

Psychosocial Intervention



Validation of the Multidimensional Scale of Perceived Social Support (MSPSS) in a Representative Sample of Adolescents: Links with Well-being, Mental Health, and Suicidal Behavior

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ABSTRACT

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Keywords: Social support Mental health Depression Well-being Validation Adolescence *Objective:* Social support is understood as a protective factor for mental health and emotional well-being, especially at school. The Multidimensional Scale of Perceived Social Support (MSPSS) is one of the most widely used tools worldwide to assess this construct. The main purpose of the present study was to validate the scores of the MSPSS in a large sample of non-clinical adolescents. *Method:* The sample consisted of 2,235 compulsory secondary education students in Spain (M_{age} = 14.49, SD_{age} = 1.76, age range 12-18 years, 52% female) obtained by stratified random sampling. *Results:* The model, consisting of three interrelated factors, showed the most adequate goodness-of-fit indices. The results support the measurement invariance of the MSPSS across sex, age, and sexual orientation. McDonald's omega reliability indices between .862-.934 were obtained. MSPSS scores were significantly and negatively associated with emotional and behavioral problems, depression, and suicidal behavior, and positively associated with life satisfaction. *Conclusions:* The MSPSS is a reliable instrument to assess social support through self-report in school settings. In this regard, assessing social support using this tool is particularly useful in programs promoting well-being or preventing mental health disorders.

Adolescence is a transitional period that involves physical, psychological, and social transformations (Shek et al., 2019). In terms of the social sphere, adolescents begin to demand higher autonomy and modify their relationship with their parents, although these continue to be socializing agents during this stage (Kilford et al., 2016). Additionally, friendships play a significant role in their search for independence (Tomé et al., 2012). Furthermore, adolescence brings other potential social stressors such as conflicts with family members and peers or pressure regarding academic performance (Pettit et al., 2011; UNICEF, 2011). Thus, it is understood that social support is composed of instrumental and/or expressive provisions, real and perceived, provided by the community, social networks, and close friends (Lin et al., 1986). Following this definition, social support can serve instrumental, informative, emotional, or companionship functions and can be perceived from both formal (e.g., institutions or organizations) and informal sources (e.g., family or friends).

Perceived social support may fluctuate during critical transitions in the school stage, especially in the transition to secondary education. In this context, depending on the educational state, the type of perceived social support may have a greater impact on children's well-being (Evans, et al., 2018; Martínez et al., 2011; J. W. Pettit et al., 2011). In early stages, family and teacher support seems to be the most relevant, while in later stages peer social support seems to be the most relevant (Evans et al., 2018; Martinot et al., 2022). Gender also plays a role in perceived social support (Martinot et al., 2022). Generally, girls seem to perceive greater social support (e.g., Yalcin-Siedentopf et al., 2021), although there is no consensus in this regard (e.g., McLean et al., 2023). Some studies elaborate on this idea, indicating that the differences could be due to the fact that boys often engage in larger group activities that are more competitive or rough in nature, while girls are more likely to form smaller, more connected relationships (Maccoby, 2002). The literature reports differences in perceived social support among sexual minorities (Leung et al., 2022; Poštuvan et al., 2019). In this regard, sexual orientation is associated with discrimination by society and school peers, which in turn affects the perceived social support of minors (Craig & Smith, 2011; McConnell et al., 2016; Muñoz-Plaza et al., 2002). Heterosexual youth generally report higher levels of perceived social support compared to their non-heterosexual peers (Firk et al., 2023). For all other groups, it appears that bisexual minors or those who do not openly communicate their identity (or it is not understood by the group) are those who perceive less social support, while homosexual

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minors who openly communicate it would have higher perceptions of social support than bisexual minors (Chang et al., 2021; Ehlke et al., 2020; Friedman et al., 2014; Pina et al., 2021).

Several authors and institutions have identified social support as a protective factor for mental health and psychological wellbeing (Rodríguez-Fernández et al., 2016) and it may play a role in mitigating psychological distress (Aranda & Pando, 2013; World Health Organization [WHO, 2003]). However, it seems that the perception of social support is more related to health, regardless of the structure or network available (Poudel et al., 2020). In this context, perceived social support refers to the quality and effectiveness of the support received. Specifically in minors, social support has a positive and significant impact on academic performance and motivation (Chen et al., 2023; Shao et al., 2024). Furthermore, social support is positively associated with psychological well-being (Agbaria & Bdier, 2020) and selfesteem (Simón et al., 2017), and negatively associated with anxiety (Fonseca-Pedrero, Díez-Gómez, Pérez-Albéniz, Lucas-Molina, et al., 2023), depression (Beck et al., 2021), stress (Mishra, 2020), school violence (Despoti et al., 2021), and suicidal behavior, especially among sexual minority groups (Pérez-Albéniz et al., 2023; Wang et al., 2021). Social support is a predictor of perceived loneliness, this relationship being stronger for younger people (Schwartz-Mette et al., 2020). Loneliness, in turn, is a predictor of suicidal behavior (McClelland et al., 2020). Meanwhile, high perception of social support is associated with less depressive symptomatology or anxiety in the medium and long term (Karatekin & Ahluwalia, 2020; Scardera et al., 2020). In short, social support has been shown to be a relevant factor from the point of view of prevention/ intervention in the well-being for children and adolescents (Bauer et al., 2021: Fang et al., 2024).

