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Systematic review of prosocial behavior measures

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Measuring prosocial conduct, just as other constructs which are relevant for psychological adjustment, requires a base of knowledge which is orderly and up-to-date, which helps to identify and methodological aspects for its construction. The objective of this study is to identify the instruments for measuring prosocial behavior which are available today in the empirical literature, as well as to analyze their characteristics and psychometric properties. In this study, the bibliographic search was carried out on the databases of web of science (WOS) and Dialnet from 1900 to 2017 with special emphasis on the last decade. Sixteen instruments relevant to prosocial behavior were chosen describing its applications and characteristics. There is a discussion of the implications of continuing research into measures of prosocial behavior.

Keywords: tests; prosocial behavior; systematic review; scales.

Revisión sistemática de medidas de conducta prosocial

La medición de la conducta prosocial, como otros constructos relevantes para el ajuste psicológico, requiere una base de conocimientos ordenada y actualizada, que ayude a identificar y aspectos metodológicos a su construcción. El objetivo de este estudio es identificar los instrumentos de medida de la conducta prosocial disponibles en la literatura empírica sus características y propiedades psicométricas. En este estudio, la búsqueda bibliográfica estuvo

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realizada en las bases de datos Web of Science (WOS) y Dialnet desde 1900 a 2017 con énfasis especial en la última década. Se eligieron 16 instrumentos relevantes a la conducta prosocial, describiendo sus aplicaciones y características. Se discute las implicancias para la continuidad de la investigación sobre medidas de la conducta prosocial.

Palabras clave: Tests; conducta prosocial; revisión sistemática; escalas.

Revisão sistemática de medidas de comportamento pró-social

Medir o comportamento pró-social, assim como de outros constructos relevantes para o ajustamento psicológico, requiere uma base de conhecimentos ordenada e atualizada, que ajude a identificar aspetos metodológicos no seu desenho. O objetivos deste estudo é identificar os instrumentos de medida do comportamento pró-social disponíveis na literatura empírica, as suas características e propriedades psicométricas. Neste estudo, a pesquisa bibliográfica foi realizada nas bases de dados Web of Science (WOS) e Dialnet desde 1900 a 2017 com especial ênfase na última década. Foram escolhidos 16 instrumentos relevantes no comportamento pró-social, descrevendo as suas aplicações e características. Discute-se as implicações para a continuidade da investigação sobre medidas do comportamento pró-social.

Palavras-chave: Teste; Comportamento Pró-social; Revisão Sistemática; Escala.

Revue systématique de mesures du comportement prosocial

La mesure du comportement prosocial, comme d'autres concepts significatifs pour le réglage psychologique, exige une base de connaissances ordonné et actualisé qui soit capable d'identifier et définir les aspects méthodologiques de sa construction. L'objectif de cette étude est d'identifier les instruments de mesure du comportement prosocial disponibles dans la littérature empirique, ses caractéristiques et propriétés psychométriques. La recherche bibliographique de ce travail a été faite avec les bases de données Web of Science (WOS) et Dialnet, et les documents employés ont été publiés entre 1900 et 2017, mais on a mis l'accent dans les travaux de la dernière décennie. On a choisi 16 instruments pertinents du comportement prosocial, en décrivant ses applications et ses caractéristiques. On souleve la question pour donner continuité de la recherche sur les mesures du comportement prosocial.

Mots clés: test, comportement prosocial, révision systématique, échelles.

Prosocial behaviors are generally understood as intended to voluntarily benefit others, while reducing aggression and antisocial behavior (e.g., Batson 1991; Carlo, Knight, McGinley, Zamboanga & Hernandez-Jarvis, 2010; Hoffman, 2000), they are desirable and beneficial to society (Eisenberg, Fabes & Spinrad, 2006). Considering this, a bulk of research focused on the causes and understanding of these behaviors has been carried out during recent years. This study on the topic of prosocial behaviors has come from a wide range of psychology areas, and latest findings are related to developmental and educational psychology, social psychology, organizational psychology, or clinical psychology. For example, in the case of developmental and educational psychology, several studies have pointed out the important contribution of both parental behaviors and the parent–child relationship to children’s and adolescents’ prosocial behavior (i.e., Dunn, 2006; Hinde, 2002; Hoffman, 2000; Yoo, Feng & Day, 2013). From social-cognitive psychology, it has been repeatedly suggested that playing violent video games can reduce prosocial or helping behaviors (i.e., Anderson et al., 2010; Bushman & Anderson, 2009; Carnagey, Anderson & Bushman, 2007). Work psychologists, in turn, have been centered on individual differences that promote prosocial motives in the organizational context (i.e., Bolino & Grant, 2016; Penner, Dovidio, Schroeder & Piliavin, 2005). In the personality arena, self-reported prosocial behaviors have been linked to some personality traits, such as the dimensions of narcissism (i.e., Barry & Kauten, 2014; Kauten & Barry, 2014, 2016).

