directly relate to ACS. Instead, impulsive individuals may encounter more painful and provocative events (PPEs), facilitating capability acquisition. This study found a direct, significant and moderate correlation between impulsivity and ACS (Cohen, 1988). However, this does not imply causation, and further exploration through mediation models involving PPEs is warranted to better elucidate their relationship.

Regarding suicidal ideation, studies generally do not differentiate between passive and active ideation when evaluating the IPTS model (Baertschi et al., 2017). Nonetheless, the results reported here align with those for general suicidal ideation in adolescents (Horton et al., 2015; King et al., 2019).

Joiner (2005) proposes that the ACS becomes significant when interacting with thwarted belongingness and perceived burdensomeness (Van Orden et al., 2008, 2010). While research indicates variability in its direct prediction of suicide attempts (Chu et al., 2017), the theory emphasizes ACS as a predictor of future, rather than past attempts. This study, which examines past attempts, serves as a proxy measure aligned with theoretical propositions.

This study found a direct contribution to variance of 16.4%, consistent with satisfactory results reported in 40% of cross-sectional studies included in Chu et al.'s meta-analysis (2017), and other studies with clinical adolescent samples (Horton et al., 2015; Czyz et al., 2014). While the explained variance is small, it is important to consider other factors established by the theory in prediction that were not included in the linear regression model (e. g. three-way interaction between thwarted belongingness, perceived burdensomeness and acquired capability for suicide; Joiner et al., 2009). Consequently, the explained variance should not be viewed in isolation but rather as a reflection of the instrument's contribution within a broader explanatory framework. Moreover, predicting future attempts requires conducting a longitudinal study, which can be considered a potential line of future research.

Regarding the sensitivity and specificity test, while a considerable correct classification rate was obtained (80.3%), particularly with a high sensitivity rate (96%), it is important to note that the analysis was conducted using the occurrence of suicide attempts among adolescents as the dependent variable. This variable serves as a proxy, given the absence of a gold standard for comparative evaluation of the instrument. An analysis using ROC curves would be highly recommended if such a criterion were available.

This study has other limitations, one of them is the absence of evidence regarding divergent and discriminant validity. Future research should incorporate additional scales that are part of the nomological network of ACS to confirm that the scale exclusively measures the construct of interest.

Additionally, in the Fearlessness about death factor, items assessing emotions related to death were included, while those addressing the act of dying were excluded. To mitigate this limitation, we recommend including more items that focus on the act of dying itself, aligning with suggestions from prior research (Wachtel et al., 2015; Ribeiro et al., 2014; Rimkeviciene et al., 2017).

It is also important to note that in Phase I, the sample was limited to students, which means that the representativeness of adolescents in the study may be affected by the exclusion of those without access to education. Similarly, in both phases, a high percentage of participants were women, and specifically in Phase II, participants were exclusively recruited from a psychiatric hospital. The higher prev-

alence of women aligns with the current epidemiology of suicide-related behavior (Borges et al., 2019). However, the representativeness of the population and the generalizability of the findings are limited to contexts where the severity of the phenomenon is higher, excluding community samples or those in primary care settings.

Despite these limitations, this study provides a valuable contribution by proposing a valid and reliable scale for measuring ACS in Mexican adolescents, particularly in psychiatric and high-risk populations, which has not been previously documented in the literature. Given the sustained increase in suicide attempts among adolescents in Mexico, and the urgent need to implement actions to reduce these figures, this tool presents itself as a valuable resource to, initially, begin gathering evidence on the functioning of the IPTS in this population (Stewart et al., 2015). If explanatory models of suicide attempts are developed with a robust level of evidence, public resources could be directed towards targeted therapeutic interventions, thus achieving greater effectiveness for those in need.

Finally, according to invariance analysis, this study provides evidence for the non-generalization of the scale tested in the general population. Therefore, understanding the phenomenon should differentiate between those with a history of lifetime suicide attempts and those without, and the tools should be specific to each subgroup.

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Conflict of interests

The authors declare they have no financial interests.

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APPENDIX

Adaptation of the ACSS (Rangel-Villafaña et al., 2023) for Mexican adolescents.

In the first instance, an adaptation procedure was carried out on the items that make up the scale with the aim of making them easily understandable for adolescents.

Evidence of content validity was obtained from the judgment of experts, who evaluated two aspects: a) the relevance of each of the items, in terms of its congruence with its theoretical meaning, and b) the coverage of the dimension evaluated, ensuring that it was made up of necessary and sufficient items.

Method

Participants

To gather expert opinions, 21 professionals with experience in adolescent psychology or education and the construction of psychometric instruments were recruited as judges, in three different and iterative rounds. Additionally, 18 adolescents aged 13 to 18 were recruited to participate in the study: Ten of them from public schools were involved in cognitive laboratories, while eight adolescents from the Hospital Psiquiátrico Infantil "Dr. Juan N. Navarro" were recruited to pilot the scale.

Measure

Acquired Capability for Suicide Scale for adult Mexican population (Rangel-Villafaña et al., 2023) comprises 14 items with five response options, grouped into two factors: Fearlessness about death and Pain tolerance. The scale showed excellent adjustment indices for the Mexican university population, with RMSEA = .011, CFI = .99, TLI = .99, IFI = .99, NFI = .91, X^2 = 86.75, *gl* = 84, and *p* = .39, and explained 58% of the variance.

Procedure

The phrasing of the items on the ACSS was evaluated based on criteria outlined by DeVellis (2017) and Furr (2018), considering language, length, grammatical simplicity, precision of terms, double negations, and directionality. Modifications were made to ensure comprehension by the adolescent population. The response options were adjusted from five to six points to eliminate the neutral response option, aiming to increase the accuracy, reliability, and discriminative capacity of the scale (Calleja et al., 2019; Grande & Abascal, 2017; Simms et al., 2019).

A first version of the scale was obtained by submitting it to three expert judges in three iterative rounds to evaluate the inter-judge agreement and provide their qualitative opinions on content validity.

An online cognitive laboratory was conducted with a group of adolescents to evaluate the understanding of the items. The strategy used the concurrent, group, and scrutiny method (Nolin & Chandler, 1996). The participants and their legal guardians provided verbal and written consent and assent, respectively, prior to participating. Based on the participants' feedback, the items were reformulated to produce a second version of the scale. This version included a commitment question to detect cases of random answers (Fonseca-Pedrero et al., 2009). Eight additional adolescents evaluated the design, instructions, and response options of the scale (Streiner et al., 2015), leading to the final print and electronic versions.

Data analytic strategy

A scale ranging from 0 to 14 points was utilized to assess each item (Furr, 2018; DeVellis, 2017). Those items that scored less than 14 points were identified for modification. Inter-judge reliability was calculated for each expert round, with a criterion of 80% satisfaction. The first round evaluated (a) the clarity of the wording, (b) the theoretical consistency with the defined dimension, and (c) the logical relationship between the items and the dimension. The second and third rounds focused solely on the understanding of the items by adolescents (Argimon-Pallás & Jiménez-Villa, 2013).

To establish content validity, the relevance of each item and its coverage of the underlying dimension were evaluated using a 5-point Likert scale. Aiken's V coefficient was calculated, with a desired value of at least .70 and Type I Error $p <$ .05 (Charter, 2003). The confidence interval for Aiken's V was also computed, with a lower limit of at least .70 (Merino & Livia, 2009). Whenever an item scored less than 5 points, expert judges were asked to provide suggestions for modifying

the wording. These proposals were then discussed with the research team.

Results

The qualitative evaluation of the items revealed that eight out of the original 14 items required adjustments (57.14%). The results of inter-judge agreements for each of the expert rounds are presented in **Table S1.**

Table S1
Percentage of items that reached an 80% inter-judge agreement

		Pain tolerance (Items in agreement/total)	*Fearlessness about death (Items in agreement/total)*
Round 1	Clarity	**57.14%** (4/7)	**42.85%** (3/7)
	Theoretical maintenance	**71.4%** (5/7)	100% (7/7)
	Logic	100% (7/7)	100% (7/7)
Round 2	Understanding	**61.53%** (8/13)	100% (7/7)
Round 3	Understanding	100% (8/8)	**67%** (4/6)

Note: Percentages that did not reach an 80% agreement are highlighted in bold. The Fearlessness about death factor did not reach an 80% inter-judge agreement in the third round. This outcome occurred because two of the items evaluated still posed challenges in understanding for adolescents, as noted by the experts. A consecutive increase from round to round was not anticipated, as the evaluations focused solely on items that proved difficult for adolescents to comprehend.

In the first round, the clarity of the wording for both factors was insufficient (inter-judge agreement < 80%), and there were issues with maintaining the theoretical concept of Pain Tolerance. Consequently, they suggested the inclusion of new items to cover the domain of this dimension (DeVellis, 2017), resulting in 13 items for the second group of experts. However, according to the second group of experts, adolescents still had difficulties in comprehending the factor, and therefore, they requested the inclusion of new items to improve the clarity of the scale. For the third round, only newly created and problematic items from the previous rounds (eight for Pain Tolerance and six for Fearlessness about death) were evaluated, so a consecutive improvement in the inter-judge agreement compared to the previous round was not expected. The understanding was better for the first factor, but for the second factor, two items were still not understandable, so the criterion of 80% agreement was not reached. These items were further discussed, and a consensus reached by the research team, and then asked to adolescents for their opinions in the cognitive laboratories. The relevance of the items and coverage of the dimensions for the three rounds of judges to ensure content validity are shown in **Table S2**. The table indicates that the

Table S2
Aiken's V and Lower Limit of CI for item Relevance and Coverage of ACSS dimensions

		Pain tolerance	*Fearlessness about death*
Round 1	R- Aiken's V (Items/total)	85.7% (6/7)	100% (7/7)
	C- Aiken's V (LL CI)	.75 (.40)	1 (.67)
Round 2	R- Aiken's V (Items/total)	92.3% (12/13)	85.7% (6/7)
	C- Aiken's V (LL CI)	.94 (.83)	.90 (.77)
Round 3	R- Aiken's V (Item/total)	100% (8/8)	100% (6/6)
	C- Aiken's V (LL CI)	.8 (.83)	.8 (.83)

Note: R refers to the relevance of each item that makes up the dimension. The number of items that reached an inter-judge agreement of 80% is expressed in percentage. In parentheses, the number of items that obtained it (numerator) is expressed in comparison with the total of items evaluated (denominator). C corresponds to the coverage of the dimension by the items and in parentheses, the Lower Limit of the Confidence Interval (LL CI) is expressed for Aiken's V.

relevance of the items achieved the minimum agreement of 80% (Aiken's V ≥. 70 for each item). For the coverage of each dimension, the value of Aiken's V also met the satisfactory criterion (≥. 70). Because the items evaluated in each round were only those that the judges considered to be poorly understood, no consecutive round-to-round increase was expected for item relevance and dimension coverage.

Although the Lower Limit of the Confidence Interval (LL CI) was below .70 for the first round, it was because only two judges evaluated it, and the calculation is sensitive to the number of participating judges. In the end, both Aiken's V and LL IC met the expected cut-off point, resulting in content validity with a 23-item version.

Regarding the cognitive laboratories, the adolescents provided feedback suggesting simplifying the wording of some items. However, not all suggestions were incorporated as they were related to other theoretical dimensions.

Table S3 presents the minimum and maximum values of the descriptive statistics for the items, along with the percentage of items that fall outside the acceptable range (considering 23 items as a total).

Table S3
Descriptive statistics of items

	$\bar{x}$	*SD*	*Answer options*	*High freq. opt.*	*Floor/ Ceiling*	*Skewness / Kurtosis*	*Inter-item corr.*	*Item-Total corr.*	*Extr. group discrim.*
Rank	1.45 - 4.19	1.24 -1.85	0 - 5				-.15 - .75		
Proportion of items out of acceptable range	39.1%	21.7%	0%	8%	8% / 21.7%	8% / 60.8%		0%	4%

Note: $\bar{x}$ = Mean; *SD* = Standard Deviation; High freq. opt. = High frequent options; Inter-item corr. = Inter – item correlation; Item-total corr. = Item – total correlation; Extr. group discrim. = Extreme group discrimination.

