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Prosociality and Mental Health Indicators in Portuguese Adolescents – Validation of Prosocialness Scale

Indicadores de prosocialidad y salud mental en adolescentes portugueses - Validación de la escala de prosocialidad

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Resumen

Nuestra investigación tuvo como objetivo validar la Escala de Prosocialidad (PS) entre adolescentes portugueses. Intentamos examinar su estructura factorial, la invarianza del modelo según el sexo biológico, la confiabilidad y la asociación con variables sociodemográficas y otras variables relevantes. Nuestra muestra incluyó a 454 adolescentes de 13 a 17 años que completaron medidas de autoinforme que evaluaban la flexibilidad psicológica, las emociones negativas, la salud mental y el comportamiento prosocial. El PS demostró una estructura bifactorial que comprende un factor latente (prosocialidad) y dos factores específicos (acciones y sentimientos). Mostró consistencia interna y confiabilidad test-retest satisfactorias.

Además, mostró correlaciones positivas con la flexibilidad psicológica y la salud mental, mientras que se correlacionaba negativamente con estados afectivos negativos. El PS surgió como un instrumento válido y confiable para medir conductas prosociales, y promete ser aplicado como herramienta de detección en entornos educativos y clínicos. También puede facilitar la evaluación de intervenciones destinadas a fomentar una conducta prosocial.

Palabras clave

prosocialidad; PS; adolescentes; evaluación psicométrica; validación.

Abstract

Our research aimed to validate the Prosocialness Scale (PS) among Portuguese adolescents. We sought to examine its factorial structure, model invariance across biological sex, reliability, and association with sociodemographic and other relevant variables. Our sample included 454 adolescents aged 13 to 17 who completed self-report measures assessing psychological flexibility, negative emotions, mental health, and prosocial behavior. The PS demonstrated a bifactorial structure comprising a latent factor (prosociality) and two specific factors (actions and feelings). It exhibited satisfactory internal consistency and test-retest reliability.

Moreover, it showed positive correlations with psychological flexibility and mental health while negatively correlating with negative affective states. The PS emerged as a valid and reliable instrument for gauging prosocial behaviors, holding promise for application as a screening tool in educational and clinical settings. It may also facilitate the evaluation of interventions aimed at fostering prosocial conduct.

Keywords

prosociality; PS; adolescents; psychometric assessment; validation.

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Introduction

Prosociality is defined as a voluntary social behavior that benefits others (e.g., giving, helping, sharing) and contributing to the well-being of people. The literature describes this concept as multidimensional and multicultural (e.g., Carlo & Padilla-Walker et al., 2020; Pfattheicher et al., 2022). This means that prosocial behavior cannot be reduced to a single definition or understanding, as different cultural factors influence it and can be expressed in various ways, depending on the context and social norms of a given community (Carlo & Padilla-Walker et al., 2020). Prosocial behavior is crucial for developing reciprocal social relationships, particularly during childhood and adolescence when there is a greater need to belong to a social environment or group (Crone & Achterberg, 2022). It should also be considered that this behavior can be triggered by intrinsic motivations related to others' well-being (e.g., altruism) or extrinsic motivations, such as aversion to suffering and the desire to be appreciated by others (Batson, 2011).

Some studies have sought to clarify the relationship between prosocial behavior, altruism, empathy, and compassion (e.g., Brethel-Haurwitz et al., 2020; Carlo, 2014; DeSteno, 2015; Pfattheicher et al., 2022). Altruism is a set of actions that are intrinsically motivated with the aim of benefiting others without the existence of a reward, aiming to increase the well-being of the other. (Carlo, 2014). Prosocial behavior, in turn, reflects a wider category of welfare promotion actions based on multiple motivations, including altruism, selfishness, or unspecified (Pfattheicher et al., 2022). Spinrad and Gal (2018) indicated that altruistic motivations can be based on empathy, which is an affective response that arises from the apprehension or understanding of another person's emotional state. Thus, it is possible to find that empathy works as a driving dimension of prosocial behavior (Van der Graaff et al., 2018), being the pillar of social understanding and interaction (Stietz et al., 2019). Exploring the nature of the motivation underlying the prosocial response, as well as the development of this type of motivation, leads us to develop compassion (Gilbert, 2017). Compassion, a natural and innate trait present in the human motivational system, can function as a protective factor for individual well-being (Zessin et al., 2015) associated with emotional resilience (MacBeth & Gumley, 2012). Self-compassion refers to the positive way a person relates to himself, which involves a warm and encouraging attitude toward himself, recognizing, and accepting his own weaknesses and limitations without excessive judgment or criticism (Gilbert, 2019; Neff, 2019).

