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Translation and validation of the high-school satisfaction scale (H-SatP Scale) in Peruvian students

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Risk behaviors in schoolchildren can negatively influence and affect their wellbeing. Therefore, it is necessary to have a validated tool to measure student satisfaction in specific areas of the school. The objective of this study was to adapt to Spanish and evaluate the psychometric properties of the H-Sat Scale in Peruvian students. The participants were 691 high school students between 11 and 18 years old (*M* = 13.96, *SD* 1.38) who were administered the H-Sat Scale. The scale was translated into Spanish (H-SatP Scale) using the forward and backward method. The scale presented adequate internal consistency for each of the five factors (ordinal α, CR, ω, and H > 70). Confirmatory analysis confirmed the five-dimensional structure (χ^2 = 620.864, df = 160; CFI = 0.982, TLI = 0.978, RMSEA = 0.065, SRMR = 0.032). This measurement tool could be used for the evaluation of interventions in school and health contexts to assess other aspects of wellbeing necessary for their development in school-age students.

KEYWORDS

high-school, satisfaction, validity, reliability, translation

Introduction

Risky behaviors in schoolchildren can affect physical and mental wellbeing. The school environment affects the health-related behaviors of adolescents both positively and negatively, by establishing behavioral patterns and attitudes, since schools are where they spend the most time. However, little attention is paid to school satisfaction, since it is usually focused on academic performance and little attention is paid to evaluative and affective outcomes (Huebner and McCullough, 2000; Takakura et al., 2010; Wang et al., 2019). The promotion of mental health improvement provides a better life trajectory

for the adolescent and a better performance in society (Becker et al., 2019; Fazel and Kohrt, 2019). Satisfaction with school is an important aspect of quality of life, since schoolchildren have the right to feel good about the institutions in which they find themselves. Schools should be environments where children are supported, valued, and enjoyed, since the level of satisfaction affects psychological wellbeing and school engagement and reduces the rate of absenteeism, behavioral problems, and dropout (Verkuyten and Thijs, 2002; Virtanen et al., 2019).

The environment in which schoolchildren develop influences their adaptation and adjustment, because school experiences and self-perception can affect the course of their lives (Baker et al., 2003; Hong et al., 2022). Schools should be evaluated in a broader sense, i.e., not only on academic outcomes but also on positive non-academic outcomes, such as affective issues, student perception of the quality of school environments, and their psychological wellbeing (Huebner and McCullough, 2000; Huebner et al., 2009; Torres-Zapata et al., 2022). Schooling has presented a narrow vision by downplaying the importance of the student's adaptive sense, since the student must be committed to and enjoy what he/she does (Huebner and McCullough, 2000). School satisfaction has been defined as the cognitive-affective assessment of overall satisfaction with school experiences as a whole (Huebner, 1994; Wong and Siu, 2017). Studies indicate that school satisfaction is an important variable because it is associated with learning, behavior, dropout, absenteeism, teacher-student relationship, engagement, and social environments by incurring positive behavioral changes (Okun et al., 1990; Konu and Rimpelä, 2002; Johnson et al., 2022). Likewise, school satisfaction presents subjective or student-perceived indicators that the general evaluation of overall experiences in schoolchildren. It also presents objective observable measures, which refer to the external school domain such as academic results or the positive relationship between students and teachers (Zullig et al., 2011). Therefore, school satisfaction measures are necessary, as they allow for the evaluation of students in specific areas of the school.

Few instruments have been developed that assess satisfaction in a school context such as the Multidimensional Students' Life Satisfaction Scale (MSLSS) (Huebner, 1994), Quality of School Life (QSL) (Epstein and Mcpartland, 2016), and QLS (Karatzias et al., 2001) that assess students during the school period, however, none of the scales incorporates an assessment of emotional experiences at school. The questionnaire for the evaluation of school wellbeing and identification of risk factors (QBS 8-13) (Tobia and Marzocchi, 2015) has also been developed, which evaluates the wellbeing of children and adolescents from 8 to 13 years of age from three perspectives: the student himself, the parents and teachers. The wellbeing model (Konu et al., 2002) has three dimensions: school conditions, social relationships, means for self-fulfillment, and health status. While the Adolescents' Subjective WellBeing in School Scale (ASWBSS) is a measure that incorporates cognitive (school satisfaction) and affective components (positive and negative affect) in an integral way, since it provides six dimensions (achievement, school management, relationships between teachers-students, peer relations, teaching, and academic learning) that refer to specific subdomains of school life (Tian, 2008). Likewise, the Brief Adolescents' Subjective WellBeing in School Scale (BASWBSS) was developed, which follows the design of the ASWBSS, and involves two dimensions of school life (school satisfaction and affection at school) (Tian et al., 2014).