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The Other as Shamer Scale: Validation of an Instrument to Assess External Shame

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ABSTRACT

Introduction. The Other as Shamer Scale (OAS) is often used to measure external shame, which has been associated with various psychosocial problems. **Objective.** To evaluate the psychometric properties of the OAS in a general population sample and a sample of the population with symptoms linked to Complex Posttraumatic Stress Disorder (C-PTSD). **Method.** Three hundred and forty-one participants completed the OAS and the International Trauma Questionnaire (ITQ). Confirmatory factor analysis (CFA) was performed to obtain evidence on the construct validity of the scale. **Results.** The tested model was found to have an adequate fit, as well as adequate concurrent and discriminative validity in relation to the ITQ scores. **Discussion and conclusion.** The results suggest that the OAS is a valid, reliable instrument for measuring external shame and discriminating between those with and without posttraumatic symptoms.

Keywords: External shame, complex trauma, PTSD, psychometric analyses, psychopathology, ITQ.

RESUMEN

Introducción. La vergüenza externa se ha vinculado a problemáticas psicosociales diversas y la escala de los otros como generadores de vergüenza (OAS) es un instrumento frecuentemente utilizado para medir este constructo. **Objetivo.** Evaluar las propiedades psicométricas de la OAS en una muestra de población general y una muestra de población con síntomas asociados al Trastorno de Estrés Postraumático Complejo (TEPT-C). **Método.** 341 participantes respondieron la OAS y el Cuestionario Internacional de Trauma (ITQ). Para obtener evidencia sobre la validez de constructo de la escala, se realizó un análisis factorial confirmatorio (AFC). **Resultados.** Se encontró un ajuste adecuado del modelo, así como una validez concurrente y discriminativa adecuada en relación con los puntajes del ITQ. **Discusión y conclusión.** Los resultados sugieren que el OAS es un instrumento válido y confiable para medir vergüenza externa y discriminar entre personas con y sin sintomatología postraumática.

Palabras clave: Vergüenza externa, trauma complejo, TEPT, análisis psicométricos, psicopatología, ITQ.

INTRODUCTION

Although there is no clear consensus over the definition of shame, it is commonly described as a self-conscious, aversive emotion related to negative self-evaluation and a desire to escape or hide from certain experiences (Tangney & Dearing, 2002). Gilbert (1998) describes it as the experience of being in the world as an undesirable self with lower social value. From an evolutionary perspective, it has been posited that shame serves a survival function within a social context of interdependence, where it constitutes a response to a social threat to prevent rejection and exclusion (Fessler, 2004; Gilbert, 2007). In addition, a distinction is made between internal and external shame: internal shame refers to negative self-perception, whereas external shame is related to the social world and the way an individual assumes they exist in the minds of others, with the belief that others perceive them negatively (Gilbert, 2007; Matos & Pinto-Gouveia, 2010).

Gilbert (2022) notes that shame is the most common transdiagnosis phenomenon and may be the most difficult to manage. Its impact on the psychotherapeutic process is evident because people with high levels of shame assume that by disclosing information, they will be evaluated negatively by others, including therapists, which is why they may not go to psychotherapy or omit information relevant to the process (DeLong & Kahn, 2014; Griffin et al., 2022; McElvaney et al., 2022).

External shame has also been associated with various disorders, such as depression (Matos et al., 2013; Nikolić et al., 2022), anxiety (Cândea & Szentagotai-Tătar, 2018), posttraumatic stress disorder (Cunningham et al., 2018), dissociative disorder (Dorahy et al., 2017), psychosis (Brand et al., 2022; Martins et al., 2020), and borderline personality disorder (Göttlich et al., 2020; Rüsch et al., 2007).

Shame plays a key role in complex posttraumatic stress disorder (*C-PTSD*). The most recent version of the International Classification of Diseases (ICD-11; World Health Organization, 2019), distinguishes between PTSD and C-PTSD.

PTSD requires the presence of three symptoms constituting the PTSD cluster: re-experiencing, avoidance, and a sense of current threat. A C-PTSD diagnosis requires the presence of the cluster symptoms of PTSD, together with three additional symptoms comprising the disturbances in self-organization (*DSO*) cluster: affective dysregulation, negative self-concept, and alterations in relationships. This distinction has been widely validated, and it has been posited that one of the main differences between these disorders is that C-PTSD can be conceptualized as a shame disorder (Salter & Hall, 2022) and that shame plays a moderating role between the traumatic experience and the symptoms associated with C-PTSD (Rushforth et al., 2022).

Scales have been developed to evaluate external shame because of its association with various disorders and its impact on the psychotherapeutic process. One of the most widely used instruments is the Other as Shamer Scale (*OAS*), (Goss et al., 1994) an adaptation of the Internalized Shame Scale (ISS) (Cook, 1987). In the original study conducted of a sample of British students, three factors were identified: 1) being seen as inferior, 2) emptiness and 3) how others behave when they see me make mistakes. Being seen as inferior explained the highest proportion of the variance, while emptiness had the greatest association with psychopathology. This factorial solution showed adequate psychometric properties, as a result of which the scale has been used in various studies (see for example Castilho et al., 2017). However, despite the identification of these three factors, it is common for the instrument to be scored using a global score that combines the three factors into one (see for example Carter et al., 2021).

There is now a brief version of the OAS developed by Matos et al. (2015), and both the original and the abbreviated scales have been translated into several languages. Balsamo et al. (2015) evaluated the original version in 687 Italian students, finding that a hierarchical model with three first-order factors provided the most adequate fit. Likewise, they found that the emptiness factor was associated with depression. Hiramatsu et al. (2020) evaluated this same version in 199 Japanese students using item response theory (*IRT*), concluding that the instrument adequately discriminates between groups with high and low levels of shame.

The OAS-2, the shortened version developed by Matos et al. (2015) containing eight of the 18 items in the original version, was evaluated in Portugal with 312 students and 378 participants from the general population. This version was organized into a single factor and showed similar fit and reliability indices to those for the original version. These results were replicated in later studies, such as those by Saggino et al. (2017) with Italian students, Satici and Deniz (2020) with Turkish students, Gull et al. (2022) in Pakistan with the general population and Vagos et al. (2016) for the adolescent version.

Matos et al. (2015) note that the OAS-2 is an efficient, economical instrument of great use in research. However, it loses some of the information associated with the three factors in the original version, which could be useful in clinical practice. Understanding these factors can enhance the therapeutic process by identifying the impact of shame on various populations, making it possible to tailor interventions more effectively. Taking this into account and considering that most of the previous research was conducted with students, we decided to evaluate the original version by comparing the responses provided by a general population sample and a sample of the population with symptoms associated with PTSD, Disturbances in Self-Organization (*DSO*), and C-PTSD.

METHOD

Participants and Procedure

Convenience sampling was used to recruit 341 Mexican participants, who were asked to complete an online survey on the LimeSurvey platform from November to December 2021. The characteristics of participants are shown in Table 1.

Although no personal information was collected, all participants provided their informed consent in the consent section on the first page of the survey and were informed that they could drop out whenever they wished. In addition, the principal investigator's contact email was provided in case they wished to obtain more detailed information on the study. Sociodemographic data were requested on the second page, after which the OAS and the International Trauma Questionnaire were presented sequentially.

Based on the results, four groups were identified: (1) C-PTSD, comprising individuals who met the diagnostic criteria for both the PTSD and DSO clusters; (2) PTSD, including individuals who met the criteria for PTSD but not for DSO; (3) DSO, consisting of individuals who met the criteria for the DSO cluster but not for PTSD; and (4) No Diagnosis, referring to individuals who did not meet the criteria for either PTSD or DSO.

Instruments

The Others as Shamer (OAS) (Goss et al., 1994) is a self-report scale with 18 items assessing the shame derived from how people believe others see them. A 5-point scale is used to collect responses (ranging from 0 = *"Never"* to 4 = *"Almost always"*). The scale comprises three factors: 1) being seen as inferior ("I feel other people see me as not good enough"), 2) emptiness ("Others see me as fragile") and 3) how others behave when they see me make mistakes ("Others are critical or punishing when I make a mistake"). The sum of all the items serves as the final score, which ranges from 0 to 72; the higher the score, the greater the external shame. In the original study conducted of a sample of students from two universities, the scale showed adequate internal consistency ($\alpha = .92$). The Latin American translation provided by the author was used.

International Trauma Questionnaire (*ITQ*) (Cloitre et al., 2018). The ITQ is a 12-item, self-report scale used to evaluate PTSD and C-PTSD based on the ICD-11 criteria. Participants indicate how much each of their central symptoms has bothered them in the last month, considering their most traumatic event, using a typical five-point scale ranging from *"not at all"* (0) to *"extremely"* (4).

Table 1
Sociodemographic Characteristics of Participants

Variable	*No diag. (%) n = 126*	*PTSD (%) n = 22*	*DSO (%) n = 76*	*C-PTSD (%) n = 117*	*Total (%)*
Sex					
Female	86 (68.25)	18 (81.81)	55 (72.37)	85 (72.65)	244 (71.55)
Male	40 (31.75)	4 (18.18)	20 (26.31)	30 (25.64)	94 (27.56)
I prefer not to say	0	0	1 (1.31)	2 (1.71)	3 (.87)
Age					
M (*SD*)	47.37 (11.18)	41.91 (13.92)	42.18 (11.44)	39.33 (12.11)	43.11 (12.19)
Range	18-65	18-62	19-63	18-64	18-65
Educational Attainment					
Basic education	12 (9.84)	2(9.09)	6 (8)	9 (7.82)	29 (8.6)
Secondary education	30 (24.6)	4(18.18)	25 (33.33)	49 (42.61)	108 (32.3)
Higher education	57 (46.72)	14(63.63)	39 (52)	50 (43.48)	160 (47.9)
University education	23 (18.85)	2(9.09)	5 (6.66)	7 (6.09)	37 (11)
Marital status					
Single	36 (28.8)	8 (36.36)	30 (40)	41 (36.6)	115 (34.43)
Married	44 (35.2)	8 (36.36)	17 (22.66)	19 (16.97)	88 (26.34)
Divorced	12 (9.6)	1 (4.54)	5 (6.66)	14 (12.5)	32 (9.58)
Living together	19 (15.2)	3 (13.63)	9 (12)	22 (19.64)	53 (15.86)
Separated	11 (8.8)	2 (9.09)	12 (16)	13 (11.61)	38 (11.37)
Widowed	3 (2.4)	0	2 (2.66)	3 (2.68)	8 (2.39)

Note: N = 341

Three items are used to evaluate each of the PTSD symptoms: re-experiencing ("Do you have upsetting dreams that replay part of the experience or are clearly related to the experience?"), avoidance ("Do you avoid internal reminders of the experience?") and sense of current threat ("Are you "hyper-alert," watchful, or on guard?").

Three statements are used to evaluate the symptoms of disturbances in self-organization (*DSO*): affective dysregulation ("When I am upset, it takes me a long time to calm down"), negative self-concept ("I feel like a failure"), and alterations in relationships ("I feel distant or cut off from people"). Positivity for symptoms requires a score of ≥ 2 ("moderately") for at least one of the items for each of the symptoms and a score of ≥ 2 for at least one of the three items for functional impairment due to PTSD and DSO ("In the past month, have the above problems affected your relationships or social life?").

Both PTSD and DSO criteria must be met for a C-PTSD diagnosis. For a PTSD diagnosis, PTSD symptoms must be present, with no DSO symptoms. It is therefore possible to have a PTSD or a C-PTSD diagnosis but not both. Although the scale offers a categorical main result, a score can be calculated for each of the PTSD and DSO clusters by adding the items in each subscale.

The Latin American translation provided by the author was used.