The development of prosocial behavior is a continuing process that needs to be better understood. According to Pastorelli et al. (2016), this behavior can be learned through observation and verbal behavior, resulting in the modeling of information acquired from an early stage of child development. During this process, parents play a key role as the first contact of socialization, as their prosocial actions can influence their children and perpetuate these actions throughout life. There is evidence that positive parenting may be related to children's prosocial behavior (Gross et al., 2017).

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Studies have shown that adolescents with a good level of prosocial behavior reveal healthy social functioning that contributes to their well-being (Carlo, 2014; Spinrad & Eisenberg, 2014). More specifically, at this stage of life, prosocial behavior is strongly linked to positive cognitive, socioemotional, and psychological factors (e.g., moral judgment, empathy, gratitude, and emotional regulation) relevant to promoting social adjustment (Alessandri et al., 2014). Conversely, in situations with weak development of prosocial attitudes, young people tend to manifest a higher risk of internalization problems (e.g., higher levels of depression and loneliness) and externalization (Memmott-Elison et al., 2020).

Adolescents' temperamental characteristics and individual differences, such as emotional self-regulation and inhibitory control, seem to be related to prosocial behavior (Eisenberg et al., 2006). Positive self-regulation allows teenagers to control their personal impulses and needs so that they can prioritize the needs of others and carry out actions that benefit those people. Thus, positive self-regulation is an important competence for adolescent prosocial behavior, helping them balance their own needs with the needs of others. For example, Memmott-Elison et al. (2020) showed that individuals with higher levels of prosociality had a higher level of emotional self-regulation.

Biological, cognitive, and social changes occur during adolescence. At this stage, young people develop cognitive skills that allow for more abstract thinking and greater psychosocial maturity with increased social responsibilities and expectations (Memmott-Elison et al., 2020). However, negative emotional states such as depression, anxiety, and stress strongly impact adolescents and can negatively affect their quality of life and functioning ability (World Health Organization, 2021). In the study by Lappalainem et al. (2021), approximately 10-20% of young people experienced mental health problems, with some starting at 14 years of age. Other studies have shown that factors such as sensitivity to interpersonal relationships and concern about social assessment can increase symptoms of depression (Blakemore & Mills, 2014). In conclusion, all these changes sustained by brain maturity that typically occur at this stage, conditioning the capacity for emotional self-regulation of young people, support the relevance of the development of prosocial behaviors in adolescence (Brittian & Humphries, 2015). According to Schacter and Margolin (2019), prosocial behavior in teenagers is related to an increase in positive mood, including in adolescents diagnosed with depression. This suggests that prosociality can meet the social and emotional needs of young people (Schacter & Margolin, 2019).

Considering the importance of prosocial behaviors in childhood and adolescence, and since school is necessarily part of the lives of these young people, it is appropriate to highlight the fundamental role of the school environment in the development of these behaviors (Caprara et al., 2014). It is believed that promoting prosociality in school can contribute positively to adolescent learning and adaptation as well as protect them from social rejection. The transmission of the importance

of prosocial behavior seems to potentiate greater social success and positively impact adolescents' academic and social paths of adolescents (Bergin, 2014). Recent data disclosed through a media outlet showed an increase in episodes of bullying in the school context in Portugal, reinforcing the relevance of school investments in programs and activities that promote prosocial behaviors and research that widens reliable forms of assessment of prosociality (Lusa, 2022).

Despite the importance of this topic in general human development, there are few studies in Portugal on prosociality, namely, on instruments to measure prosocial behaviors in adolescence. At the same time, even in international studies, the available instruments have presented psychometric limitations, not highlighting some of the multidimensional nature of prosocial behaviors or their use in different types of samples (Carlo et al., 2010; Mestre et al., 2015). Thus, the need for instruments that reliably evaluate prosociality in adolescence becomes evident.

For children and adolescents, some instruments seek to evaluate prosociality, such as The Prosocial Behavior Questionnaire (PBQ; Sánchez-Queija et al., 2006) and the Adolescents (PSSA; Rodríguez & Pérez, 2011). The PBQ was developed to assess prosociality in more specific contexts, such as non-governmental organizations (Martí-Vilar et al., 2019; Sánchez-Queija et al., 2016). The primary objective of PSSA for adolescents is to assess prosociality through four factors: a) perspective-taking; b) solidarity; c) help response; d) caring altruism (Rodríguez & Pérez, 2011; Martí-Vilar et al., 2019). Alternatively, the Prosocialness Scale (PS; Caprara et al., 2005) focuses solely on prosociality (feelings and actions), unlike other instruments that, in addition to prosociality, encompasses similar constructs. PS, used in adults and adolescents, aims to analyze an individual's tendency to manifest prosocial behaviors in different circumstances (Caprara et al., 2005). Their items, formulated simply to be answered by adults and adolescents, aim to evaluate four types of prosocial behaviors (sharing, helping, caring, and feeling empathy) (Caprara et al., 2005; Carrizales et al., 2017). In reference to psychometric data, this instrument shows good reliability, with the overall score revealing good internal consistency (with Cronbach's alpha ranging between .82 and .94) in samples of adolescents and adults from various countries (Caprara et al., 2005; Kanacri et al., 2021). In addition to its psychometric qualities, the PS is a short and easy-to-fill instrument that demonstrates sensitivity to the situation context. In this sense, it is possible to assess the presence of prosocial actions at a given time (e.g., "I am available to volunteer for activities to help those in need.").