Unlike the other measures, the H-Sat Scale is a brief and multidimensional measure, which presents indicators of satisfaction with life and adds areas related to the choice and usefulness of the school for their professional career. The College Satisfaction Scale (CSS) (Lodi et al., 2017) was first developed in Italian university students, later it was adapted and validated in Italian high school students (H-Sat Scale) by Lodi et al. (2019). This scale evaluates five areas, identified from a review of the literature: appropriateness of choice, quality of school services, relationships with classmates, effectiveness of their study habits, and usefulness for the future career. The psychometric results were adequate and suggest being applied in other contexts and evaluated with other psychological variables.

To date, there is no measure in Spanish that assesses satisfaction with school validated in a school population. Therefore, it is necessary to have measures that show validity and reliability to measure satisfaction with secondary school in Peru or in other Latin American countries. For this reason, this study aimed to adapt and evaluate the psychometric properties of the Spanish version of the H-Sat Scale in Peruvian students.

Methodology

Study design and participants

The study is methodological. The participants were secondary school students from the city of Metropolitan Lima, Peru. The sample size was estimated using the Soper software (Soper, 2020) that considers the anticipated effect size ($\lambda = 0.3$), the statistical power level ($1-\beta = 0.95$), and the desired statistical significance ($\alpha = 0.05$). According to the number of variables observed and latent in the model, resulting in a minimum required sample of 223 participants. A non-probabilistic sample was carried out for the selection of the sample. The inclusion criteria were: (1) to be enrolled in the selected institutions, (2) to have been born in Peru, and (3) to accept informed consent. Students who did not provide informed consent were

not considered. The final sample consisted of a total of 691 schoolchildren from five Peruvian educational institutions.

Instruments

La H-Sat Scale (Lodi et al., 2019) was adapted from the Italian College Satisfaction Scale (CSS) (Lodi et al., 2017). It is composed of 20 items that assess student satisfaction in five dimensions through a five-point Likert scale (1 = not at all, 2 = a little, 3 = somewhat, 4 = very, and 5 = completely). The items correspond to 5 dimensions of school satisfaction: appropriateness of choice (CH), quality of school services (SE), relationships with classmates (RE), effectiveness of study habits (TS), and usefulness for a future career (AC). This instrument has good psychometric properties, in terms of validity and internal consistency for the five subscales (CH = α 0.86; SE = α 0.76; RE = α 0.88; TS = α 0.87; AC = α 0.92).

The English to Spanish translation of the H-Sat was carried out using cultural adaptation-based procedures (Beaton et al., 2000).

1. The H-Sat was initially translated independently into Spanish by two bilingual native Spanish speakers. The versions were compared, and an initial version was developed.
2. The Spanish version was again independently translated into English by two Native Americans who speak Spanish but were not familiar with H-Sat.
3. Subsequently, a panel of two educators and two psychologists reviewed the Spanish-translated version and the translated versions and developed the preliminary version of the H-SatP.
4. The preliminary version was administered to a focus group of 15 students from first to fifth grade, to assess comprehension and readability. Apparent comprehension problems were identified; therefore, linguistic changes were made in the final Spanish version (**Table 1**).

Data analysis

Confirmatory factor analysis (CFA), descriptive analysis of the H-SatP items by calculating the mean, standard deviation, skewness, kurtosis, and corrected item test correlation using the packages "*lavan*," "*psych*," and "*Sem Tools*" of R software. For skewness (g1) and kurtosis (g2), values between ± 1.5 were considered adequate (Pérez and Medrano, 2010), and corrected item-test correlation analysis was considered for item removal in case of r (i-tc) ≤ 0.2 or multicollinearity (i-tc) ≤ 0.2 (Kline, 2016) and internal consistency were estimated using ordinal α coefficient. The five-factor structure was confirmed from a previous study (Lodi et al., 2019) and the analysis was performed using the weighted least-square method (WLSM) due to the categorical nature of the items, which also allows the detection of structural relationships with slight or moderate asymmetry (Brown, 2015; Li, 2016). The chi-square test (χ^2), confirmatory fit index (CFI ≥ 0.95), Tucker–Lewis index (CFI ≥ 0.95) (Schumacker and Lomax, 2016), the root-mean-square error of approximation (RMSEA ≤ 0.05), and the standardized root-mean-square residuals (SRMR ≤ 0.05) were considered for the evaluation of the fit models (Kline, 2016). The evidence of convergent validity was obtained from the Average Variance Extracted (AVE) average variance extracted from the factor, which considers quantities greater than 0.50 as satisfactory (Fornell and Larcker, 1981). In addition, item permanence was determined by means of factor loadings (λ > 0.70) (Dominguez-Lara, 2018).