Statistical Analysis

Confirmatory factor analysis (*CFA*) was performed with the total sample to obtain evidence of the construct validity of the scale. The fit of the models was evaluated from the adjusted chi-square (χ^2), the Tucker–Lewis Index (*TLI*), the Comparative Fit Index (*CFI*), the Root Mean Square Error of Approximation (*RMSEA*) and the standardized root mean square residual (*SRMR*). An absolute fit between the observed and expected covariance matrix is considered when χ^2 $p < .05$, χ^2 / $df \leq 2$, TLI ≥ .95, CFI ≥ .97, SRMR ≤ .05 and RMSEA ≤ .05, and an acceptable fit is considered when χ^2 $p < .05$, $\chi^2/df \leq 3$, TLI ≥ .90, CFI ≥ .95, SRMR ≤ .10 and RMSEA ≤ .08 (Browne & Cudeck, 1992; Hu & Bentler, 1998; Schermelleh-Engel et al., 2003; Tucker & Lewis, 1973). McDonald's Omega was used to evaluate the internal consistency of the factors as well as the full scale, given the ordinal nature of the items, where values ≥ .80 reflect adequate internal consistency (Cicchetti, 1994).

Finally, the ITQ was used to evaluate discriminant validity. One-way analysis of variance (*ANOVA*) was performed to analyze the differences in OAS scores between the ITQ-derived groups (no diagnosis, PTSD, DSO, and C-PTSD). Tukey's post hoc test was subsequently used to compare the shame scores for the four groups. The Pearson correlation coefficient was also calculated between the subscales of the OAS and the subscales of the ITQ. Data analysis was performed using RStudio Version 1.4.1717C.

Ethical Considerations

This study was approved by the Ethics Committee of the Department of Psychology of the Universidad Iberoamericana with registration number 2022-02-005 in the 2022-2 ordinary session, held on April 28, 2022.

Participants whose results on the ITQ were consistent with PTSD, DSO, or C-PTSD were invited to participate in a second phase of the study, during which they could either receive treatment or be referred to mental health institutions in their area, as they wished.

RESULTS

Before performing CFA, a descriptive analysis of the items comprising the OAS was performed. The results confirmed that the 18 questions have a normal univariate distribution, while the bias and kurtosis were well below the cutoff points that would suggest a need to transform the data (Kim, 2013). In the corrected item-total correlation, since the lowest value corresponded to the OAS item 15 ($r_{it}^c = .64$) and the highest to the OAS item 08 ($r_{it}^c = .86$), none of the items were eliminated. The Mardia coefficients were significant ($M_{Kurt} = 23.33$, $p < .001$; $M_{skew} = 2146.26$, $p < .001$), suggesting that the data did not follow a normal multivariate distribution. Given the above and the fact that the items corresponded to an ordinal measurement level, it was decided that diagonally weighted least squares (*DWLS*) was the most appropriate estimator (Li, 2021; Shi & Maydeu-Olivares, 2020).

Two models were evaluated, with Model 1 being derived from the original study (Goss et al., 1994). This model comprised three factors: being seen as inferior (Items 1, 2, 4, 5, 6, 7 and 8), emptiness (Items 15, 16, 17 and 18) and how others behave when they see me make mistakes (3, 9, 11, 12, 13 and 14). Model 2 was composed of a single factor comprising all the items, since the total score was used to evaluate the scale (Hiramatsu et al., 2020).

Table 2 shows the fit indices for the models. Model 1 (Figure 1) presented an adequate fit, whereas the adjusted χ^2 criteria and the RMSEA were not met for Model 2.

Table 2
Adjustment Indices for Confirmatory Factor Analysis

Model	*χ² (df)*	*χ² / df*	*TLI*	*CFI*	*SRMR*	*RMSEA*
1	211.52(116)*	1.82	.999	.999	.036	.051
2	483.35(135)*	3.58	.996	.996	**.052**	.090

Note: N = 341. CFI = comparative fit index; TLI = Tucker–Lewis Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation
* $p < .001$

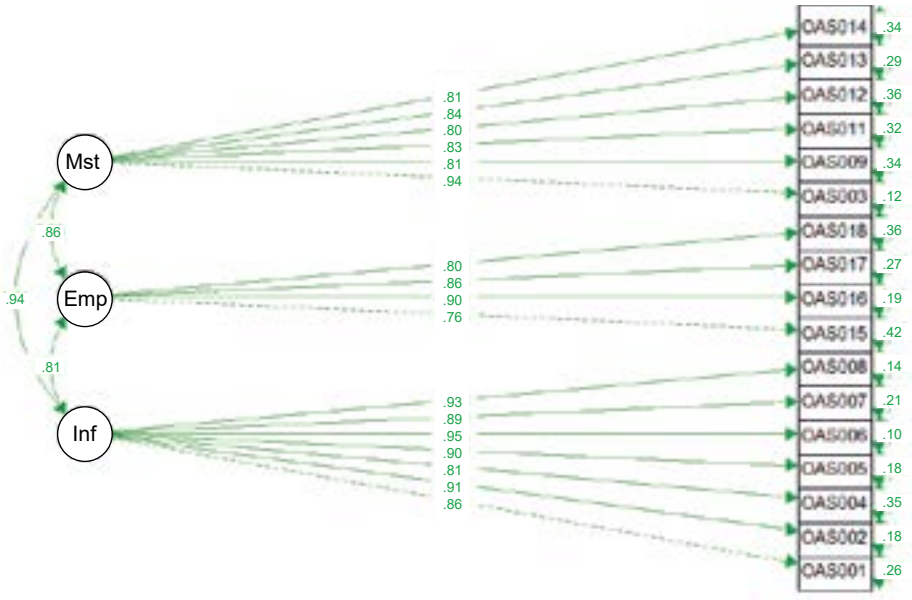

Figure 1. Items, Factor Loadings and Latent Factors
Note: Mst = Mistakes, Emp = Emptiness, Inf = Inferiority

Since CFA was conducted with the total sample, which included participants with and without clinical post-traumatic symptoms, invariance testing was performed between the group with clinical symptoms and the general population group. Model 1 achieved configural invariance, showing that the constructs measured by the OAS can be quantified using the same items across both samples.

After this level of psychometric equivalence had been established, factor loadings were constrained. A comparison of the fit indices of the constrained model with the configural model revealed no significant loss of fit, suggesting evidence of metric invariance between the samples ($\Delta\chi^2$ (14) = 22.59, p = .07).

The next step involved constraining item intercepts between the samples. In this case, a significant loss of fit was observed ($\Delta\chi^2$ (14) = 26.82, p = .02), indicating that this configuration of the OAS does not achieve scalar invariance. This result is due to the differences in symptom levels between the samples.

Internal Consistency

Total internal consistency was ω = .96 (95% CI = .96 - .97). For being seen as inferior, ω = .95 (95% CI = .94-.96), for emptiness, ω = .87 (95% CI = .85-.89), and for making mistakes, ω = .91 (95% CI = .90-.93).

Discriminant Validity

To evaluate the discriminant validity of the OAS, the differences in the OAS between the following four groups derived from the ITQ were evaluated: no diagnosis, PTSD, DSO and C-PTSD (Figure 2). One-way ANOVA showed that there was a statistically significant difference in external shame (F (3, 337) = 100.07, p < .001, η^2 = .47) between the groups. Post hoc analysis using the Tukey test (Figure 3) found differences between all groups, with the greatest differences being observed between the group without a diagnosis and the C-PTSD group (p =.000, d = 27.27, 95% CI = 22.99 to 31.54).

DISCUSSION AND CONCLUSION

The aim of this study was to evaluate the psychometric properties of the OAS in the general population and a population with symptoms associated with PTSD, DSO and C-PTSD.

There is growing evidence of an association between external shame and various disorders, such as depression, anxiety, and posttraumatic stress disorder. Given that a moderating role of external shame has been identified in the effectiveness of the treatment, it is essential to evaluate instruments that allow the identification of this construct.

One of the most widely used scales to evaluate external shame is the OAS (Goss et al., 1994). This scale has been translated into several languages and has been used in various populations. However, no studies have evaluated its psychometric properties in a population with complex posttraumatic stress disorder.

Although there is an abbreviated version of the scale, we decided to evaluate the original version because although the former is a useful, economical resource in research, it loses some of the information on the dimensions

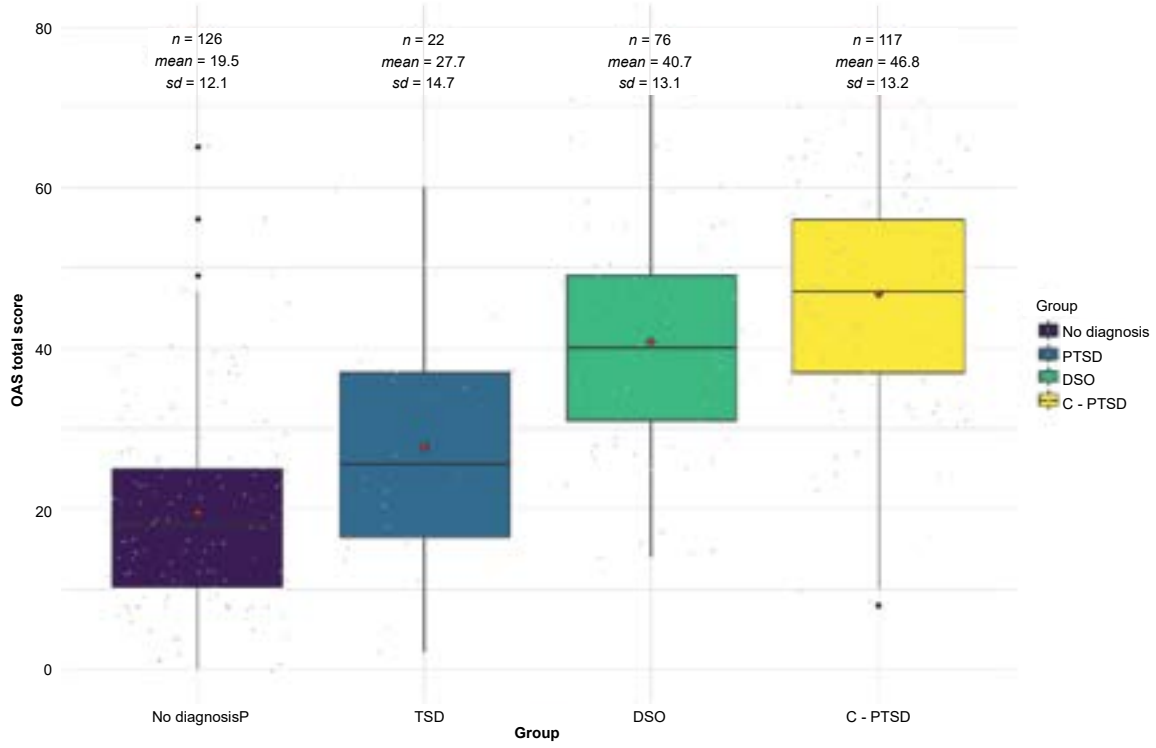

Figure 2. Box Plot for OAS Scores in ITQ Subgroups.
Note: PTSD: posttraumatic stress disorder; DSO: disturbances in self-organization; C-PTSD: complex posttraumatic stress disorder