Based on the review presented, it was considered a relevant contribution to validating PS for Portuguese adolescents, ending the scarcity of research in this area. Additionally, the availability of this instrument for adolescents, along with its version for adults, allows us to extend the research over time, allowing the analysis of the effect of age on prosociality and its relationship with indicators of mental health or psychological well-being. The Portuguese version of this instrument not only

covers all ese-speaking communities but also identifies possible specific cultural aspects and enables cross-cultural studies on prosocial behavior.

The general objective of this study was to analyze the psychometric characteristics of the PS in a sample of adolescents from a Portuguese population. The specific objectives were as follows: a) to analyze the factor structure of the PS; b) to explore the quality of the items and reliability of the scale; c) to test the time stability in the four-week interval; d) to analyze the convergent and divergent validity through the association between the PS and indicators of prosocial behavior, mental health indicators, psychological flexibility, and negative emotional states; and e) to explore the relationship between prosociality and sociodemographic variables (e.g., age, schooling, and biological sex).

Based on the results of previous investigations, we expected to obtain a one- or two-factor structure and good internal consistency in the Portuguese version of the PS. A positive correlation was found between prosocial behavior, psychological well-being, and psychological flexibility, and a negative association between prosocial behavior and symptoms of psychopathology. It was expected that PS results would vary between biological sexes, and there would be a greater predisposition of girls to display higher values.

Materials and Method

Participants

The sample consisted of adolescents residing in Portugal, more specifically in the central area of Portugal and the autonomous region of Madeira, meeting the following inclusion criteria: a) aged between 13 and 17 years; b) students attending the third cycle of primary and secondary education or equivalent; and c) absence of cognitive difficulties impeding the understanding of questionnaires.

This study included a total of 454 adolescents, of which 260 were female (57.3%), 186 were male (40.9%), and 8 (1.8%) were not identified as either male or female. The participants were between 13 and 17 years old (M = 14.96, SD = 1.11), had schooling between the 7th and 12th years (M = 9.55, SD = 1.11), and attended public or private schools.

Instruments

The participants' assessment protocol required the completion of a sociodemographic questionnaire (e.g., age, biological sex, and educational status) and five self-response questionnaires assessing prosociality, psychological flexibility, negative emotional states, and mental health.

PS (Caprara et al., 2005) is a 16-item self-response tool that evaluates four types of prosocial behaviors: sharing, helping, caring, and feeling empathy. Each item is answered on a 5-point Likert scale ranging from *Never/Never* (1) to *Always/Nearly Always* (5), and the higher the final score, the greater the presence of prosocial actions in adolescents. The original version of this scale showed excellent reliability, with a Cronbach's alpha of .94 in a sample of Italian adolescents and adults (Kanacri et al., 2021).

The Psy-Flex (Gloster et al., 2021; Portuguese version for Adolescents – PsyFlex-A,

Soares et al., 2023) consists of six items that evaluate the six dimensions of psychological flexibility according to the theoretical model of Acceptance and Commitment Therapy (Hayes et al., 2012). Items are answered on a scale ranging from *Almost Never* (1) to *Almost Always* (5). Higher scores indicate greater psychological flexibility. The Portuguese version of this instrument has an internal consistency of α =.77 (Soares et al., 2023). In this study, the PsyFlex-A showed adequate internal consistency (α = .86).

The Depression Anxiety Stress Scale (DASS) 21 (Lovibond & Lovibond, 1995; Portuguese version of Pais-Ribeiro et al., 2004) consists of three subscales, with seven items each, which evaluate the symptoms of anxiety, depression, and stress, with a total of 21 items. The subject was asked to answer if the statement applied to him "last week." It is a self-responsive questionnaire, where the answers to each item are given on a 4-point scale ranging from *Nothing applied to me* (0) to *It applies to me most of the time* (3). Higher scores correspond to more negative emotional states. In this study, only anxiety and depression subscales were used. In the Portuguese version of the DASS-21, the authors obtained adequate internal consistency for the scales of depression (α = .85), anxiety (α = .74), and stress (α = .81) (Pais-Ribeiro et al. 2004). In our sample, the scales of depression and anxiety revealed good internal consistency, with alpha values equal to αdepression $\alpha_{depression}$ = .92 and angst $\alpha_{anxiety}$ = .88, respectively.