A number of instruments evaluating social support in minors can be found in the literature, among the most prominent being the Family and Friends Social Support Scale (AFA-R; Ramírez & Hernández, 2014), the Children and Adolescent Social Support Scale (CASSS, Malecki et al., 2002), and the Multidimensional Perceived Social Support Scale (MSPSS; Zimet et al., 1988). The MSPSS is the most widely used self-report worldwide, with numerous primary studies that have used it to assess social support across various contexts and populations (Dambi et al., 2018). The MSPSS was originally developed by Zimet et al. in 1988 in North Carolina. The authors achieved an instrument made of 12 items (α = .88) grouped in three factors, i.e., Significant Other (α = .91), Family (α = .87), and Friends (α = .85). Significantly higher scores were observed in women and significant negative correlations with anxiety and depression.

Since then, it has been validated in more than 20 countries across multiple languages and populations (Dambi et al., 2018). In adolescents, it has been validated in China (Cheng & Chan, 2004; Chou, 2000). On the one hand, Chou (2000) developed a 12-item instrument (α = .89) with a 2-factor structure: Friends (α = .94) and Family (α = .86). The scale showed a significant negative correlation with depression and anxiety, and positive and significant correlations with Lubben Social Network Scale. On the other hand, Cheng and Chan (2004) tested 2-factor and 3-factor models and ended up with a 12-item, 3-factor instrument: Family, Friends, and Significant Others. In Korea, Park et al. (2022) validated a structure similar to the original. In the USA Ramaswamy et al. (2009) obtained a 12-item, 3-factor version with adequate fit (χ^2 = 148.99, p = .00, CFI = .94, and RMSEA = .06). In Ghana's validation Wilson et al. (2017) obtained a 12-item, 3-factor. In Nigerian population, Aloba et al. (2019) obtained a 12-item, 3-factor scale. In Indonesia (Laksmita et al., 2020) the original 3-factor, 12-item, in Peru (Merino-Soto et al., 2022) unidimensional CFA, CFA correlated factors, CFA bifactor, ESEM correlated factors and ESEM bifactor models were tested. Finally, the first validation of the MSPSS to Spanish

was conducted by Trejos-Herrera et al. (2018) in a Colombian adolescent population. In this study, the authors obtained a 12item instrument with adequate psychometric properties and the 3 original factors correlated with each other. Moreover, to our knowledge, studies that take into account measurement invariance as a function of age, sex, or sexual orientation are infrequent or nonexistent (Dambi et al., 2018).

To date, we have little information about the reliability and validity of the MSPSS scores in large samples of the general adolescent population. To the best of our knowledge, no previous studies have carried out a validation of the scale in minors in Spain, nor has the relationship of this tool with psychological well-being, mental health, and suicidal behavior been analyzed. Moreover, in view of its possible influence on the perception of social support, it is essential to validate the instrument's measurement invariance across sex, age, and sexual orientation, as supported by the evidence presented earlier in this manuscript.

In this context, the main objective of the present study is to analyze the psychometric properties of the MSPSS scores in a large representative sample of Spanish school adolescents. Specifically, it was proposed: a) to examine the validity evidence based on internal structure of the MSPSS; b) to examine measurement invariance based on age, sex, and sexual orientation; c) to estimate the reliability of the MSPSS scores; and d) to analyze the association of MSPSS scores with indicators of well-being, mental health, and suicidal behaviors. It is expected to find a 3-factor model with adequate goodness-of-fit indices, as indicated in previous literature. Regarding measurement invariance, it is expected to confirm invariance across sex, while exploring invariance across age and sexual orientation, for which no established findings currently exist. Additionally, the scores of the MSPSS will yield adequate reliability, with scores correlating meaningfully with other socioemotional variables, such as depressive symptomatology, emotional and behavioral problems, and suicidal behavior.

Method

Participants

The sample was selected through a stratified random cluster sampling of the student population (31,598 students) in La Rioja. Specifically, the sample was stratified into three geographical regions (Upper-, Middle-, and Lower Rioja) and nine educational stages, i.e., basic vocational training, intermediate vocational training, higher vocational training, ESO first- (7th Grade, Middle School), second- (8th Grade, Middle School), third- (9th Grade, High School), and fourth grade (10th Grade, High School), and Bachillerato first- (11th Grade, High School) and 2nd grade (12th Grade, High School)]. The sample included students from both public and private compulsory secondary schools and vocational training centers, as well as different socioeconomic levels. As for deciding the sample size that was needed, a confidence level of 99% and an assumed error of 2.5% were assumed, resulting in a total of 2,457 students.