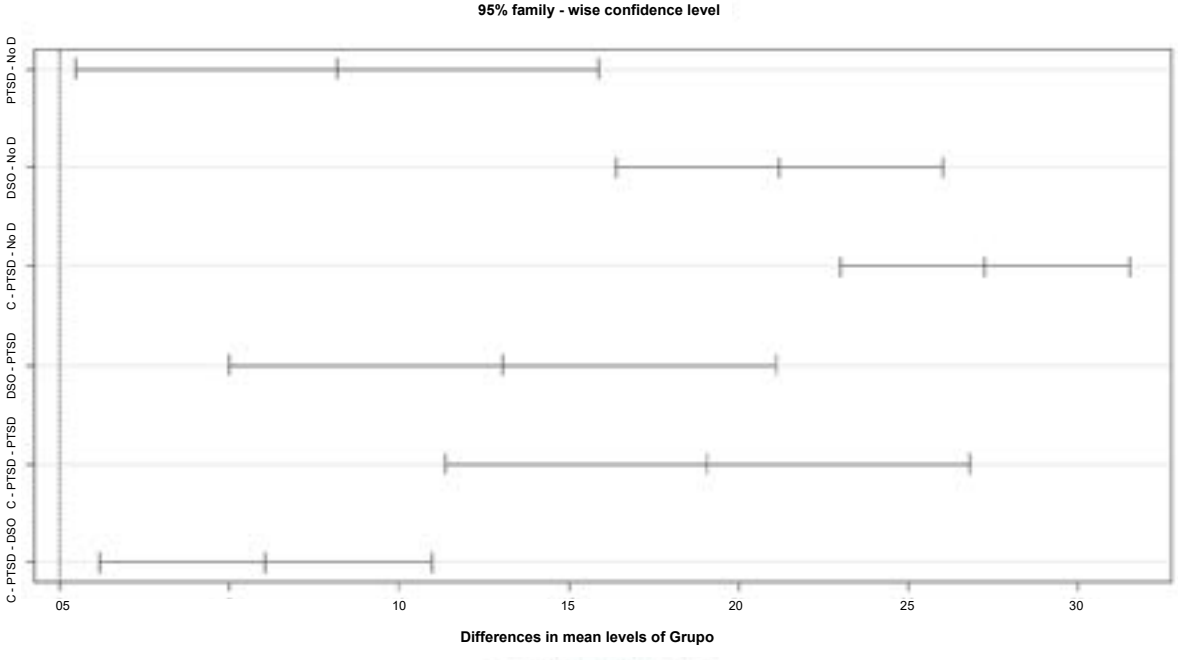

Figure 3. Difference in Means between ITQ Groups.
Note: PTSD: posttraumatic stress disorder; DSO: disturbances in self-organization; C-PTSD: complex posttraumatic stress disorder; No D: no diagnosis

of external shame explored in the original version that could be useful in clinical settings and research studies.

In addition, among the limitations commonly pointed out in previous studies, most of the analyses were conducted with student samples, the results of which may not be representative of other types of samples. We therefore decided to work with a sample of adults aged between 18 and 65 (with an average age of 43), unlike other studies in which the average age was approximately 20 (Balsamo et al., 2015; Hiramatsu et al., 2020; Saggino et al., 2017; Satici & Deniz, 2020).

Two models were evaluated: the 3-factor model of the original article and a model combining all the items into a single factor. The results suggest that the OAS is a valid, reliable instrument for the Mexican population and can be used to explore three factors: inferiority, emptiness, and mistakes.

The CFA showed that the 3-factor model has an adequate fit in terms of all the indicators. Despite having an adequate fit in terms of the CFI and the TLI, the 1-factor model had an acceptable but not excellent fit based on the normalized chi square and RMSEA values. The 3-factor model is therefore considered to be more appropriate although the use of the total score is justified.

The adjustment indices were similar to those obtained by Balsamo et al. (2015) and Vagos et al. (2016), who evaluated the 3-factor model of the original study with Italian adults and Portuguese adolescents respectively, obtaining similar results to those obtained in studies evaluating the OAS-2.

Regarding internal consistency, the use of the alpha coefficient to evaluate reliability is associated with a high probability of obtaining biased data. The omega coefficient is therefore recommended as a substitute, particularly when the items on a scale are scored with a Likert-type scale and the data are presented in a multidimensional way (Flora, 2020). Regardless of the use of a different coefficient, the value obtained (ω = .964) was higher than that reported in previous studies (Balsamo et al., 2015; Gull et al., 2022; Hiramatsu et al., 2020; Matos et al., 2015; Saggino et al., 2017; Satici & Deniz, 2020; Vagos et al., 2016).

To evaluate the discriminative validity, we decided to use PTSD, DSO and C-PTSD since a significant association has been found between external shame and posttraumatic symptoms (Brand et al., 2022; Dorahy et al., 2016; La Bash & Papa, 2013). Shame predicts more severe posttraumatic symptoms (Cunningham et al., 2018; Puhalla et al., 2021) as well as reducing the effectiveness of treatment. One element distinguishing C-PTSD from PTSD is the presence of DSO, which have been shown to be related to interpersonal factors (Bachem et al., 2021) in which shame plays an important role (Dorahy et al., 2009).

The differences in means show that there are differences in the levels of external shame when the presence of posttraumatic symptoms is considered. Results are consistent with those described by Dorahy et al. (2017), who found that people with C-PTSD symptoms have higher levels of shame than those without PTSD symptoms. However, a key fact is that according to the ICD-11 categorization, people who only presented symptoms of DSO (and did not meet the diagnostic criteria for PTSD or C-PTSD) had higher levels of shame than those in the PTSD group, followed by those in the C-PTSD group.

These results could indicate greater difficulties in people with C-PTSD as well as those with DSO, which could prevent help-seeking behavior or the disclosure of information in psychotherapy by these populations. Conversely, addressing these problems could increase the effectiveness of psychotherapy.

Regarding the limitations, the results may not be generalizable to all clinical populations. Likewise, although the differences were analyzed in relation to a sample that meets the diagnostic criteria for PTSD, DSO and C-PTSD using the ITQ, which has shown adequate psychometric properties and the ability to discriminate people with CPTSD, the results need to be supported by a clinical interview. Subsequent studies should therefore examine the validity of the OAS in people with a diagnosis confirmed through a clinical interview. Moreover, our sample size prevented us from performing an invariance analysis between symptom groups, which would have provided valuable information for those working with clinical samples.

Finally, it is essential to consider the cultural factor. Although some studies suggest that the experience of shame is similar across cultures (Matos et al., 2021), authors such as Kollareth et al. (2018) suggest that cultural aspects may influence the experience and expression of shame. For example, in shame research, it is often assumed that words associated with shame are equivalent across languages. However, differences exist between the meaning of the word “shame” in English and its Spanish translation "*vergüenza*". Whereas the term “shame” is associated with moral failure and has a stronger link to guilt, this association is less pronounced in its Spanish counterpart. It is therefore crucial for future research to integrate the cultural perspective when assessing the construct of shame to achieve a more comprehensive understanding.

Conclusion

The results of this study allow us to conclude that the OAS is a valid, reliable instrument for assessing external shame in the Mexican population and helps identify differences between the general population and individuals with post-traumatic symptomatology.

The clinical implications of this study are significant, as identifying shame as an issue to be addressed could help mitigate its impact. High levels of shame, for instance, may

indicate the presence of comorbidities requiring evaluation, greater symptom severity, or potential obstacles in the therapeutic relationship, such as clients withholding information. Moreover, addressing shame could improve social interactions and foster the development of a positive self-concept, among other benefits.

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Conflicts of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Psychometric Properties of Brief Life Skills Scale for Adolescents

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ABSTRACT

Introduction. Life skills help young people resolve problems assertively and manage their lives healthily to cope with everyday challenges and are a key resource for enhancing their psychosocial development. **Objective.** To measure construct validity through the implementation of exploratory and confirmatory factor analysis and to prove the reliability and concurrent validity of a brief scale for assessing life skills in Mexican adolescents. **Method.** The Brief Life Skills Scale for Adolescents (Spanish acronym EHV-A) measures planning for the future, assertiveness, expression of emotions, taking responsibility, decision-making, and resistance to peer pressure. Designed using psychometric tests previously validated for Mexican adolescents, it only includes the items with the best psychometric values. It was administered to 3,787 male and female students. The internal structure of the test was analyzed using exploratory factor analysis with oblique rotation and confirmatory factor analysis to corroborate the theoretical consistency of the model. Reliability was estimated using Cronbach's alpha. Concurrent validity was measured with a brief version of the Rosenberg Self-Esteem (RSE) Scale. **Results.** The exploratory factor analysis model yielded a six-factor structure (planning for the future, assertiveness, expression of emotions, resistance to peer pressure, decision making, and taking responsibility) that explained 76% of the variance, with Cronbach's alpha ranging between .82 and .92 for each factor, and .96 for the whole scale. This structure was corroborated by confirmatory factor analysis. The model had adequate fit indices, and the concurrent validity test of the EHV-A was acceptable and theoretically consistent (with correlations between .66 and .72 with the RSE). **Discussion and conclusion.** The results show satisfactory psychometric properties and the convergent validity of the EHV-A, indicating that it is a potentially useful tool for assessing life skills in adolescents.

Keywords: Adolescents, life skills, psychometrics, students, validity.

RESUMEN

Introducción. Las habilidades para la vida ayudan a los jóvenes a resolver asertivamente y a gestionar su vida de manera saludable para afrontar retos cotidianos y constituyen un recurso importante para fortalecer su desarrollo psicosocial. **Objetivo.** Medir la validez de constructo, mediante análisis factorial exploratorio y confirmatorio, así como la confiabilidad y la validez concurrente de una escala breve para evaluar Habilidades para la Vida en adolescentes mexicanos. **Método.** Se diseñó la Escala Breve de Habilidades para la Vida para Adolescentes (EHV-A, que mide planeación a futuro, asertividad, expresión de emociones, toma de responsabilidad, toma de decisiones y resistencia a la presión de los pares), utilizando pruebas psicométricas previamente validadas para adolescentes mexicanos, incluyendo únicamente aquellos reactivos con mejores valores psicométricos. El instrumento se aplicó a 3787 estudiantes, hombres y mujeres. La estructura interna del instrumento se evaluó mediante un análisis factorial exploratorio con rotación oblicua y un análisis factorial confirmatorio para corroborar la consistencia teórica del modelo. La confiabilidad se estimó utilizando el alfa de Cronbach. La validez concurrente se midió con una versión breve de la Escala de Autoestima de Rosenberg (EAR). **Resultados.** El modelo de análisis factorial exploratorio generó una estructura de seis componentes (planeación a futuro, asertividad, expresión de emociones, resistencia a la presión de pares, toma de decisiones y toma de responsabilidad) que explican el 76% de la varianza y el alfa de Cronbach estuvo entre .82-.92 para cada factor y .96 para la escala global. Esta estructura se corroboró mediante el análisis factorial confirmatorio. El modelo tuvo índices de ajuste adecuados y la prueba de validez concurrente de la EHV-A fue aceptable y teóricamente consistente (correlaciones entre .66-.72 con la EAR). **Discusión y conclusión.** Los resultados muestran propiedades psicométricas satisfactorias y validez concurrente de la EHV-A demostrando que es una herramienta potencialmente útil para evaluar habilidades para la vida en adolescentes.

Palabras clave: Adolescentes, habilidades para la vida, psicometría, estudiantes, validez.

INTRODUCTION

The WHO life skills (LS) model focuses on health protection and the prevention of risky behavior (Darlington-Bernard et al., 2023). LS are positive, adaptive psychosocial and interpersonal abilities enabling adolescents to make assertive decisions, solve problems, develop critical thinking, communicate effectively, and manage their lives in a healthy way to cope with everyday events (United Nations Children's Fund [UNICEF], 2000; World Health Organization [WHO], 2021). This approach considers: 1) the importance of cognitive, interpersonal, and coping skills in psychosocial development; 2) the role of these skills in protecting health, adopting positive behaviors, and fostering healthy social relationships; 3) the reinforcement of protective factors to prevent risky behavior (Darlington-Bernard et al., 2023; WHO, 2020); 4) the strengthening of protective factors, such as self-knowledge, self-confidence, and self-esteem; 5) the improvement of academic performance (Rai & Vandana, 2022); and 6) the mastery and application of these skills to enhance self-efficacy and promote well-being during adolescence (Ross et al., 2020; WHO, 2003, 2020).

Life Skills Training (LST) is a universal, school-based preventive approach for adolescent students to cope with risk behaviors. With its multiple components, it has generated ten skills sets to support the training method (Alfaro et al., 2010; Mangrulkar et al., 2001; WHO, 2003, 2020). This approach was developed in the United States in 1979 and has since spread throughout the world (Botvin & Griffin, 2007; Botvin et al., 2015; Espada et al., 2015; Velasco et al., 2015).