The internal consistency was analyzed through the ordinal α coefficient (Pascual-Ferrá and Beatty, 2015) composite reliability (CR) (Nunnally and Bernstein, 2010), the coefficient ω (McDonald, 1999), and H (Hancock and Mueller, 2001) expecting high magnitudes (> 0.80) (Raykov and Hancock, 2005; Dominguez-Lara, 2016).

Procedure

The study was approved by the ethics committee of the Universidad Peruana Unión (CE-EPG 000016). Authorization was requested from the directors of three educational institutions to proceed with the collection of information. The evaluation dates were set, and the students' email addresses were accessed, since the students were at home because of the confinement due to the Covid-19 pandemic, their participation was requested via email. institutional. Based on this, a questionnaire was sent through an online Microsoft Forms form in which the researchers explained the research protocol to the parents or guardians, after acceptance by their relatives, the students had access to informed consent. The questionnaire was completed by those students who voluntarily agreed to participate in the study and whose parents approved or signed the informed consent form. The study was conducted from May 30 to June 23, 2021.

Results

Demographic characteristics

The ages of the students ranged between 11 and 18 years (M = 13.96, SD 1.38), where 50.4% were men and 49.6% were women. On the other hand, 24.7% were in first grade or year of high school, 22.3% in second grade, 19.7% in third grade, 21.6% in fourth grade, and only 11.7% in fifth grade.

Descriptive statistics of H-Sat items

The descriptive statistics are shown in Table 1, where item 10 (M = 4.12) has the highest mean, while the lowest mean was found in item 13 (M = 3.63). This same item 13 (SD = 1.22) showed greater dispersion with respect to variability. Skewness (g1) and kurtosis (g2) fluctuated between values below ± 1.5 in all items, indicating a normal multivariate distribution. Likewise, the scale presents item-total correlations between 0.66 and 0.86, higher than the acceptable limit of 0.30, indicating a high homogeneity and the internal consistency for each item was acceptable (>0.95) (see Table 1).

Evidence of validity related to internal structure

The CFA was performed by hypothesizing the five-factor model initially proposed by Lodi et al. (2019). The goodness-of-fit indices for the total sample were [χ^2 = 620.864, gl = 160; CFI = 0.982, TLI = 0.978, RMSEA = 0.065 (90% CI: 0.059–0.070), SRMR = 0.032], indicating that the Peruvian version model fits the observed data adequately. In addition, all the λ were greater than 0.70 and the AVE values are adequate (AVE > 0.50), indicating that the latent factors are adequately explained by their observed variables. Furthermore, in terms of reliability, the values obtained were high (ordinal α, CR, ω and H > 70) for all dimensions (see Table 2).

Discussion

School satisfaction, according to current positive approaches, is considered an important aspect of adolescents' wellbeing and quality of life (Baker and Maupin, 2009). It is therefore crucial for schools to create appropriate conditions and strategies for students to experience enthusiasm, happiness, and pleasant experiences, which are reflected in a positive attitude toward school and better overall psychological wellbeing (Saminathen et al., 2019). Therefore, it is necessary to have a validated and appropriate instrument to measure and monitor students' school satisfaction levels. The aim of the present research was to translate and adapt the High-School Satisfaction Scale (H-Sat Scale) to Peruvian Spanish (H-SatP) and to evaluate its psychometric properties to measure school satisfaction from a multidimensional perspective.

TABLE 1 Descriptive statistics and reliability.