The Mental Health Continuum – Short Form – MHC-SF (Keyes, 2009; Portuguese version of Matos et al., 2010) is a self-response tool consisting of 14 items that evaluate subjective well-being in three factors: emotional, social, and psychological welfare. Items are answered on a Likert scale of 6 points ranging from *Never* (0) to *Every day* (5). Higher scores indicate positive emotional well-being and psychological functioning. The results obtained for the internal consistency of the Portuguese version of the MHC-SF were good for the overall scale score (α = .90) and for emotional well-being factors (α = .85), social well-being (α = .80), and psychological well-being (α = .83) (Matos et al., 2010). In the present study, the MHC-SF showed good internal consistency for the overall scale (α = .93) and for, emotional well-being factors (α = .87), social (α = .85), and psychological (α = .85).

The Strengths and Difficulties Questionnaire (SDQ (Goodman, 2001; Fleitlich et al., 2005) is organized into five subscales: emotional symptoms, behavioral problems, hyperactivity/inattention, relationship problems with peers, and prosocial behavior. The scale consists of 25 items; however, in this study, only the subscale of prosocial behavior, composed of five items, was used. To answer the items, the participant had a response scale that varied between *Not True* (0) and *Very True* (2). In the Portuguese version, the instrument has adequate psychometric quality and acceptable internal consistency (α = .74) (Fleitlich et al., 2005; Conceição & Carvalho, 2013). In the present study, the prosocial subscale showed appropriate internal consistency, with a Cronbach's alpha of .68.

Procedure

Authorization was requested from the authors to translate and validate the Prosocial-

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ity Scale for the Portuguese population using adult and adolescent samples. It is important to note that, in the version for adolescents, only the instructions are different, reformulated in a more friendly language, while the formulation of the items of the adult version is called the Prosocialness Scale for Adults (PSA). In this sense, the PS English-to-Portuguese translation procedure description is not included in this paper but has been included in the PSA validation study (Tomás & Cunha, 2023). Authorizations were also collected from various authors to use Portuguese versions of the instruments selected for this study.

The elaboration of the protocol included a face sheet with brief information on the study, consent of educational officers or legal representatives, informed consent of the participant, collection of sociodemographic data (age, biological sex, and schooling), and PS accompanied by self-response instruments aimed at evaluating prosociality (SDQ), psychological flexibility (PsyFlex-A), negative emotional states (DASS-21), and mental health (MHC – SF).

This study was approved by the Ethics Committee of the Instituto Superior Miguel Torga (CE-P05-23). Since the sample collection took place in schools in central Portugal and the autonomous region of Madeira, the project was also submitted and approved by the Directorate-General for Education (DGE) (survey number 0082000029) and by the Regional Directorate for Education of Madeira. After the authorization of the entities, approval of the management of the schools that intended to participate in this study was required, as well as the consent of the educational officials.

The application of the study followed the ethical and deontological standards of research by Portuguese psychologists. Participation was voluntary and anonymous, and participants could give up at any time without any harm to them. The data were treated confidentially and aggregated for research purposes only.

The protocols were answered individually in a classroom context in the researcher's presence, which took approximately 15 minutes. It is important to note that the test-retest study was conducted in randomly selected classes. In these, students were asked to fill in a code consisting of the initials of the first and last name, accompanied by the last three digits of the telephone contact, so that the data could be matched between the first and second four weeks later. The collection took place between February 13 and March 30, 2023, in public schools in the central region of Portugal and the Autonomous Region of Madeira.

Statistical Analysis

The data were analyzed using Predictive Analytics Software (PAWS, version 29, SPSS, AMOS) and JASP software package (JASP Team, 2018). Parametric tests were used, supported by the sample size ($N = 454$) and exploration of the variables that proposed a normal distribution, with acceptable values of asymmetry (Sk $< | 3 |$) and kurtosis (Ku $< | 10 |$) (Kline, 2005).

Descriptive statistics were used to characterize the sample, calculating averages and standard deviations for the continuous variables (age and school years) and frequencies

and percentages for the categorical variable (biological sex).

The analysis of the factor structure of the PS was carried out through the AMOS program using the robust method of estimation of the maximum probability. The plausibility of different factor models was tested:1) a one-factor model, 2) a two-correlated latent factor model, 3) a hierarchical model of two first-order specific factors and a second-order global factor, and 4) a bifactorial model. By using the Mahalanobis square distance (D2) and Mardia test, it was possible to confirm the multivariate normality of the items. The quality of the overall model adjustment was assessed using the following indicators: chi-square statistic (χ2/gl), Comparative Fit Index (CFI), Tucker & Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Median Square Residual (SRMR). In the interpretation of these indices, the following criteria were considered (Hu & Bentler, 1999): GFI, CFI, and TLI ≥.90, acceptable and ≥.95, desirable; RMSEA ≤.05, very good adjustment; ≤.08, acceptable adjustments. For the comparison of alternative factor models, the expected cross-validation index (ECVI) was used, with lower ECVI values indicating higher and more stable models for the study population (Kline, 2005). Local adjustment of the items was analyzed using standardized regression weights and multiple square correlations. According to Tabachnick and Fidell (2007), values equal to or higher than .40 for factor weights and equal to or greater than .25 for multiple correlations to the square are considered appropriate.