The initial sample consisted of 2,640 students from 34 educational centers and 98 classrooms. The following exclusion criteria were applied: a) scoring two or more points on the Oviedo Response Infrequency Scale (n = 175), and b) being older than 18 years (n = 247). The final sample consisted of 2,218 students, including 1,045 (46.8%) boys, 1,183 (52.9%) girls, and 7 (0.3%) intersex individuals. Regarding sexual orientation, 1,054 were heterosexual (78.3%), 37 gay/lesbian (1.7%), 326 bisexual (14.6%), 57 asexual (2.6%), and 66 questioning (3%). The mean age was 14.49 years (SD = 1.76, range 12-18 years); 90.9% identified themselves as Spanish.

Instruments

- **Sociodemographic Variables.** Items from the ENSE survey (National Health Survey of Spain, 2017) by the Ministry of Health, Consumer Affairs, and Social Welfare were selected to assess demographic variables including age, sex, and nationality.

- Sexual Orientation. A modified version of the Kinsey scale (Kinsey et al., 1948) was used to examine sexual orientation. This scale is a widely used index that designates a sexual continuum ranging from the attraction to the opposite sex to the attraction exclusively to the same sex, with degrees of non-exclusivity between these poles. Participants were presented with a statement "You are usually physically and romantically attracted..." and were asked to select one option among the following: 1) always to boys, 2) mostly to boys, and sometimes to girls, 3) equally to boys and girls, 4) mostly to girls, and sometimes to boys, 5) always to girls, 6) I do not feel physical attraction to anyone, and 7) I am not sure. Although some researchers (e.g., Haslam, 1997; Savin-Williams, 2014) claim that sexual orientation is better represented by a continuum, for methodological reasons (too many categories could limit the sample within each category), the analyses were conducted by defining the sexual orientation variable including five patterns of sexual attraction: heterosexual (option 1 for girls and 5 for boys), gay/lesbian (1 for boys and 5 for girls), bisexual (options 2, 3, and 4 for both sexes), asexual (option 6 for both sexes), and questioning (7 for both sexes).

- Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). The MSPSS consists of 12 questions designed to assess perceived social support. The response format ranges from 1 (*completely disagree*) to 7 (*completely agree*). The original psychometric study yielded 3 dimensions: Friends Social Support (4 items), Family Social Support (4 items), and Significant Others Social Support (4 items). A high score indicates greater social support. This scale was translated and validated into Spanish by Trejos-Herrera et al. (2018). For the present study, possible cultural differences in the wording of the items were examined by various experts, concluding that no changes were needed.

- Patient Health Questionnaire-9 (PHQ-9; Kroenke et al., 2001; Spitzer et al., 1999). The PHQ-9 is a 9-item self-reported questionnaire, with a response format on the frequency of symptoms related to depressive symptomatology ranging from 0 (*not at all*) to 3 (*nearly every day*). In this study, the version by Fonseca-Pedrero, Díez-Gómez, Pérez-Albéniz, Al-Halabí, et al. (2023) was used, with an internal consistency of .87 according to McDonald's omega.

- Strengths and Difficulties Questionnaire (SDQ: Goodman, 1997). The SDQ is a questionnaire comprising 25 statements that assess different emotional and behavioral problems related to mental health. It consists of five factors with 5 items each: Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial Behavior. The response format ranges from 0 (*no, never*) to 2 (*yes, always*). In the present study, the version by Ortuño-Sierra et al. (2022) was used. The internal consistency in our sample was $\omega = .73$ for the global scale, $\omega = .77$ for Emotional Symptoms, $\omega = .67$ for Conduct Problems, $\omega = .60$ for Peer Problems, $\omega = .68$ for Hyperactivity, and $\omega = .63$ for Prosocial Behavior.

- **Personal Well-being Index–School Children** (PWI-SC; Cummins & Lau, 2005; Tomyn et al., 2014). The adaptation to Spanish of the PWI-SC was used (Pérez-Albéniz et al., 2021). It was developed to assess subjective well-being in school-aged children and adolescents. The PWI-SC consists of a total of 8 items where response options range from 0 (*very dissatisfied*) to 10 (*very satisfied*). PWI-SC items evaluate, in a relatively generic and abstract way, subjective satisfaction with a specific area of life. In this study, the first item of the Spanish validated version of the PWI-SC was used, which evaluates life as a whole: "How do you feel about your life in general?". Additionally, and following the original authors (Cummins & Lau, 2005), the PWI includes an additional item that evaluates how the respondent feels about their own life, providing a measure of general well-being. This item is not part of the PWI and should be analyzed as a separate variable. In the present study, only this indicator was used.