Since certain risk behaviors and mental health problems have their onset during childhood and adolescence, it is essential to strengthen LS through community interventions, psychoeducation campaigns, and curricular content to impact mental health problems. Interpersonal skills, assertiveness, and problem-solving are active components consistently associated with the effectiveness of interventions. These LS contribute to achieving positive mental health and preventing undesirable outcomes (Skeen et al., 2019).

Despite the evidence supporting the effectiveness of LS-based interventions in areas such as drug use reduction, with significant improvements in process and outcome evaluation, tools for its measurement remain limited. A systematic review of longitudinal evaluation studies on the effectiveness of LS programs found that most focus on adolescents and have limited evidence on the effectiveness of specific program components. Additionally, most studies are developed in Western societies, particularly the United States and Europe, limiting the generalizability of their findings to other cultural contexts (Kirchhoff & Keller, 2021). However, evidence indicates the positive long-term effects of LST on adolescent drug use, attributed to improvements in resistance to peer pressure and assertiveness (Weichold & Blumenthal, 2016). Another systematic review of drug use prevention programs for children and adolescents has reported positive results for LST in several domains, suggesting that there is evidence to support its effectiveness. The results of ten studies using this approach revealed a reduction in drug use, together with improvements in people skills, self-esteem, assertiveness, coping, and anxiety reduction. It is important to note, however, that the quality of the studies varied due to the methodological approaches used for their evaluation (Tremblay et al., 2020).

The WHO has adopted the LST approach for health promotion in schools (Alfaro et al., 2010; Botvin & Griffin, 2005, 2007; Mantilla & Chahín, 2012; Organización Panamericana de la Salud [OPS], 2001; Velasco et al., 2015; WHO, 1993, 2003, 2020). Data show that LST is effective in dealing with drug use. Nonetheless, conceptualizations, longitudinal studies, and standardized, validated instruments are still required to evaluate interventions, compare the impact of LST-based programs, and develop best practices (Duerden et al., 2012; Faggiano et al., 2014; Hoskins & Liu, 2019; Tremblay et al., 2020; UNICEF, 2020).

The LS work model has been implemented in various intervention strategies across Latin America. An analysis of the literature shows that Mexico has published the most articles (six), followed by Chile, Colombia, and Costa Rica with two each, and Ecuador, Peru, and Spain with one each (Solís, 2022). There is, however, a need to improve the methodological quality of interventions in the region (Santana-Campas et al., 2021) as well as the measurement instruments used (Solís, 2022). The development of reliable, valid instruments to measure SL in Latin America has recently seen significant growth, with various questionnaires demonstrating acceptable psychometric values (Cronbach's alpha .63-.90) (Alfaro et al., 2010; Díaz-Posada et al., 2013; Fernández & Castro, 2020; Niño-Bautista et al., 2017; Pérez de la Barrera, 2012 Pérez de la Barrera, 2012; Reyes & González, 2020; Santana-Campas et al., 2018; Santana-Campas et al., 2024). Three of these studies provide the reliability index for the global scale (Fernández & Castro, 2020; Reyes & González, 2020; Santana-Campas et al., 2018). Four studies have assessed the ten skills of the WHO model (Díaz-Posada et al., 2013; Fernández & Castro, 2020; Reyes & González, 2020; Santana-Campas et al., 2018); three have undergone an EFA (Alfaro et al., 2010; Fernández & Castro, 2020; Santana-Campas et al., 2018) and one a CFA (Santana-Campas et al., 2018). Most of the questionnaires are long, with the number of items ranging from 70 (Pérez de la Barrera, 2012 Pérez de la Barrera, 2012 Pérez de la Barrera, 2012) to 80 (Díaz-Posada et al., 2013; Fernández and Castro, 2020; Reyes & González, 2020; Santana-Campas et al., 2018). This can make respondents lose interest and find the questionnaire tedious. Although Alfaro et al. (2010) and Niño-Bautista et al. (2017) have analyzed questionnaires with 36 to 37 items, they do not report reliability values. One of the brief questionnaires includes the ten LS in the WHO model (Santana-Campas et al., 2024). The original version has 80

items (Santana-Campas et al., 2018), reduced to 40 in the brief version.

However, it reports internal structure values, CFA data, invariance analysis, and reliability coefficients (with Cronbach's alpha, ordinal alpha, and McDonald's omega equal to or greater than .90). However, the authors recommend exercising caution when using this brief test, as four of the dimensions failed to meet the reliability criteria (empathy, effective, assertive communication, interpersonal relations and problem solving and conflict resolution).

There are a limited number of psychometrically acceptable LS scales (Hoskins & Liu, 2019; UNICEF, 2020). Some are too extensive (Díaz-Posada, 2013), and require special training (Haug et al., 2021), meaning that it is necessary to develop brief, robust, cost-effective scales to test specific interventions for drug use prevention in the Mexican context where drug use is a critical issue in adolescents.

LS education in developing countries tends to produce short-term results. There is usually no systematic implementation, follow-up, or long-term evaluation (Nasheeda et al., 2018), or they lack standardized, culturally appropriate instruments (Kirchhoff & Keller, 2021; Nasheeda et al., 2018).

Appropriate tools are therefore required to measure LS effectiveness and evaluate their potential (Ross et al., 2020).

The limited number of instruments for measuring LS underscores the need to develop brief, valid, reliable, and culturally appropriate tools to use in prevention programs (Hoskins & Liu, 2019; UNICEF, 2020). These instruments could also serve as screening tools to identify problematic areas in adolescents, obtain evidence to support strategies for their psychosocial development, and evaluate the effectiveness of interventions.

The aim of this study is to measure construct validity through the implementation of the exploratory and confirmatory factor analysis of the EHV-A, designed according to the WHO LS model for health protection and the prevention of risk behaviors (Darlington-Bernard et al., 2023; WHO, 2003). We also seek to prove the reliability and concurrent validity of the scale in Mexican adolescents. Concurrent validity was estimated through the relationships between Life Skills (LS) and Self-esteem (SE). The following hypotheses were proposed : 1) The psychometric properties of the EHV-A scale are adjusted to a sample of Mexican adolescents. 2) LS and Self-esteem constructs, measured through the EHV-A instrument and the Rosenberg Scale (RSE) have statistically significant relationships.

METHOD

Study Design and Participants

We conducted a quasi-experimental pre-post and follow-up study comparing groups that received preventive intervention and control groups, using non-probabilistic convenience sampling. The study evaluated LS and other variables. The sample included Mexican male and female junior and senior high school students and was divided into an experimental group and a control group. Once we had obtained the final sample, we randomly assigned whole school groups to either the experimental or the control group. A random sample was drawn from each group (n = 500) to avoid the sample size problem in confirmatory factor analysis (CFA). Exploratory factor analysis (EFA) was performed with the control group sample and CFA was performed with the experimental group sample, which included participants living in different states. The evaluation was conducted from 2017 to 2019.

Measures

The Brief Life Skills Scale for Adolescents (EHV-A) was designed using items from other more extensive scales with 6 to 36 items each assessing skills separately, which have been validated for Mexican adolescents (Alfaro et al., 2010; Betancourt et al., 2018; Betancourt et al., 2019; Pérez de la Barrera, 2012; Sánchez-Xicoténcatl et al., 2013). The items included in the EHV-A had the highest factor loadings and the original 4-point Likert scale was maintained for each item. The responses for the 24 items in the EHV-A are 1 = never, 2 = rarely, 3 = often, and 4 = always.

The skills include planning for the future, assertiveness, expression of emotions, taking responsibility, decision making and resistance to peer pressure. We included these six specific LS in the EHV-A because they have proven to be effective in preventing drug use and maintaining emotional wellbeing in adolescents (Alfaro et al., 2010; Andrade Palos et al., 2009; Betancourt et al., 2018; Betancourt et al., 2019; Pérez de la Barrera, 2012; Sánchez-Xicoténcatl et al., 2013; UNICEF, 2020).

Conceptual Definitions of LS Included

Planning for the future involves the ability to set goals linked to the results one wishes to achieve (Alfaro et al., 2010; Pérez de la Barrera, 2012). Assertiveness is the ability to express feelings, thoughts, or desires and to communicate them in an open, respectful manner (Alfaro et al., 2010; Pérez de la Barrera, 2012). Expression of emotions consists of the ability to recognize one's emotions and express them (Alfaro et al., 2010; Pérez de la Barrera, 2012).

Taking responsibility is the ability to make conscientious choices based on the positive and negative consequences of a behavior before acting (Betancourt et al., 2019). Decision making is the ability to evaluate an action and its possible consequences to make a responsible decision (Betancourt et al., 2019). Resistance to peer pressure is the ability to refuse to use alcohol, tobacco, or other drugs

even if friends insist (Aguilar-Kubli, 1987; Sánchez-Xicoténcatl et al., 2013).

A brief version of the Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) was included to evaluate concurrent validity of the EHV-A. Data on improving self-esteem using LST make it an acceptable parameter for testing the external validity of LS measurements (UNICEF, 2020). The original scale comprises ten items, and we used the five positive statements with equivalent meanings across several cultures (Benish-Weisman et al., 2020). These items are grouped into a single factor with internal consistency values above .75, with the following Likert responses: 0 = strongly disagree, 1 = disagree, 2 = agree, and 3 = strongly agree. The higher the score, the higher the respondent's self-esteem (Jiménez et al., 2007).

Procedure

Prior to initiating the data collection process, briefing meetings were arranged with school authorities and parents from the respective educational institutions. The objectives and activities to be conducted were thoroughly explained. The authorities approved the presence of the research team at the schools. Parents were advised that they would receive an informed consent form with all the information on the study and that their children would receive an assent form, and would make the final decision to participate. A team of trainee psychologists was taught to supervise the self-administered paper and pencil questionnaires. Average response time was 50 minutes, with a 100% response rate.

Data Analysis

Data analysis was performed with the SPSS 26 and IBM SPSS Amos 26 packages (IBM Corp., 2019). The internal structure of the scale was analyzed using two techniques. The first was an exploratory factor analysis (EFA) with oblique rotation to estimate the internal consistency of the subscales and the entire scale. This is the most widely used analysis for developing and validating scales because it explores a set of latent variables explaining the responses to the items. EFA assumes that the measures reflect the underlying constructs (Bollen & Lennox, 1991; Edwards, 2011; Edwards, 2011; Kim & Mueller, 1978) and that part of the variability of an item will be produced by communality.

The second technique was confirmatory factor analysis (CFA). This analysis seeks to determine whether the number of factors obtained in EFA, and their loadings correspond to what is theorized about the data. The initial hypothesis is that there are several factors, each of which is associated with a certain number of variables. CFA yields a confidence level to determine the hypothesis. In this analysis, we consider the following most common fit indicators. CMIN is the minimum discrepancy value (X^2), $p > .05$, which is the probability of a large discrepancy with the current sample, CMIN/df, which should have a value of close to 1 for models that fit adequately, although an index close to .5 or less has been suggested as a reasonable value (Wheaton et al., 1977). Comparative fit index (CFI) is the probability of a large discrepancy with the current sample (Tanaka, 1993), which also ranges between 0 and 1, with .9 being the minimum required to defend the model (Bentler & Bonett, 1980). The normed fit index (NFI) measures the decrease in the chi-square statistic of the model adopted with respect to the base model, whose minimum value is .9. The root mean square error of approximation (RMSEA) is used to measure the model error, with values of between .05 and .08 indicating an acceptable fit (Browne & Cudeck, 1993).

The scale was constructed with the assumption of the existence of six factors: planning for the future, assertiveness, expression of emotions, resistance to peer pressure, decision making, and taking responsibility. In the analyses, membership for each factor was defined as a loading ≥ .30. Reliability was estimated by calculating Cronbach's alpha, where the desired value was > .70. Concurrent validity was estimated using RSE as a parameter, the expected values for strong effects being > .50. EFA was performed with principal axis extraction, oblique rotation, and Kaiser normalization. Two approaches were used in this analysis, one in which the eigenvalue was greater than one and another in which the solution was adjusted to six factors.