To explore the psychometric qualities of the PS items, their respective averages, standard deviations, asymmetry, shortness values, total item correlation, and Cronbach's alpha if item-eliminated were calculated. Reliability was also confirmed by calculating composite reliability (CR) using an online calculator (https://www.thestatisticalmind.com/composite-reliability/).

The intraclass correlation coefficient (ICC) was used to assess the test-retest reliability of the overall score and scale factors over a 4-week interval. According to Koo and Li (2016), values below .50 reveal poor reliability; between .50 and .75, moderate stability; values between .75 and .90 are considered good and greater than .90 is considered excellent.

Pearson's correlation coefficient, *r,* was calculated to analyze the association between PS factors, overall scores, and other variables in the study. The interpretation of correlations was based on the classification of Pallant (2016), according to which values of *r* between .10 and .29 equal to weak correlation, between .30 and .49 indicate moderate, and values between .50 and 1 reveal strong.

The comparison of average PS values among male and female adolescents who participated in this study was performed using a *t-test* for independent samples. The size of the effect was examined by calculating Cohen's d value. According to Sawilowksy (2009), effect sizes d = 0.01 are considered very small, $d = 0.20$ as small, $d = 0.50$ as averages, $d = 0.80$ as large, $d > 1.20$ as very large, and $d = 2.00$ as huge.

Results

Confirmatory Factor Analysis

The analysis of the PS factor structure was guided by studies conducted by Kanacri et al.

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(2021), in which four plausible factor models for PS were evaluated in five different samples. **Model 1** represents a one-factor model with the presence of a single factor that reveals a global trend of prosocial behavior; **model 2** represents the existence of two correlated factors (prosocial actions and prosocial feelings) that reflect a general behavioral dimension; **model 3** evaluates the plausibility of a hierarchy between two specific factors and a general construct, that is, a factorial model with two first-order latent factors (prosocial actions and prosocial feelings), and the second level is a global factor; finally **model 4** refers to a bifactorial approach, which includes two specific factors (prosocial actions and prosocial feelings) and, at the same conceptual level, a third (general) factor that reflects the commonalities of all items.

Table 1 lists the adjustment rates for the various tested models. Model four was the only model that revealed appropriate values.

In comparison, ECVI also confirmed the superiority of the bifactorial model (Figure 1) over other models.

The factor weights of the bifactorial model ranged between .42 and .84 for the general prosocial factor, between -.07 and .73 for the prosocial action factor, and between .19 and .54 for the prosocial feelings factor. Items 3, 6, 10, and 13 did not significantly saturate the specific factor related to prosocial actions, suggesting that these items were pure markers of the global dimension of prosociality and fewer indicators of prosocial actions (Table 2).

Item Analysis and Global Internal Consistency

The asymmetry values obtained varied between -1.03 (item 10) and -.26 (item 11), and the flatting values were between -.94 (item 4) and .73 (item 5), indicating the acceptance of a normal distribution of the variables.

PS demonstrated excellent internal consistency, with a Cronbach alpha of .92 for the overall score and .90 and .79 for the prosocial actions and feelings factors, respectively. The

Table 1
Results of PS Measurement Invariance Tests (N = 454)

Models	χ^2	*df*	RMSEA	CFI	TLI	SRMR	ECVI
M1: One-factor model	539.93	104	.10 (.09 - .10)	.87	.86	.06	.33
M2: Two correlated factors	455.31	103	.09 (.08 - .10)	.90	.88	-05	.15
M3: Second-order factor	456.32	102	.09 (.08 - .10)	.90	.88	.05	1.151
M4: Bifactorial	320.23	88	.08 (.07 - .09)	.93	.91	.04	.92

Note: χ2 = Chi-square Goodness-of-fit Statistic; df = Degrees of Freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; SRMR = Standardized Root Mean Square Residual; ECVI = Expected Cross Validation Index