- SENTIA-Brief: Scale for the Assessment of Suicidal Behavior in Adolescents (Díez-Gómez et al., 2021). SENTIA-Brief is the reduced version of SENTIA (Díez-Gómez et al., 2020), a self-reported questionnaire that assesses suicidal behavior in adolescents. The brief version consists of 5 items that assess suicidal ideation, suicidal communication, and suicidal acts. The response format is dichotomous (yes/no). The internal consistency obtained in the sample was adequate (McDonald's omega .83).

- The School Belonging Scale (PERT; Bradshaw, 2022; Bradshaw, Waasdorp, et al., 2014). To evaluate students' sense of belonging to the school, fourteen items from the MDS3, created by the Johns Hopkins Center for Youth Violence Prevention (Bradshaw, 2022; Bradshaw, Debnam, et al., 2014), were utilized. These items serve as valid indicators of school connectedness. Responses are measured on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). The fourteen items are divided into three distinct dimensions: Student Connectedness, Connection to Teachers, and Whole-school Connectedness. The scale demonstrated good reliability in previous studies, with Cronbach's alpha values ranging from .82 to .87 (Bradshaw, Waasdorp, et al., 2014). This study used the Spanish translation, validated for adolescent use (Lucas-Molina et al., 2025; Lucas-Molina et al., 2022). The total score for School Belonging showed good internal consistency, estimated with McDonald's omega, with a coefficient of .89. For the Student Connectedness factor, the coefficient was .80, while for the Connection to Teachers factor, it was .85. Similarly, the Whole-school Connectedness factor also displayed a coefficient of .85.

- Oviedo Response Infrequency Scale (INF-OV-R; Fonseca-Pedrero et al., 2019). The INF-OV-R scale was administered with the aim of detecting random, pseudo-random, or dishonest responses in participants. It consists of 10 items with dichotomous response options (yes/no). As mentioned previously, all cases where 2 or more incorrect responses had been provided to this questionnaire were excluded.

Procedure

The present study has obtained approval from the Clinical Research Ethics Committee of La Rioja (CEImLAR, PI 552) and is part of a project called PSICE (Evidence-based Psychology in Educational Contexts) (ClinicalTrial.gov. Ref: NCT05322642) (Fonseca-Pedrero, Díez-Gómez, Pérez-Albéniz, Al-Halabi, et al., 2023; Fonseca-Pedrero, Pérez-Albéniz, et al., 2023). Prior to data collection, informed consent was obtained from the participants' families. Students were informed of the confidential and voluntary nature of their participation. Regarding the assessment, it was conducted collectively (groups of 10 to 30 participants) on school computers. The completion of the questionnaires was supervised by a member of the research group trained in a standard data collection protocol. The response rate was approximately 100% thanks to the collaboration of the Ministry of Education of La Rioja.

Data Analysis

Firstly, descriptive statistics were employed for all the items of the MSPSS. Several confirmatory factor analyses (CFAs) were then conducted to calculate the internal structure of MSPSS scores, testing the following dimensional models: a) a unidimensional model (MSPSS-1F); b) the original model proposed by Zimet et al. (1988) and the version used in this study (Trejos-Herrera et al., 2018) with three related dimensions (MSPSS-3F); c) a bifactor model identifying a latent dimension and the three specific dimensions of the original model (MSPSS-B-3F); d) an exploratory structural

Table 1. Descriptive Statistics of the Multidimensional Scale of I	Perceived Social Support (MSPSS) in the Sample
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Ítem	Mean	SD	Skewness	Kurtosis	Normality Kolmogorov-Smirnov/ Shapiro-Wilk
1. There is a special person who is around when I am in need [<i>Cuando necesito algo, sé que hay alguien que me puede ayudar</i>]	6.036	1.40	-1.685	2.427	.298*/.719*
2. There is a special person with whorm I can share joys and sorrows [<i>Cuando tengo penas o alegrías, hay alguien que me puede ayudar</i>]	5.962	1.43	-1.568	1.983	.790*/.742*
3. My family really tries to help me [<i>Tengo la seguridad de que mi familia trata de ayudarme</i>]	6.207	1.40	-2.033	3.607	.366*/.629*
4. I get the emotional help and support I need from my family [<i>Mi familia me da la ayuda y apoyo emocional que requiero</i>]	5.851	1.60	-1.468	1.286	.281*/.738*
5. I have a special person who is a real source of comfort to me [Hay una persona que me ofrece consuelo cuando lo necesito]	6.155	1.40	-2.036	3.811	.328*/.665*
6. My friends really try to help me [<i>Tengo la seguridad de que mis amigos y amigas tratan de ayudarme</i>]	5.938	1.39	-1.593	2.240	.260*/.755*
7. I can count on my friends when things go wrong [<i>Puedo contar con mis amigos y amigas cuando tengo problemas</i>]	5.927	1.46	-1.587	2.041	.264*/.744*
8. I can talk about my problemas with my family [<i>Puedo conversar de mis problemas con mi familia</i>]	5.355	1.84	-0.970	-0.161	.255*/.823*
9. I have Friends with whom I can share my joys and sorrows [<i>Cuando tengo alegrías o penas, puedo compartirlas con mis amigos y amigas</i>]	5.906	1.44	-1.522	1.860	.257*/.757*
10. There is special person in my life who cares about my feelings [<i>Hay una persona que se interesa por lo que yo siento</i>]	6.709	1.45	-1.861	3.081	.321*/.682*
11. My family is willing make decisions [<i>Mi familia me ayuda a tomar decisiones</i>]	5.740	1.58	-1.306	0.927	.245*/.782*
12. I can talk about my problems with my friends [<i>Puedo conversar de mis problemas con mis amigos y amigas</i>]	2.369	1.53	-1.436	1.445	.250*/.771*
* <i>p</i> < .05.					