Ethical considerations

The Research Ethics Committee of the Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz (Approval No. CEI/C/003/2016) approved the study. The objectives of the research, and the risks and benefits of participating in the study were explained to students. They were informed that their participation was voluntary, that their answers would be anonymous, and that the results would not affect their activities or grades. All the participants' parents signed an informed consent form, and all the participants provided written informed assent, as required by Mexican law (Diario Oficial de la Federación, 2014). Due to the confidentiality agreement established with the participants, the data used in the current research (database, questionnaires, informed consent and assent) are not available in a public repository. All the procedures adopted the ethical standards of the committee responsible for institutional human experimentation and the Declaration of Helsinki 2000. Informed consent was obtained from all the participants in the study.

RESULTS

The sample included 3,787 Mexican junior (60%) and senior high school students (40%) and balanced in terms of sex (49% were female and 51% male). The age range was 11 to 19 years (M = 14, SD = 1.7). School groups were randomly assigned to the experimental (n = 2397) and control groups (n = 1390).

EFA and CFA in the Solution Adjusted to Six Factors.

The six-factor model explained 76% of total variance, obtaining a global eigenvalue of 18.232. The variance ex-

Table 1
Exploratory Factor Analysis and Internal Consistency Measures for the Brief Life Skills Scale for Adolescents (EHV-A) (Six-Factor Structure)

Factor/items	*Factor loadings*	*M(SD)*	*Asymmetry*	*Kurtosis*	*Item-total correlation*	*Cronbach's alpha*
1. Planning for the future						.916
I try to achieve the goals I set for myself.	.551	2.41(1.170)	.155	-1.451	.858	.858
I strive to achieve what I really want.	.536	2.31(1.209)	.251	-1.503	.83	.88
I have defined goals in life.	.45	2.35(1.218)	.205	-1.537	.806	.90
2. Resistance to peer pressure						.919
I refuse to drink alcohol at parties or gatherings with my friends when I don't want to.	-.882	2.40(1.274)	.104	-1.67	.768	.904
I tell my friends not to insist when they push me to drink alcohol.	-.871	2.30(1.273)	.274	-1.613	.809	.899
I would say no if my best friend asked me to get drunk and I didn't want to.	-.853	2.31(1.301)	.24	-1.678	.814	.898
I would drink soda at a party even if most people were drinking alcohol.	-.752	2.32(1.275)	.229	-1.637	.826	.896
I can refuse a drink when I don't want one.	-.629	2.27(1.347)	.302	-1.725	.828	.896
I wouldn't drink if I didn't want to even if my friends were drinking alcohol.	-.341	2.34(1.321)	.219	-1.716	.579	.93
3. Decision making						.893
I think about the possible consequences before deciding	.859	2.33(1.057)	.192	-1.185	.791	.863
I look for as much information as possible to decide.	.773	2.37(1.037)	.13	-1.149	.711	.875
I think carefully about what I am going to do when I must decide.	.72	2.34(1.115)	.176	-1.332	.739	.871
I think about different ways to solve a problem.	.621	2.32(1.077)	.213	-1.229	.755	.868
I think about the advantages and disadvantages of my decisions.	.61	2.35(1.048)	.164	-1.17	.751	.869
When I decide I evaluate the results.	.381	2.55(1.022)	-.028	-1.121	.544	.9
4. Expression of emotions						.841
I express what I feel.	.791	2.36(1.08)	.177	-1.241	.694	.791
I am a person who shows affection.	.77	2.41(1.061)	.16	-1.192	.733	.756
I show my happiness.	.563	2.33(1.231)	.22	-1.559	.7	.792
5. Assertiveness						.853
I can express my ideas clearly and openly.	.698	2.43(1.036)	.083	-1.149	.731	.788
I give my point of view, even if it is different from that of other people.	.604	2.41(1.08)	.102	-1.259	.729	.789
I defend my opinions to my friends.	.453	2.34(1.122)	.186	-1.345	.712	.806
6. Taking responsibility						.824
I arrive at appointments on time.	.742	2.42(1.048)	.096	-1.178	.647	.789
I arrive at classes on time.	.619	2.35(1.179)	.217	-1.45	.731	.706
I fulfill my commitments.	.379	2.43(1.038)	.13	-1.142	.67	.769

Note: M(SD): Mean (standard deviation)

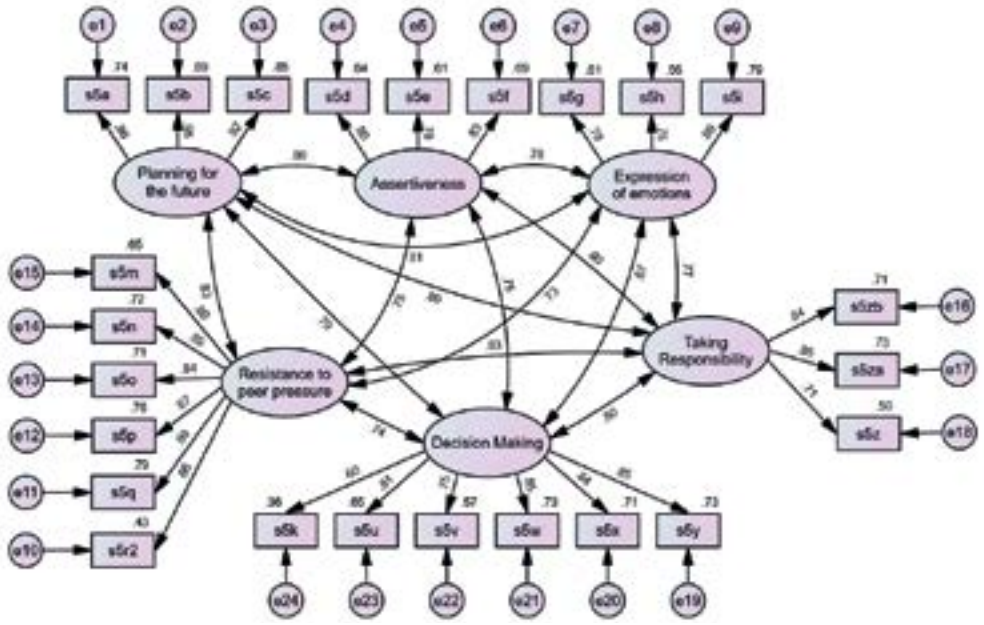

Figure 1. Confirmatory Factor Analysis Model of the Brief Life Skills Scale for Adolescents (EHV-A) (six-factor structure).

Note: s5a to s5zb: Items in the Brief Life Skills Scale for Adolescents; e1 to e24: Error of each variable.

Table 2
Factor Correlations with Rosenberg Self-Esteem Scale

	CMIN (X^2)	*p*	*NFI*	*F0 (CI)*	*RMSEA*	*PCLOSE*	*r*
Six-factor	613.991	< .001	.942	.720 (.594 - .877)	.055	.048	
Future	106.884	< .001	.961	.170 (.114 - .240)	.094	.000	.66
Assertiveness	117.173	< .001	.943	.190 (.131 - .263)	.100	.000	.72
Emotions	98.477	< .001	.952	.153 (.101 - .221)	.090	.000	.68
Peer pressure	174.933	< .001	.953	.255 (.183 - .341)	.077	.000	.64
Decision making	153.553	< .001	.954	.213 (.148 - .294)	.070	.003	.66
Responsibility	94.104	< .001	.954	.145 (.094 - .211)	.087	.000	.67

Note: CMIN: Minimum Discrepancy Value; NFI: Normed Fit Index; RMSEA: Root Mean Square Error of Approximation; F0: Minimum Discrepancy Function; PCLOSE: p-value associated with RMSEA hypothesis testing

plained by each factor ranged from 3% to 52%, while eigenvalues ranged from .72 to 12.47. The factor structure (Table 1) was as follows: 1) planning for the future (three items); 2) resistance to peer pressure (six items); 3) decision making (six items); 4) expression of emotions (three items); 5) assertiveness (three items); and 6) taking responsibility (three items).

The six-component factor structure yielded by EFA was corroborated by CFA. The CFA model showed good fit indices (X^2 = 697.27, p < .001; CFI = .963; NFI = .952; RMSEA = .055; AIC = 787.99) (Figure 1).

Reliability and Concurrent Validity

Table 2 shows the reliability data calculated in EFA, which were excellent for each factor (with Cronbach's alpha ranging from .82 to .92), and for the entire scale (Cronbach's alpha = .96). The item-total correlations of the variables in the model were also satisfactory (.54-.86). The concurrent validity of each factor was calculated with RSE and the correlations were acceptable and theoretically consistent. The fit indices for each of the models were adequate.

DISCUSSION AND CONCLUSION

The results of this study indicate that the questionnaire demonstrates enhanced psychometric properties and convergent validity in the six-factor solution. These findings align with our objectives to validate the EHV-A scale according to the WHO LS model approach. Moreover, the study examined the associations between the LS and RSE

constructs in Mexican adolescents, demonstrating the potential of the questionnaire to serve as a useful tool for assessing LS in this demographic. Since adolescents are prone to mental health challenges, it is essential to have tools to identify limitations in their abilities to interact in a range of contexts. To develop this scale, we used items that were comprehensible, culturally relevant, and psychometrically sound, drawing on other assessments. Using measurement instruments should be easy, acceptable to participants, sensitive, valid, and reliable (Román et al., 2016; Warner, 2004). Their use is therefore more feasible in spaces where the timely identification of skills can lead to the development of programs to strengthen LS. School settings are suitable for the use of these tools, as they offer an ideal context for screening, prevention, and intervention due to the ease of access to large samples in a more controlled environment (WHO, 2020).

In accordance with the initial hypothesis, the psychometric properties of the EHV-A scale, developed according to the WHO approach (2003), have been validated as adequate for Mexican adolescents. The EHV-A scale demonstrates validity at the structural level. The EHV-A scale has two major advantages over other scales developed using the WHO approach (Kennedy et al., 2014; Kobayashi et al., 2013): First, it aligns with the focus proposed by the WHO in terms of health protection and the prevention of risk behaviors. Second, its brief structure with just 24 items makes it particularly well-suited for implementation in fieldwork settings. As mentioned earlier, the creation of this scale could help address the lack of reliable, valid instruments for the Spanish-speaking context. Most available scales are extremely lengthy and designed for English-speaking contexts (Kirchhoff & Keller, 2021). The creation of culturally appropriate instruments allows for the collection of robust, relevant data for drug use prevention based on the strengthening of LS such as resistance to peer pressure, assertiveness, and decision-making (Weichold & Blumenthal, 2016).

The LST approach has proved effective in changing adolescents' relationship with drugs and strengthening personal skills and self-esteem (Tremblay et al., 2020).

Regarding the second hypothesis, the results confirm a statistically significant relationship between the LS and SE constructs. Structural Equation Modelling (SEM) reveals a close relationship between LS and SE. This finding underlines the close association between adolescent individuals' perception of their self-esteem and their cognitive, emotional, and social life skills. These findings are consistent with prior scientific knowledge. This outcome also validates the external validity of the EHV-A scale as a brief yet effective instrument in educational settings.

Confirmatory Factor Analysis

Analysis of the internal structure through CFA showed a good fit of the hypothesized six-factor model for the EHV-A: planning for the future, assertiveness, expression of emotions, resistance to peer pressure, decision making, and taking responsibility. These results concur with those reported by the original authors of the scales (Betancourt et al., 2019; Jiménez et al., 2007; Pérez de la Barrera, 2012; Sánchez-Xicoténcatl et al., 2013). The six-factor structure supports the use of a total score representing the cumulative score of LS, as well as the individual score of each skill. The estimation of reliability through internal consistency for the six LS produced satisfactory Cronbach's coefficients, ranging from .84 to .92. These values also concur with the values for the original versions. Item analysis showed item-total correlations above .60 for most of the items, which is acceptable.