Item	I am satisfied:	*M*	*SD*	g_1	g_2	r.cor	α
CH1	For choosing this school.	4.09	0.94	−0.87	0.19	0.73	0.96
SE2	With classes.	3.67	1.03	−0.33	−0.62	0.74	0.96
RE3	With my classmates' relationships.	3.72	1.08	−0.49	−0.59	0.62	0.96
TS4	With my way of studying.	3.70	1.09	−0.52	−0.49	0.74	0.96
AC5	Because I believe that my courses of study will be useful for my academic and/or professional future.	4.11	1.06	−1.09	0.46	0.80	0.96
CH6	Because I like what I study in this school.	3.95	0.96	−0.74	0.01	0.86	0.96
SE7	With my school's virtual/technological resources.	3.68	1.11	−0.51	−0.62	0.68	0.96
RE8	Because I have classmates with whom I feel comfortable studying.	3.84	1.13	−0.74	−0.31	0.71	0.96
TS9	Of the academic goals I am achieving.	3.88	1.04	−0.67	−0.24	0.83	0.96
AC10	Because I believe that my studies will have a positive effect on my future educational and/or professional career.	4.12	1.00	−1.06	0.56	0.82	0.96
CH11	For starting the school year.	3.91	1.02	−0.79	0.15	0.77	0.96
SE12	With quality of school services (tutoring, sports, among others)	3.80	1.08	−0.67	−0.22	0.80	0.96
RE13	Because I can count on the help of my classmates.	3.63	1.22	−0.52	−0.74	0.66	0.96
TS14	Of my motivation for studying.	3.82	1.07	−0.61	−0.45	0.81	0.96
AC15	Because this school is the basis for my future professional career.	3.98	1.10	−0.9	0.01	0.84	0.96
CH16	Because, after all, this school seems to be tailor-made for me.	3.71	1.09	−0.48	−0.61	0.80	0.96
SE17	With the availability of those who work in the school.	3.86	1.00	−0.61	−0.33	0.77	0.96
RE18	For the good friendships with my classmates.	3.84	1.18	−0.8	−0.33	0.67	0.96
TS19	With my academic performance.	3.73	1.03	−0.47	−0.55	0.69	0.96
AC20	Because attending this school will be helpful in finding future employment.	3.95	1.09	−0.84	−0.1	0.81	0.96

CH, suitability of choice; SE, quality of school services; RE, relations with classmates; TS, effectiveness of study habits; AC, utility for a future career; α, ordinal α .

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TABLE 2 Factor loadings and reliability.

	F_1 (λ)	F_2 (λ)	F_3 (λ)	F_4 (λ)	F_5 (λ)
CH1	0.753				
CH6	0.888				
CH11	0.796				
CH16	0.820				
SE2		0.776			
SE7		0.712			
SE12		0.841			
SE17		0.812			
RE3			0.791		
RE8			0.904		
RE13			0.837		
RE18			0.859		
TS4				0.798	
TS9				0.906	
TS14				0.883	
TS19				0.749	
AC5					0.880
AC10					0.903
AC15					0.915
AC20					0.881
AVE	0.67	0.62	0.72	0.70	0.80
Ordinal α	0.89	0.86	0.91	0.90	0.94
CR	0.89	0.87	0.91	0.90	0.94
ω	0.89	0.87	0.91	0.90	0.94
H	0.90	0.87	0.92	0.92	0.94

λ, factor loadings; F1, suitability of choice (CH); F2, quality of school services (SE); F3, relations with classmates (RE); F4, effectiveness of study habits (TS); F5, utility for a future career (AC); composite reliability (CR), ω, omega; H, H-coefficient; AVE, average variance extracted.

Other instruments that measure school satisfaction mostly consider three dimensions: educational quality, teacher support and family support (Rodríguez et al., 2020), or self-determination, including autonomy, competence, and relatedness (Ryan and Deci, 2017). These instruments focus on the student's perception of his or her environment such as teacher and family and the influence they exert on his or her satisfaction. The H-Sat Scale is a reliable, multidimensional, domain-specific measure of students' school satisfaction and has been tested for its relationships with overall life satisfaction. In addition to the personal aspects of satisfaction, the dimensions covered by this scale include satisfaction with their career goals and projects due to the school they attended in terms of programs, knowledge, and skills acquired (Lodi et al., 2019).

Future studies could use the H-Sat Scale in different countries to define whether there are cultural differences with respect to the structural dimensions of school satisfaction and to confirm the psychometric properties of the instrument. The original authors of the H-Sat scale recommended reviewing cultural differences with respect to the structural dimensions of school satisfaction and confirming the psychometric properties of the instrument (Lodi et al., 2019).