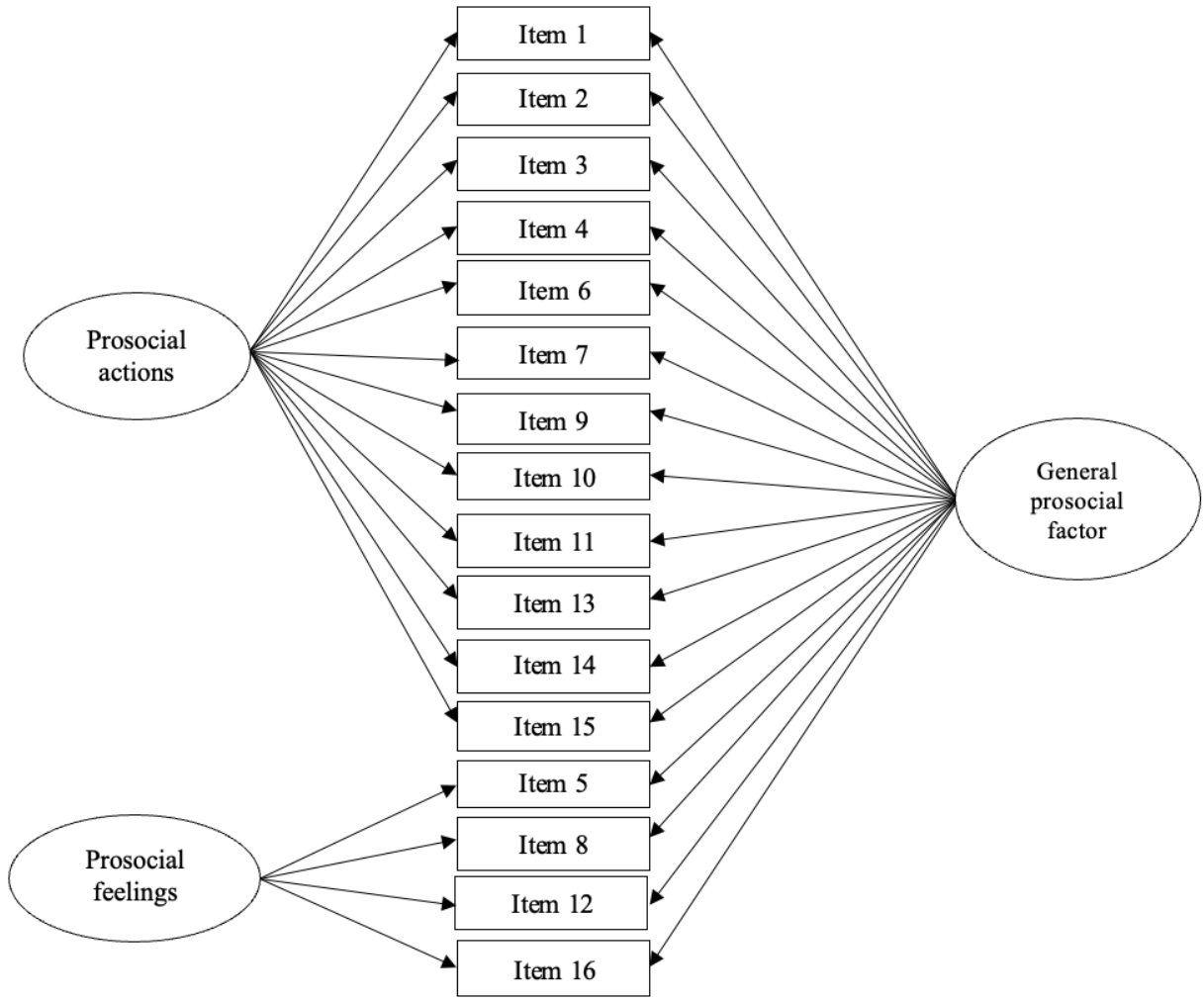

Figure 1. Bifactorial Model of PS

validity of this construction was further confirmed by composite reliability (CR) calculation, revealing a value of .92 for the total scale, .90 for the prosocial action factor, and .70 for the sentiment factor. The means, standard deviations, item-total correlations, and Cronbach's alpha if the item was removed from the PS items are presented in Table 2.

Test-Retest Reliability

The PS scale was again completed by 75 participants, 37 females and 38 males (M_{age} = 14.64, SD_{age} = 1.25), with an interval of 4 weeks to analyze test-retest reliability. The intraclass correlation coefficient (ICC) was .76 [.72 - .79, CI95%], indicating good time stability. The prosocial action factor revealed a coefficient of .77 [.72–.80, CI95%] and a prosocial feelings factor of .64 [.59–.70, CI95%), indicating moderate stability. Pearson's correlation coefficient (r = .78, p < .001) was also calculated, confirming the strong association between PS values at both times.