Reliability and Concurrent Validity

The concurrent validity of each life skill with the RSE was highly satisfactory, with correlation coefficients of between .6 and .7. The five items in this brief self-esteem scale constituted a single factor, comprising the sum of the scores, and also had acceptable internal consistency (Cronbach's alpha > .75).

Our findings indicate that the EHV-A demonstrates excellent reliability and strong concurrent validity and is theoretically congruent with a brief version of the RSE. EFA produced a robust model explaining nearly 70% of the variance, and the six factors comprising it are theoretically congruent with respect to each life skill assessed. CFA corroborated the model, which obtained adequate fit indices.

The EHV-A assesses six skills (planning for the future, assertiveness, expression of emotions, resistance to peer pressure, decision making, and taking responsibility) and includes a brief RSE in a self-administered format. It is therefore a valid, reliable scale, and a cost-effective tool with considerable potential usefulness for monitoring LS and self-esteem in adolescent populations. It is also a potentially useful tool for evaluating interventions designed to improve and develop these skills in groups of adolescents at school. EHV-A makes it possible to generate baseline estimates of each of the six LS and self-esteem in the adolescent population to design evidence-based interventions that will enhance these skills. This scale is a suitable option in comparison with other available options in terms of length and psychometric quality (Solís, 2022). Although there are others with good performance and acceptable quality (Alfaro et al., 2010; Díaz-Posada et al., 2013; Fernández & Castro, 2020; Niño-Bautista et al., 2017; Pérez de la Barrera, 2012; Reyes & González, 2020; Santana-Campas et al., 2018; Santana-Campas et al., 2024), its brevity makes it more practical (Fernández & Castro, 2020; Reyes & González, 2020), and its reliability scores are higher than those in other short versions (Santana-Campas et al., 2024).

The use of the EHV-A before and after interventions would also help to measure their impact in strengthening LS and self-esteem.

There is evidence that self-esteem is a protective factor influencing physical and mental health, as well as social behavior, cushioning the impact of the negative influences or risks associated with adolescent development. It is therefore important to consider the potential of self-esteem in promoting mental health (Mann et al., 2004; Moulier et al., 2019).

There are also studies supporting the notion that self-esteem plays an essential role in individual adaptation to the environment, with implications for emotional health and mental well-being during adolescence. These findings highlight the importance of interventions that contribute to self-esteem during this stage of the life cycle (Moksnes & Espnes, 2012; Moulier et al., 2019; Zangirolami et al., 2018).

The development of LS in adolescence promotes mental well-being, good interpersonal relationships, and healthy behaviors. It also increases self-esteem and may constitute a protective factor against risk behaviors. Studies of prevention and intervention programs based on skills training in adolescence have shown that LS promotion has a positive impact on self-esteem as a psychosocial factor contributing to adolescents' mental health, and a healthy lifestyle (Jafarigiv & Peyman, 2019; Mann et al., 2004; Moulier et al., 2019; Niaraki & Rahimi, 2013; Tremblay et al., 2020; Zangirolami et al., 2018).

The excellent scores obtained here in validating the EHV-A with junior and senior high school students, and the potential of schools to serve as spaces for mental health promotion mean that it is important to conduct studies with children and preadolescents (Moulier et al., 2019; Zangirolami et al., 2018).

The EHV-A has understandable, culturally meaningful, and psychometrically robust items from other tests. It is recommended for use in adolescents up to 17 years of age, and it can be used for fundamental decision making in mental health promotion. This validation provides health, social, and educational professionals and researchers with a cost-effective scale to assess key LS and develop psychological resources. The EHV-A can be used to estimate baselines and evaluate interventions to promote LS and self-esteem in the adolescent student population. We believe that the findings of this study provide evidence that the EHV-A is suitable for use in further research on the functionality and effectiveness of LS-based intervention programs (Nasheeda et al., 2018).

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Conflict of interests

The authors declare that they have no conflict of interest.

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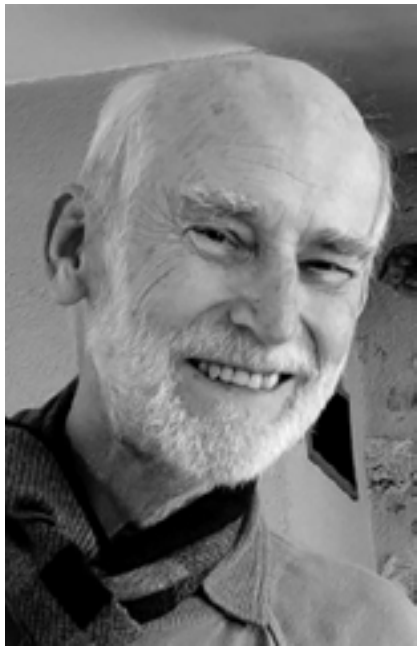
In memoriam
Bruno Jean Albert Vanneuville Sebert (1946 – 2025)



El Departamento de Publicaciones, la Dirección de Enseñanza del Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, lamentan profundamente el fallecimiento de un valioso colaborador y amigo de esta Institución, Monsieur Bruno Vanneuville, quien durante más de 40 años fue el impresor de la revista SALUD MENTAL, y durante los cinco años que tiene, también de MENTE Y CULTURA. Durante ese lapso su relación con el Instituto fue de gran valor por su responsabilidad, su cuidado y su compromiso laboral. Muy pronto se consideró parte de la empresa editorial iniciada por el fundador del Instituto que ahora lleva su nombre, el Doctor Ramón de la Fuente, quien le profesó una gran confianza y estimación.

Bruno Vanneuville nació en St. Omer, en el norte de Francia, un año después del final de la Segunda Guerra Mundial, tras volver su padre de Alemania donde permaneció prisionero durante cinco años. Fue el cuarto de siete hijos y después de sus estudios de preparatoria, donde por cierto tuvo una muy seria formación de la lengua latina, realizó estudios superiores en la Escuela de Comercio de Toulouse. Ahí participó en las protestas estudiantiles de 1968; a partir de ahí surgió su deseo de conocer otras culturas.

Eligió a México en donde se estableció a principios de la década de 1970 cuando llegó como representante de la editorial francesa Masson, tras una breve carrera bancaria. Se inició entonces su relación con las instituciones médicas mexicanas. Su compenetración con la cultura mexicana fue cada vez más profunda. No sólo dominó el español que se usa en México, sino que solicitó y obtuvo la nacionalidad mexicana, y contrajo, sucesivamente, matrimonio con dos damas mexicanas, teniendo con la primera sus dos hijos.

Monsieur Vanneuville fue un caballero de gran cultura y de una fina sensibilidad social, que siempre estaba al día y con quien era muy estimulante platicar. No sólo se ocupó de la impresión de las revistas del INPRFM, sino que su empresa Edilaser, imprimió a lo largo de su carrera, varias de las más importantes revistas médicas del país.

Su compromiso con el Instituto, y el valor de su cuidado editorial fueron de gran valor y merecen nuestra perenne gratitud.

Héctor Pérez-Rincón García
San Lorenzo Huipulco, Mayo 2025

GUÍA PARA LOS AUTORES

La revista Salud Mental publica artículos originales sobre psiquiatría, psicología, neurociencias y disciplinas afines de acuerdo con los siguientes formatos:

1. **Editoriales**
   Se escriben por invitación del Director-Editor de la revista. Deben expresar opiniones autorizadas sobre temas específicos de interés para la comunidad científica y para el área de la salud mental. Su objetivo es estimular el debate y promover nuevas líneas de investigación. *Extensión máxima: 1000 palabras*.
2. **Artículos originales (sección revisada por pares)**
   Presentan resultados de investigaciones no publicados en otras revistas. Pueden desarrollarse a partir de las siguientes metodologías:
   - **Metodología cuantitativa:** Incluye resultados primarios y secundarios de estudios transversales, ensayos clínicos, casos y controles, cohortes y estudios cuasi experimentales. *Extensión máxima: 3500 palabras*.
     De acuerdo con el tipo de estudio, los manuscritos deben cumplir con las guías:
     • Los ensayos clínicos aleatorizados deben adecuarse a las guías *CONSORT* (http://www.consort-statement.org).
     • Los estudios con diseños no experimentales, a las guías *TREND* (http://www.trend-statement.org).
     • Los estudios transversales, de cohorte, y de casos y controles, a la guía *STROBE* (http://www.strobe-statement.org).
   - **Metodología cualitativa:** Incluye reportes de grupos focales, entrevistas a profundidad, redes semánticas y análisis de contenido. *Extensión máxima: 5000 palabras*.
     Deben cumplir con la guía *COREQ* (https://academic.oup.com/intqhc/article/19/6/349/1791966/Consolidated-criteria-for-reporting-qualitative).
3. **Artículos de revisión (sección revisada por pares)**
   - **Revisiones sistemáticas:** Preferentemente deben incluir un metaanálisis. *Extensión máxima: 4000 palabras*.
4. **Casos clínicos (sección revisada por pares)**
   Incluye reportes de efectos de un método diagnóstico o terapéutico que sea útil o relevante en el ámbito médico, académico o científico. *Extensión máxima: 2000 palabras.*
   Deben cumplir con la guía *CASE REPORT* (https://www.care-statement.org/checklist)

Nota: El conteo de palabras para cada una de estas secciones excluye el título, los resúmenes y las palabras clave, así como los apartados de financiamiento, conflictos de interés y agradecimientos; tampoco se consideran las palabras incluidas en tablas, figuras y referencias.

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Salud Mental recibe y publica únicamente manuscritos en inglés.

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El número de autores dependerá del tipo de manuscrito enviado. Para artículos originales y artículos de revisión el número máximo de autores será de ocho. Solo cuando se trate de estudios multicéntricos el número máximo de autores será de doce, siempre y cuando se justifique de acuerdo con el alcance del estudio.

En caso de autoría colectiva, se incluirá el nombre de los redactores o responsables del trabajo seguido de «*y el grupo...»* cuando todos los miembros del grupo se consideren coautores del trabajo. Si se desea incluir el nombre del grupo, aunque no todos sus miembros sean considerados coautores, se mencionarán a los autores responsables seguido de *«en nombre del grupo...»* o *«por el grupo...»*. En cualquier caso, los nombres e instituciones de los miembros del grupo se incluirán en un anexo al final del manuscrito.

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Es muy importante que los autores consideren los siguientes puntos antes de enviar sus manuscritos:

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2. El texto debe estar escrito en formato Word, en fuente Times New Roman de 12 puntos, a doble espacio, con márgenes de 2.5 cm. y en tamaño carta.
3. Las páginas se numeran consecutivamente, empezando por la página del título y con el número escrito en la esquina superior derecha.
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   - **Nombre completo del autor y de los coautores.** Los autores deberán colocarse en listado; luego, en superíndice, deberá colocarse un número arábigo que indique la institución de adscripción.
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     Ejemplo:

     Juan José García-Urbina,[1]

     Héctor Valentín Esquivias Zavala[2]

     [1] Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.
     [2] Departamento de Publicaciones, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.

- Al final de la primera página, en el apartado ***"Correspondencia"***, se proporcionarán los datos de contacto del autor corresponsal (dirección postal completa, teléfono, correo electrónico). Es con quien Salud Mental se comunicará durante todo el proceso editorial.

  Ejemplo:

  Correspondencia:
  Juan José García-Urbina
  Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz.
  Calz. México-Xochimilco 101, San Lorenzo Huipulco, Tlalpan, 14370, Ciudad de México, México.
  Tel: 55 4152-3624
  E-mail: jurb@imp.edu.mx

5. La segunda página debe contener los resúmenes del trabajo presentado en inglés y español. *Extensión máxima: 250 palabras.*
   - ***Artículos originales y Revisiones sistemáticas.*** Los resúmenes deben estar conformados por: Introducción, Objetivo, Método, Resultados y Discusión y conclusión.
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     - Participantes/descripción de la muestra
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     - Mediciones
     - Procedimientos
     - Análisis estadísticos
     - Lineamientos éticos.