equation modeling with three factors (MSPSS-ESEM); and e) a bifactor exploratory structural equation modeling (MSPSS-B-ESEM). The estimator used was weighted least square mean and variance (WLSMV) with polychoric correlations.

Goodness-of-fit indicators such as chi-square (χ^2), comparative fit index (CFI), Tucker-Lewis index (TLI), root mean square error of approximation (RMSEA) and its 90% confidence interval, and standardized root mean square residual (SRMR) were used. Model fit criteria assumed RMSEA equal to or less than .08, and CFI and TLI equal to or greater than .90 (Kline, 2015). These indicators have been complemented with McDonald's omega (ω) and Cronbach's alpha (α).

Once the model showing the best fit was selected, measurement invariance was checked through successive multigroup CFAs based on age, sex, and sexual orientation. No previous studies have been found that explore invariance and/or differences based on sexual orientation, being this the first study to do so. This contrasts with the available literature on gender and age (Aloba et al., 2019; Cheng & Chan, 2004; Laksmita et al., 2020; Park et al., 2022). Age was grouped into over 15 years and under 15 years as reported in previous studies (Cheng & Chan 2004) and following recommendations from developmental psychology textbooks (Colarusso, 1992). Due to sample size limitations, only males and females were considered for the sex variable and for sexual orientation adolescents were grouped into heterosexual and non-heterosexual orientations (lesbian, gay, bisexual, asexual, and questioning) since the sample sizes were unequal. This analysis tests the determination of the multigroup model and the reference (configural) model, then establishes model parameters between different groups. The configural model is the least restrictive and is established for each group separately. Once this model is validated, configural variance is examined, where fixed and freely estimated parameters of the model are equivalent between the two compared groups. Configural invariance suggests that the factorial structure is similar between groups. Finally, restrictions are imposed on the equality of factor loadings between groups to check for metric invariance. If this model fits, it suggests that the same unit of measurement is used for items in all groups (Horn & McArdle, 1992). Finally, restrictions are imposed on item intercepts and factor loadings to check for scalar invariance. This model compares latent means between groups.

To assess the fit of these models, Cheung and Rensvold's (2002) proposal was followed using the CFI criterion. In this regard, when Δ CFI is greater than .01 between two nested models, the model with more restrictions is rejected. Conversely, if the value is equal to or less than .01, the model with more restrictions is assumed.

Subsequently, the reliability of the MSPSS was estimated using McDonald's omega.

Finally, correlations between MSPSS scores and other relevant indicators were computed. Data analyses were conducted using SPSS 25.0 and Mplus 7.

Results

Descriptive Stadistics

Descriptive statistics for MSPSS items are presented in Table 1.

Validity Evidence Based on Internal Structure

Factor loadings were calculated for sex, sexual orientation, and age (see Table 2). Regarding the factor analyses, Table 3 shows the proposed models. According to the goodness-of-fit indicators described previously, the most suitable model is the one calculated by CFA for three related factors: Factor I, Social Support from Others (SO), Factor II, Family Social Support (FAM), and Factor III, Friends Social Support (FRI).