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Table 2
PS Items and Total Psychometric Characteristics (N = 454)

Items	M (SD)	*r*	*α*	Factorial Weights	
				GPF	SF
Prosocial Actions (α = .90)					
I am pleased to help my friends/colleagues in their activities.	4.16 (0.87)	.67	.91	0.68*	0.23*
I share my things with my friends.	3.93 (0.81)	.51	.92	0.42*	0.73*
I try to help others.	4.21 (0.83)	.73	.91	0.78*	0.07
I am available to volunteer for activities to help those in need.	3.62 (1.18)	.58	.92	0.60*	0.15*
I immediately help those in need.	.89 (0.95)	.67	.91	0.73*	0.02
I do what I can to help others avoid getting into trouble.	.99 (0.89)	.63	.92	0.62*	0.19*
I am willing to make my knowledge and abilities available to others.	4.00 (0.89)	.59	.92	0.56*	0.28*
I try to console those who are sad.	4.07 (1.01)	.73	.91	0.81*	-0.07
I easily lend money or other things.	3.32 (1.11)	.52	.92	0.50*	0.26*
I try to be close to and take care of those in need.	.86 (0.97)	.77	.91	0.84*	-0.01
I easily share any good opportunity that comes to me with my friends.	.83 (1.03)	.57	.92	0.54*	0.31*
I spend time with friends who feel lonely.	3.75 (0.94)	.60	.92	0.62*	0.10*
Prosocial Feelings (α = .79)					
I am empathic towards those in need.	4.09 (0.95)	.62	.92	0.62*	0.19*
I intensely feel what others feel.	3.30 (1.06)	.53	.92	0.50*	0.29*
I easily put myself in the shoes of those who are in discomfort.	3.70 (1.07)	.68	.91	0.69*	0.54*
I immediately sense my friends' discomfort even when they don't tell me directly.	3.97 (1.00)	.60	.92	0.61*	0.39*

Note. PS = Prosocialness Scale; M = Mean; SD = Standard Deviation; r = Correct item-total Correlation; α = Cronbach if item deleted; GPF = General Prosocial Factor; SF = Specific Factor
*p > .05

Associations with Other Variables

The overall score and PS factors demonstrated a strong positive association with prosocial behaviors, as evaluated by the SDQ subscale, thus showing good convergent validity. Total PS and action factors strongly correlated with psychological flexibility, as assessed by PsyFlex-A, and mental health perception. The prosocial feelings factor positively correlated with PsyFlex-A and mental health perceptions.

In turn, the PS (total and factor actions) showed a weak negative association with anxiety symptoms and a moderate association with depression symptoms evaluated by the DASS-21 sub-scales of anxieties and depression, respectively.

Analysis of Sociodemographic Variables

Analysis of the average overall PS score according to biological sex showed a significant difference [$t_{(444)}$ = -6.27, $p < .001$], with girls (M = 64.40, SD = 9.06) showing higher prosociality values than boys (M = 58.37, SD = 11.22), with the average effect size (d_{Cohen} = 0.60). Boys and girls also differed significantly in the average values of prosocial actions ([$t_{(444)}$ = -5.60, $p < .001$] and prosocial feelings [$t_{(444)}$ = –6.56, $p < .001$], with girls showing higher values for both factors, with effects of average size (d_{Cohen} = 0.54 and d_{Cohen} = 0.63, respectively).

Age was not shown to be associated with the overall PS score (r = 0,03, p = .565), nor with specific factors, prosocial actions (r = 0,02, p = .757), and prosocial feelings factor (r = 0,55, p = .262). The years of schooling presented a significant, although weak, positive correlation with the general factors of prosociality (r = 12, p = .014), prosocial actions (r = 11, p = .021), and prosocial feelings (r = 0,11, p = .019).

Discussion

The concept of prosociality encompasses the action of benefiting others, which, in turn, potentiates the development of reciprocal social relationships, which are determinants of the mental health and well-being of the individual (Crone & Achterberg, 2022).

Providing a tool to measure prosocial behavior in adolescents reliably is useful, facilitating the early identification of possible dif-

Table 3
Correlations Between the Variables

	PS	Prosocial Actions	Prosocial Feelings	SDQ	DASS-21 Anxiety	DASS-21 Depression	*PsyFlex*-A
Prosocial Actions	.98**	-	-	-	-	-	-
Prosocial Feelings	.85**	.72**	-	-	-	-	-
SDQ	.71**	.71**	.57**	-	-	-	-
DASS-21 Anxiety	-.18**	-.21**	-.06	-.23**	-	-	-
DASS-21 Depression	-.35**	-.38**	-.20**	-.39**	.78**	-	-
PsyFlex-A	.56**	.56*	.47**	.45**	-.45**	-.56**	-
MHC-SF	.57**	.59**	.40**	.52**	-.58**	-.74**	.66**

Note. PS = Prosocialness Scale; SDQ = Strengths and Difficulties Questionnaire; DASS-21 = Depression Anxiety Stress Scale; MHC-SF = Mental Health Continuum – Short Form. ** $p < .001$

ficulties in social interaction, contributing to the general well-being of adolescents, and strengthening healthy social relationships. Given the scarcity of instruments available to children and adolescents and the robust characteristics of PS, this study sought to validate this scale for adolescents. For this purpose, a sample of 454 Portuguese students from the 7th to 12th year of school in the central region of Portugal and the autonomous region of Madeira was used.