   Nota: En caso de los artículos de revisión y casos clínicos, estas secciones pueden ser modificadas de acuerdo con la guía PRISMA (revisiones sistemáticas o la guía CASE REPORT (casos clínicos).

   - **Resultados.** Se presentarán en una secuencia lógica dentro del texto. Pueden apoyarse con tablas, gráficas y figuras.
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   - Las tablas deben contener título y, en la parte inferior, una nota con el desglose de las siglas.
   - Las figuras deben enviarse en un formato de alta resolución (mínimo 300 dpi).
   - Los títulos de las tablas y los pies de las figuras deben ser claros, breves y llevar siempre el número correspondiente que los identifique. Dentro del texto, el autor debe indicar entre paréntesis y con mayúsculas en qué parte del texto sugiere insertar los elementos gráficos.

     Ejemplo:

     Se cambiaron las definiciones de algunos patrones conductuales (Tabla 3) de manera que fueran más comprensibles en el idioma español y se redefinieron las categorías que agrupan dichos patrones con base en la literatura especializada. (INSERTAR AQUÍ TABLA 3)

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1. Es importante que los manuscritos eviten en general las notas a pie de página, aunque se pueden considerar si son claramente necesarias.
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Para presentar los resultados se deben considerar las siguientes indicaciones:

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2. Utilizar números cuando se trate de fechas, muestras, etcétera.
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1. Manuscrito en formato en WORD.
2. Carta de presentación en formato PDF.
3. Carta de autorización de uso de obra en formato PDF.

GUIDELINES FOR AUTHORS

Salud Mental publishes original articles on psychiatry, psychology, neurosciences and other related fields in the following formats:

1. **Editorials**
   Written at invitation of the Director Editor, editorials express authoritative opinions on specific topics of interest to the scientific community and the area of mental health. They are designed to foster debate and promote new lines of research. *Maximum extension: 1000 words*.

2. **Original articles (peer-reviewed section)**
   These articles present research results unpublished in other journals, and can be written using the following methodologies:

   - *Quantitative methodology.* This methodology includes primary and secondary results from cross-sectional studies, clinical trials, cases and controls, cohorts, and quasi-experimental studies. *Maximum extension: 3500 words*.

     Depending on the type of study, manuscripts should adhere to the following guidelines:

     - Randomized clinical trials should adhere to the *CONSORT guidelines* (http://www.consort-statement.org).
     - Studies with non-experimental designs should adhere to the *TREND guidelines* (http://www.trend-statement.org).
     - Cross-sectional, cohort, and case-control studies should adhere to the *STROBE guidelines* (http://www.strobe-statement.org).

   - *Qualitative methodology.* This methodology includes focus group reports, in-depth interviews, semantic networks, and content analysis. *Maximum extension: 5000 words*.

     Articles using this type of methodology should comply with the *COREQ guidelines* (https://academic.oup.com/intqhc/article/19/6/349/1791966/Consolidated-criteria-for-reporting-qualitative).

3. **Review articles (peer-reviewed section)**
   - **Systematic reviews.** These reviews should preferably include a meta-analysis. *Maximum extension: 4000 words*.

4. **Case reports**
   They include reports on the effects of a diagnostic or therapeutic method that is useful or relevant in the medical, academic, or scientific field. *Maximum length: 2000 words.*
   These should comply with the *CASE REPORT guidelines* (https://www.care-statement.org/checklist).

Note. The word count for each of these sections excludes the title, abstracts, and keywords, as well as the funding, conflicts of interest and acknowledgments sections. Words included in tables, figures and references are not considered either.

LANGUAGES

Salud Mental receives and publishes only manuscripts in English.

ETHICAL ASPECTS IN PUBLISHING

See Ethical Guidelines for the journal at www.revistasaludmental.gob.mx

AUTHORSHIP

The number of authors will depend on the type of manuscript submitted. The maximum number of authors for original or review articles is eight. Only in the case of multicenter studies will the maximum number of authors be increased to twelve, provided this is justified by the scope of the study.

In the event of collective authorship, the name of the editors or those responsible for the article will be included followed by “and the group...” when all members of the group consider themselves co-authors of the work. If the name of the group is to be included, even if not all its members are considered co-authors, the authors responsible will be mentioned followed by “on behalf of the ...group or “by the...group.” In any case, the names and institutions to which members of the group are affiliated should be included in an appendix at the end of the manuscript.

EDITORIAL GUIDELINES

It is of the utmost importance for authors to consider the following before sending their manuscript:

1. Manuscripts should be written clearly and concisely, with no spelling or grammatical errors.
2. The text should be written in Word format, Times New Roman font, size 12, with double-spacing and 2.5 cm margins on letter size sheets.
3. Pages should be numbered consecutively, beginning with the title page, with the number written in the upper right corner.
4. The first page (showing the title) should contain the following sections in the order mentioned here:
   - *Title of article in Spanish and English*. The title should be descriptive and indicate the main results of the study. *Maximum extension: 25 words.*
   - *Short title in Spanish and English*. *Maximum extension: 6 words.*
   - *Full name of author and co-authors*. The authors must be listed and then an Arabic number must be placed in superscript, indicating the institution to which they are affiliated.
   - *Author ORCID number.* It is a requirement that all authors have their ORCID identification number, which can be obtained at https://orcid.org/register
   - *Author affiliation*. This should be indicated with Arabic numerals and in superscript. Affiliations should be placed immediately after authors’ names (not as footnotes). Affiliations should specify the department, area, institution, city, and country of each author. It is not necessary to indicate the postal address. Institutions must be written in their original language, without translation. If the authors add acronyms, these must be included in the official name. No positions or degrees of the authors (such as doctor, resident, or researcher) should be written.

   . For example:

   Juan José García-Urbina,[1] Héctor Valentín Esquivias Zavala[2]

   [1] Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.
   [2] Departamento de Publicaciones, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz, Ciudad de México, México.

- The **"Correspondence"** section should be placed at the end of the first page, indicating the corresponding author with their postal address, phone and email address. This will be the only author Salud Mental will contact during the process.

  For example:

  Correspondence:
  Juan José García-Urbina
  Dirección de Investigaciones Epidemiológicas y Psicosociales, Instituto Nacional de Psiquiatría Ramón de la Fuente Muñiz.
  Calz. México-Xochimilco 101, San Lorenzo Huipulco, Tlalpan, 14370, Ciudad de México, México.
  Phone: 55 4152-3624
  E-mail: jurb@imp.edu.mx

5. The second page should contain abstracts of the article in English and Spanish. Each abstract should contain a maximum of 250 words.
   - **Abstracts of original articles and systematic reviews** should comprise the following: Introduction, Objective, Method, Results, and Discussion and Conclusion.
   - **Abstracts of Clinical Cases** should comprise Introduction, Objective, Main findings, Interventions, Results, and Discussion and Conclusion.
   - **Keywords.** At the end of each abstract, a minimum of four and a maximum of six keywords should be included, separated by commas and in lower case. Keywords must be the same in English and Spanish. These are used for indexing articles, which is why three of them must be found in the *MeSH (Medical Subject Headings)* (http://www.nlm.nih.gov/mesh/MBrowser.html).
6. The body of the manuscript begins on the third page, which should follow the structure indicated in the abstract:
   - **Introduction (or Background for Narrative Reviews)**. The last paragraph of this section should clearly include the objectives of the review and, if necessary, the hypotheses.
   - **Method.** This should contain the following sections:
     - Study design
     - Subjects/sample description
     - Sites
     - Measurements
     - Procedure
     - Statistical analysis
     - Ethical considerations (See ethical guidelines for publication. Add link)

     In the case of review articles and clinical cases, these sections may be modified in keeping with the PRISMA guideline (systematic reviews) or the CASE REPORT guideline (clinical cases).
   - **Results.** These should be presented in a logical sequence within the text. They can be supported with tables, graphs, and figures.
   - **Discussion and Conclusion**. This section will highlight new and relevant aspects of the study and the conclusions derived from it, as well as the possible implications of its findings and its limitations.
7. After the Discussion and Conclusion section, author statements should be added in the following order:
   - **Funding**. In this section, authors should declare whether the study or the preparation of the manuscript received any type of funding, indicating the name of the entity that provided the funds.

     For example:

     This study was partially funded by CONSEJO NACIONAL DE CIENCIA Y TECNOLOGÍA (No. XXXXXXX).

     If no financial support was received, authors must state it was well.

     For example:

     None.
   - **Conflict of interest.** In this section, authors must declare whether they have conflicts of interest related to their scientific activity. Having a conflict of interest will not necessarily prevent publication of the manuscript. If there is no conflict of interest, the following phrase must be inserted: "The authors declare that they have no conflicts of interest."
   - **Acknowledgments**. If deemed necessary, acknowledgment of the people, centers or entities that have collaborated or supported the research will be mentioned after the previous statements.
8. **References.** Are placed after the authors' declarations (Funding, Conflicts of interest, and Acknowledgements), and must adhere to the ***Publication Guidelines of the American Psychological Association (APA), last edition*** (https://normas-apa.org).
9. **Tables and figures.** *Salud Mental* establishes a maximum total of five graphic elements. The standard requested for tables and figures adheres to the ***Guidelines of the American Psychological Association (APA), last edition*** (https://normas-apa.org). These will be placed in the same document as the manuscript after the references.
   - Tables must contain a title and a note with an explanation of the acronyms used at the bottom.
   - Figures must be submitted in a high resolution format (minimum image size 300 dpi).
   - Titles of the tables and figure captions must be clear, brief, and always have an identifying number. Within the text, the author must indicate in parentheses and capital letters where the graphic elements should be inserted.

     For example:

     The definition of some behavioral patterns was changed (Table 3) so that they were more comprehensible in Spanish and the categories that group such patterns were redefined based on specialized literature. (INSERT TABLE 3 HERE)

COMPLEMENTARY FILES

1. **Authorization letter for Publication**. This should be signed by all the authors and submitted in PDF format. Download the form at http://revistasaludmental.gob.mx/public/Authorization-letter-for-publication.pdf.
2. **Cover letter**. The author should describe the strengths of their scientific contribution, highlighting the scope, originality, and importance of their contribution to the field of mental health. *It is mandatory to mention three national or international reviewers in the field of knowledge of the submitted manuscript, please indicate the full name and email address of each of the reviewers.* This must be uploaded in PDF.

EMPHASIS AND PUNCTUATION

1. Manuscripts should generally avoid footnotes, although they may be considered if essential.
2. Italics should be used to:
   - Highlight foreign words
   - Emphasize popular expressions
   - Mention titles of books, published documents and periodicals
3. Italics can be used to:
   - Highlight significant or important terms when they are first mentioned
   - Highlight a word or sentence within a quote
4. Double quotes should only be used for:
   - Citing paragraphs from other authors within the text
   - Quoting verbatim fragments of the study subjects' words
5. Avoid using double parentheses, in other words, one parenthesis inside another, and use square brackets instead.
6. Long dashes can be used to indicate parenthetical sentences.
7. All punctuation marks must be used correctly. For example, if question marks are used in a Spanish text, the corresponding opening and closing signs must be included together with quotation marks.

MATHEMATICAL AND STATISTICAL FORMULAE

The following points must be considered when results are presented:

1. Write figures from zero to nine in letters and use numbers for figures from 10 onwards.
2. Use numbers with dates and samples, etc.
3. Include confidence intervals in statistical data.
4. Statistical symbols are written in italics (M, SD).
5. Express exact probability to two or three decimal places (for example, p = 0.04; p = 0.002), *with no zero in front of the decimal point*. If it is less than .001, it should be written as follows < 0.001.
6. Leave a space before and after each sign (a + b = c instead of a+b=c).
7. Use periods instead of commas to indicate decimals.

PLEASE CHECK THE FOLLOWING BEFORE SUBMITTING YOUR MANUSCRIPT

Before submitting your manuscript, be sure to attach the requested documentation. Submissions failing to comply with the editorial guidelines will be returned to authors.

1. Manuscript in WORD format
2. Cover letter in PDF format
3. Letter authorizing the use of the article