Measurement Invariance of MSPSS Scores based on Sex, Sexual Orientation, and Age

Since the three related factors model showed the best fit, this structure was tested according to sex, sexual orientation, and age. The goodness-of-fit indices for both men and women were ade-

Table 2. Fully Standardized Factor Loadings for the Multidimensional Scale of Perceived Social Suppor	t (MSPSS) in the Sample by Sex, Sexual Orientation, and Age
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Factor	Ítem	Overall	Females	Males	Heterosexual	Sexual Orientation Minority	> 15 years	< 15 years
	1	.879	.892	.853	.876	.867	.870	.887
50	2	.918	.937	.889	.922	.910	.926	.913
30	5	.854	.854	.859	.805	.866	.851	.855
	10	.746	.795	.713	.765	.738	.698	.795
	3	.926	.938	.895	.912	.919	.931	.920
FANA	4	.940	.942	.931	.949	.927	.946	.935
FAIVI	8	.853	.867	.826	.893	.824	.861	.848
	11	.841	.864	.807	.869	.816	.842	.841
	6	.921	.921	.923	.907	.922	.918	.925
CDI	7	.941	.956	.922	.939	.938	.931	.950
ГКI	9	.904	.927	.880	.913	.898	.897	.912
	12	.915	.927	.897	.907	.912	.905	.924
Correlations								
SO	FAM	.765	.767	.788	.712	.760	.796	.736
	FRI	.766	.773	.761	.746	.756	.757	.776
FAM	FRI	.546	.520	.593	.426	.550	.551	.543

Note. SO = Factor I: Social Support from Others; FAM = Factor II: Family Social Support; FRI = Factor III: Friends Social Support.

quate (see Table 4). The same was observed for sexual orientation (Table 5) and age (Table 6). The configural, metric, and scalar invariance models in all three cases showed an adequate fit to the data. Measurement invariance was corroborated in these variables by obtaining scores equal to or less than .01 in Δ CFI.

Estimation of Reliability of MSPSS Scores

Internal consistency was calculated using McDonald's omega and Chronbach's alpha. Specifically, for the overall scale, the reliability was $\omega = .932$ and $\alpha = .930$, for the SO Cronbach it was ω = .865 and α = .861, for FAM factor, it was ω = .912 and α = .907, and for FRI factor it was ω = .935 and α = .934. All item discrimination indices surpassed .30.

Evidence of Validity Based on Relationships with Other Variables

After studying the correlations between the 3 factors of the MSPSS and the indicators of mental health, sense of belonging to the school, and satisfaction (Table 7), negative and significant

correlations were observed between the three factors and the PHQ-9. Factors II and III showed negative and significant correlations with the and SENTIA and SDQ subscales, except for the prosocial behavior subscale, which showed positive correlations. Factors II and III also correlated positive and significantly with the PWI scale of life satisfaction. All three factors of the PERT scale showed significant positive correlations with the three MSPSS factors.

Discussion

Social support is an important aspect for the well-being and quality of life of adolescents (Kirkbride et al., 2024) and has a direct impact on aspects of their daily functioning (e.g., academic achievement). It is essential to validate measurement instruments that allow professionals to rigorously assess the social support perceived by adolescents. Although the MSPSS is one of the most widely used questionnaires worldwide to assess perceived social support, it had not been validated in the Spanish adolescent population until now (Dambi et al., 2018). This is why the main objective of this study was to validate the MSPSS scores in a representative sample of Spanish school-aged children.

Table 3. Indicators of Fit for the Main Models Tested for the Multidimensional Scale of Perceived Social Support (MSPSS) in the Sample

Model	χ ²	df	CFI	TLI	SRMR	RMSEA	CI 90%
MSPSS-1F	5345.494	54	.919	.901	.697	.209	.205, .214
MSPSS-3F	789.064	51	.989	.985	.622	.081	.076, .086
MSPSS-B-3F	444.613	40	.951	.929	.617	.177	.172, .182
MSPSS-ESEM	1026.160	33	.985	.970	.602	.116	.110, .122
MSPSS-B-ESEM	458.479	24	.993	.982	.619	.090	.083, .097

Note. MSPSS-1F = One-factor Model; MSPSS-3F = Three related Factors Model; MSPSS-B-3F = Bifactor Three related Factors Model; MSPSS-ESEM = exploratory structural equation modeling of three factors; MSPSS-B-ESEM = bifactor exploratory structural equation modeling of three factors; WLSMV = weighted least square mean and variance; *df* = degrees of freedom; CI = confidence interval.

Table 4. Indicators of Measurement Invariance for the Multidimensional Scale of Perceived Social Support (MSPSS) in the Sample by Sex

	χ^2	df	CFI	TLI	SRMR	RMSEA	CI 90%	ΔCFI
MSPSS-3F	789.064	51	.989	.985	.622	.081	.076, .086	
Male (<i>n</i> = 1,045)	376.152	51	.986	.981	.604	.078	.071, .086	
Female (<i>n</i> = 1,183)	439.613	51	.991	.989	.641	.080	.073, .087	
Invariance nested models								
Configural (unconstrained model)	817.200	102	.989	.986	.604	.079	.074, .084	
Metric (equal factor loadings)	784.133	111	.990	.988	.769	.074	.069, .079	< .01
Scalar (equal item interceps)	873.425	168	.989	.992	.768	.061	.057, .065	< .01

Note. MSPSS-3F = Three related Factors Model; df = degrees of freedom; CI = confidence interval.