In the factor structure analysis, the results of this study showed that the bifactorial approach turns out to be the most appropriate. In other words, the results supported a model in which prosocial responses were characterized by a general latent factor (prosociality) and two other specific factors (prosocial actions and prosocial feelings). These data are aligned with those found in the study by Kanacri et al. (2021), with the bifactorial model suggesting:1) there is a general factor that explains the similarity between shared prosocial tendencies (through specific actions or feelings), and 2) there are two main specific factors. In this sense, although there are different ways to express prosocial actions or feelings, a general factor explains their similarity. This suggests that, while people may have different ways of manifesting prosocial behaviors, these forms are based on shared values and motivations that are essential for prosociality. Indeed, according to the suggestions (Caprara et al., 2005), the results highlight that prosocial actions and feelings evaluate two aspects of prosocial tendencies, both different from a general disposition.

The reliability of the PS was confirmed by determining Cronbach's alpha and composite reliability. Over the 4-week interval, the time-stability study showed adequate test-retest reliability, revealing a strong contribution to the study because this procedure was not performed in the original study.

As expected, the overall PS score was positively correlated with psychological flexibility and mental health. In contrast, it was negatively correlated with measures of negative affective states (anxiety and depression). The same is to say that the higher the individual's tendency to help others, the greater their flexibility or adaptability in general, as well as their sense of well-being on an emotional, social, and psychological level. In turn, the greater the manifestation of prosocial behaviors, the lower the experience of negative emotional states (anxiety and depression). These results align with other studies that have shown a positive association between prosociality and psychological well-being (Evans et al., 2018) and psychologically flexible behavior (Crone et al., 2022).

Other studies have confirmed that prosociality is negatively associated with depression and anxiety (Padilla-Walker et al., 2020; Setterfield et al., 2016). In summary, the data suggest a pattern of association that, although it can vary in different contexts and individuals, can be elucidated in various ways, such as building healthy relationships, social connection, and the development of a purpose, thus contributing to a positive link between prosocial behaviors and psychological well-being. The data also showed that prosocial actions and feelings

were related in ways that were different from the variables studied. Prosocial actions were identified as a strong factor, whereas prosocial feelings had lower correlations.

In analysing the sociodemographic variables, age was not associated with PS prosociality. This result may have been conditioned by the sample in question, where the age variability was small, from 13 to 17 years, thus implying a cautious interpretation of the role of this variable. Other studies should deepen the understanding of the relationship between prosociality and age. In addition, factors other than age may also influence adolescent prosociality. Prosociality is influenced by a variety of factors, including education (Mesurado et al., 2018), social experiences (Baumsteiger, 2019), culture (Baumstiger, 2019), and genetics (House, 2018) which can minimize or suppress the effect of age.

When analyzing sex differences, statistically significant differences were found, with girls showing higher values of prosocial behavior. This result can be explained by the fact that women have a greater tendency to show affection and emotional concern in early childhood than men (Eisenberg et al., 2006). According to Caprara et al. (2005), items related to empathy and emotional support are more associated with the female sex, while items related to immediate help, knowledge sharing, and opportunities are more related to men.

In the present study, it was possible to find some limitations that must be considered, namely the impossibility of generalizing the results to the Portuguese population. The use of self-response tools throughout the process may have conditioned the data obtained, and it is important to note that in adolescents, the desirability of manifesting prosocial behaviors to obtain approval from others, that is, the manifestation of concerns about self-presentation, can send the answers given by them. Given these limitations, future studies with a community-representative sample, as well as the use of other assessment methods (e.g., structured interviews or behavioral observations) and other sources of information (e.g., parents and teachers) may be aspects to be considered and in turn, enrich the results due to reduced submissions.

The current study has enabled a new and brief instrument for the Portuguese adolescent population, contributing to research on the effectiveness of interventions aimed at promoting prosocial behaviors, such as interventions based on mindfulness and compassion (Quaglia et al., 2016; Bibeau et al., 2016), both in the clinical and health fields, as well as in the educational context. Investing in prosociality in the school context also plays a crucial role, mainly because it can contribute to the learning and good adaptation of students, protecting them from the possible negative consequences of finding themselves, for example, in an environment of rejection from peers (Caprara et al., 2014).

Overall, the results suggest that this Portuguese version is a reliable and valid measure for evaluating prosociality in adolescents, allowing its use in other Portuguese-speaking countries and conducting cross-cultural studies.

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