In relation to the confirmatory factor analysis, the results were consistent with the original structure. The high magnitudes of the factor loadings were moderate and high and indicate a robust factor structure, with adequate indicators for the construct of satisfaction with high school. Likewise, the values of the Spanish version were close to and higher than the Italian version of the H-SatP. The version produced coefficients of reliability ordinal α, composite reliability (CR), omega (ω), and coefficient H higher than recommended (> 0.70), these results are due to the fact that the coefficients are evaluated through the factor loadings of the latent variables. Therefore, the H-SatP scale is a reliable tool, supporting previous studies. The psychometric results supported the existing version and indicate that the 20 items of the H-SatP are grouped in a five-factor structure: (a) appropriateness of choice, (b) quality of school services, (c) relationships with classmates, (d) effectiveness of study habits, and (e) usefulness for a future career (Lodi et al., 2019).

The first factor, appropriateness of choice, relates to the student's perception of satisfaction based on the evaluation of the service received, whether or not their expectations were met with the services offered (Petruzzellis and Romanazzi, 2010). In other words, students assume the role of the customer who decides to choose the product and whose satisfaction will be reflected in the fulfillment of their expectations. The managers of educational institutions should be aware of the factors that improve the perception of student satisfaction, so that they can provide better services and improve existing ones. Regarding the second factor, different studies show the influence of school service quality on school satisfaction (Patrón-Cortés, 2021). Service quality in turn encompasses aspects such as reliability, security, empathy, responsiveness, and tangibles (Zeithaml et al., 2010). Of all these, reliability is critical in the education sector, as it means receiving the service as promised (Usman, 2010). Therefore, to ensure school satisfaction it is important to make provisions for immediate corrective actions when faults occur, to regain students' confidence and ensure their satisfaction.

Feeling peer support and perceiving a positive school environment are aspects considered in the third factor. A good relationship with classmates is a factor that promotes school wellbeing (Ruvalcaba-Romero et al., 2018). A starting point for the acquisition of behavioral patterns and the establishment of emotional state during adolescence is the quality of relationships experienced in school settings (Plazas et al., 2010). Achieving satisfactory relationships with peers is associated with greater emotional wellbeing and satisfaction with life, which is why social interactions represent one of the most significant school relationships (Uslu and Gizir, 2017). On the other hand, the relationship between academic satisfaction and the effectiveness of study habits can be confirmed by previous studies (Alzahrani et al., 2018). The positive relationship between study habits and

academic achievement would reflect even better the satisfaction experienced by schoolchildren. The last factor indicates the positive relationship between usefulness for a future career and school satisfaction; this relationship was confirmed in studies that also related accumulated grades, level of achievement, and satisfaction (El-Hilali et al., 2015). The perceived usefulness of school studies for future university studies should be an aspect to be addressed in orientations and workshops by educational institutions, so that students can confirm the importance of their school studies for their professional future and in turn guarantee academic satisfaction.

The promotion of wellness in school practice should have a growing commitment to service delivery, students should benefit from programs that allow the improvement of their skills to develop competencies, and that contribute to a better social climate in schools. In that sense, the H-SatP scale could be used in environments with complex and multifaceted school entities to understand the potentially reciprocal and hierarchical nature embedded in school environments. The advantage of this scale is its multidimensionality despite having a reduced number of items. In addition, it highlights the fundamental role of the school's influence in achieving student wellbeing. Therefore, it is also a useful instrument for schools as a self-evaluation tool in the quality of service provided.

Despite being the first attempt to evaluate the psychometric properties of H-SatP, it had limitations such as the sample was taken by convenience. Test-retest reliability was not considered, nor was factorial invariance, and it was a cross-sectional study. Despite the limitations, the results are important for the educational part, given that from a theoretical point of view the study provides a multidimensional tool. In addition, it could be used for the evaluation of interventions in school and health contexts to assess other aspects of wellbeing necessary for their development in school-age students.

Conclusion

The Spanish version of the H-SatP has adequate psychometric evidence. This Spanish version allows us to consider psycholinguistic variations in order to have a culturally appropriate interpretation.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The study was approved by the Ethics Committee of the Universidad Peruana Unión (CE-EPG 000016). Written informed consent to participate in this study was provided by the participants' or their legal guardian/next of kin.

Author contributions

WM-G, PR, and JG-V were in charge of the conceptualization. JS, MM-G, and SH-V participated in the development of the methodology. WM-G and PR participated in the development of the software. WM-G, MM-G, and PR contributed to the formal analysis and research. PR, WM-G, and SH-V carried out writing, review, and editing of the first draft. MM-G, JS, and JG-V carried out visualization and supervision. All authors approved the final version of the manuscript.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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