Table 5. Indicators of Measurement Invariance for the Multidimensional Scale of Perceived Social Support (MSPSS) in the Sample by Sexual Orientation

	χ^2	df	CFI	TLI	SRMR	RMSEA	CI 90%	ΔCFI
MSPSS-3F	789.064	51	.989	.985	.622	.081	.076, .086	
Heterosexuals ($n = 1,749$)	583.503	51	.987	.983	.595	.077	.072, .083	
Sexual Orientation Minority Groups (n = 486)	253.858	51	.989	.985	.609	.90	.080, .102	
Invariance nested models								
Configural (unconstrained model)	799.409	102	.988	.985	.609	.078	.073, .083	
Metric (equal factor loadings)	778.041	111	.989	.987	.771	.073	.069, .078	< .01
Scalar (equal item interceps)	806.207	168	.989	.992	.771	.058	.054, .062	< .01

Note. MSPSS-3F = Three related factors model; df = degrees of freedom; CI = confidence interval.

Table 6. Indicators of Measurement Invariance for the Multidimensional Scale of Perceived Social Support (MSPSS) in the Sample by Age

	χ^2	df	CFI	TLI	SRMR	RMSEA	IC 90%	ΔCFI
MSPSS-3F	789.064	51	.989	.985	.622	.081	.076, .086	
> 15 years (<i>n</i> = 1,063)	384.135	51	.988	.985	.620	.078	.071, .086	
< 15 years (<i>n</i> = 1,172)	495.519	51	.989	.985	.626	.086	.079, .093	
Invariance nested models								
Configural (unconstrained model)	877.731	102	.989	.985	.620	.082	.078, .088	
Metric (equal factor loadings)	846.184	111	.989	.987	.778	.077	.072, .082	.01
Scalar (equal item interceps)	811.203	168	.991	.993	.778	.059	.055, .063	< .01

Note. MSPSS-3F = Three related factors model; df = degrees of freedom; CI = confidence interval.

 Table 7. Correlations between Subscale Scores of the Multidimensional Scale of Perceived Social Support (MSPSS) and Scores of PHQ-9, SDQ, SENTIA, Sense of Belonging, and PWI-SC in the Sample

Variables	SO	FAM	FRI
PHQ-9	08*	52**	31**
SDQ_PREM	04	39**	28**
SDQ_PRCD	01	30**	18**
SDQ_PRCM	03	32**	50**
SDQ_HIP	.01	26**	16**
SDQ_PROS	.04	.20**	.25**
PERT-STUD	.26**	.32**	.29**
PERT-TEACH	.26**	.31**	.20**
PERT-WHOLE	.23**	.28**	.20**
SENTIA	.04	45**	24**
PWI-SC	.08	.55**	.35**

Note. SO = Factor I: Other Social Support; Factor II: Family Social Support; Factor III: Friends Social Support; PHQ-9: Patient Health Questionnaire-9; SDQ: Strengths and Difficulties Questionnaire; PERT: The School Belonging Scale; SENTIA: Brief Scale for the Assessment of Suicidal Behavior in Adolescents; PWI: Personal Well-being Index-School Children.

p < .05, p < .01.

Various factor models tested, the original model (Trejos-Herrera et al., 2018; Zimet et al., 1988), composed of three interrelated factors, showed the most adequate goodness-of-fit indices. These results are consistent with those found in previous studies (e.g. Denis et al., 2015; Ekbäck et al., 2013; Ermis-Demirtas et al., 2018; Igwesi-Chidobe et al., 2021; Kieu et al., 2023; Laksmita et al., 2020; Merhi & Kazarian, 2012; Park et al., 2022; Theofilou, 2015; Wilson et al., 2017). In a school population, Cheng and Chan (2004) obtained similar results in the Chinese population (χ^2 =793.51, p < .001, CFI = .94, SRMR = .057). In addition, they tested measurement invariance for gender and for children under and over 15 years, obtaining adequate psychometric properties. In the Korean population, Park et al. (2022) obtained high reliability (Full scale, $\alpha = .93$; Family, $\alpha =$.90; Friends, $\alpha = .91$; and Others, $\alpha = .92$). They found significantly higher scores in females and observed negative correlations with depression and anxiety, and positive correlations with resilience and school adjustment. In the USA Ramaswamy et al. (2009) also obtained adequate fit (χ^2 = 148.99, *p* = .00, CFI = .94, and RMSEA = .06) with positive correlations with seeking coping and negative correlations with internalizing behavior problems. In Ghana, the results of this structure for Wilson et al. (2017) were adequate (χ^2 = 78.25, p < .001, CFI = .959, RMSEA = .040, SRMR = .046), and found negative correlations with depression. In Nigeria, similar results were observed (CFI = .940, RMSEA = .065, SRMR = .049), proving invariance by gender and with negative correlations with anxiety. depression, self-esteem and suicidal ideation (Aloba et al., 2019). In Indonesia, Laksmita et al.'s (2020) structure was maintained (γ^2 = 2.468, RMSEA = .070, GFI = .935, CFI = .948, TLI = .933, SRMR = .047) testing measurement invariance by gender. In Peru, concluding that the best fitting model is ESEM bifactor (χ^2 = 11.605, CFI = 1, WRMR = .319, RMSEA = .00) with 12 items and the three original factors Merino-Soto et al. (2022) tested models similar to those presented in this study. As in the sample described above, the results indicated that the MSPSS is a multidimensional measure and should be interpreted in this way since an overall score does not seem to be sufficiently justified from a psychometric point of view. However, the strong correlation between the factors points to the importance of understanding the value that young people place on different sources of social support and the interactions between them.

Multilevel CFAs showed that this three-factor model had robust measurement invariance across sex, sexual orientation, and age. Previous studies observed evidence of metric and scalar equality across sex (Alexe et al., 2021; Aloba et al., 2019; Cheng & Chan, 2004; Fekih-Romdhane et al., 2023; Laksmita et al., 2020; López-Angulo et al., 2021; Wilson et al., 2017). To our knowledge, only one study has explored the invariance across age in adolescents. It was conducted in Hong Kong by Cheng and Chan (2004), and they found equivalence in the measurement across this variable. Finally, although no previous studies exploring measurement invariance across sexual orientation have been found, it has been observed that sexual minorities are subject to less social support and this, in turn, has an impact on health-related problems (Ehlke et al., 2020). In conclusion, the analyses show MSPSS scores were equivalent across sex, sexual orientation, and age. This is not a minor issue. It is critical to perform this type of analysis because, if measurement invariance does not hold, the validity of such scores for the general population must be questioned. Comparability between different groups only makes sense if it can be ensured that participants interpret and understand the latent construct in a similar way (Horn & McArdle, 1992). Psychometric evaluations of common measures of support and mental health are limited and are often assumed to perform similarly across subgroups. The study of measurement invariance is a particularly salient need in the field of sexual minority studies, where it is almost anecdotal to find studies on this topic (McMillan et al., 2023; Sullivan et al., 2023).

The total score of MSPSS exhibited good internal consistency, estimated with McDonald's Omega, with a coefficient of 0.93. These results are equivalent to those found in most studies conducted in multiple contexts (Dambi et al., 2018).

The MSPSS correlated negatively and significantly with selfreported symptoms of depression, emotional problems, behavioral problems, and suicidal behavior. In addition, it was positively associated with life satisfaction and with the feeling of belonging to the school. Similar results were observed for emotional regulation problems (e.g., Kieu et al., 2023; Park et al., 2022), emotional and behavioral difficulties (e.g., Tonsing, 2022; Wang et al., 2021), suicidal behavior (e.g. Aloba et al., 2019), or life satisfaction (Alexe et al., 2021; Calderón et al., 2021). In general terms, previous studies have shown that social support is significantly related to psychological well-being (Agbaria & Bdier, 2020; Tian et al, 2013). In this context, social support could counteract the possible isolation that young people may feel during their development process. In addition, social support can facilitate resources by offering support and encouraging the search for professional help in case of need.

The development and validation of assessment instruments, such as the one in this study, can serve as a basis for improving strategies for the promotion of psychological well-being in children and adolescents. In this regard, the questionnaire could be used as part of programs that contextualize the promotion of well-being and the prevention of mental health issues within the specific social, cultural and environmental realities of children and adolescents. This approach acknowledges the dynamic interaction between individuals and their environments, emphasizing perceived social support as a key resilience factor that mediates these interactions and reinforces coping mechanisms in the face of adversity (Bronfenbrenner, 1992; Sapienza & Masten, 2011; Ungar, 2013).

This work has some limitations. First, the study used self-report measures to collect the information. The limitations inherent to the use of self-reports, such as the misunderstanding and misinterpretation of the items or response bias, should be taken into account. Secondly, this is a cross-sectional study, so caution should be taken when establishing possible cause-effect relationships.

In short, the results obtained indicate that the MSPSS is a useful, brief tool with adequate psychometric properties for assessing perceived social support in adolescents in school settings. This study provides evidence on the validity of the scores of this questionnaire in a large and representative sample of non-clinical children. Future studies should continue to explore the factors related to social support and how this may have a mediating effect on various difficulties related to mental health such as its association with suicidal behavior (Al-Halabí & Fonseca-Pedrero, 2024; Fonseca-Pedro & Al-Halabí, 2024). It would also be interesting to evaluate new psychometric procedures or procedures based on new technologies that facilitate the assessment of social support in children (Elosua et al., 2023).

Conflict of Interest

The authors of this article declare no conflict of interest.

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