Within this context, it seems of special relevance the measurement of these prosocial behaviors, because it is reasonable to recognize that this type of behavior is ubiquitous in many social interactions, to a greater or lesser degree. Measuring prosocial behavior can provide very useful information, not only for psychology professionals who can extrapolate these behaviors to many aspects that make up the discipline,

but also for professionals in the medical and sociological field, as well as in labor, political and criminal science. Leveraging these behaviors can contribute to many overall benefits.

The methodological and evaluative aspects have been fundamental to this field ever since psychology gained recognition as a science, because it measures what is being studied. They are generally intangible aspects, such as behaviors, measured from inferences, and necessarily require the accumulation of strong evidence of validity to support the interpretation of their scores and their use (Elosua, 2003). Without these sources of scientific support, the researcher or practitioner could not defend the usefulness and effectiveness of their measurements. All of this raises the following question: what is the status of measuring instruments for prosocial behavior? Although a recent review attempted to present the current state of the research on prosocial behavior (Auné, Blum, Abal, Lozzia & Attorresi, 2014), its development was based on a rational analysis of related concepts and instruments, rather than supported by empirical findings.

Until now, several types of instruments for prosocial behavior assessment have been developed. For purposes of this review, the authors created a logical-rational analysis of classification model. In this framework, these measures can be logically classified depending on the source from which information is gathered: 1) *self-assessment* or *self-report* instruments, in which the individual is the one that evaluates his/her own behaviors; 2) *peer-assessment* measures, in which equals are the ones that evaluate individuals' behaviors; and 3) *other people-assessment* instruments, which include evaluations from parents, teachers, etc.

Within these instruments, self-assessment measures are the most prominent, and a wide range of them can be found throughout the literature. The Teenage Inventory of Social Skills (TISS; Inderbitzen & Foster, 1992), for example, is a 40-item scale that evaluates both prosocial and antisocial behaviors. The Prosocial Behavior Scale (PB; Caprara & Pastorelli, 1993) is a 15-item scale, assessing behaviors of altruism, trust and pleasantness. The Prosocial Tendencies Measure (PTM; Carlo & Randall, 2002) is a more extensive scale, with a total

of 23 items, assessing multidimensionality of prosocial behaviors. It distinguishes six types of prosocial behaviors: public, anonymous, dire, emotional, compliant, and altruism. The Prosocialness Scale for Adults (PSA; Caprara, Steca, Zelli & Capanna, 2005) is composed of 17 items and classifies behaviors and feelings into four types: the action of assisting, helping, sharing of caring and empathy with others. The Prosocial Behavior Questionnaire (Sánchez-Queija, Oliva& Parra, 2006) intends to measure adolescents' behaviors performed in NGOs through 7 items. The Prosocial Skills Scale for Teenagers (Morales-Rodríguez & Suárez-Pérez, 2011) is another scale designed for adolescents, assessing four factors with 20 items: perspective-taking, solidarity, aid response, and assistance altruism.

There are also measures referred to external evaluation, conducted either by peers or by other people who conform the subject's surrounding environment. Examples are the Child Behavior Scale (CBS; Ladd & Profilet, 1996) or the Prosocial Behavior Questionnaire (PBQ; Weir & Duveen, 1981). The CBS has 17 items that are related to aggressive and prosocial acts towards peers, which are answered by their teachers. The PBQ, in turn, consists of 20 items describing prosocial behaviors that need to be answered by teachers as well as by parents. It assesses, then, prosocial acts both in school and in the family context.

On the other hand, one can find intermediate instruments that can comprise both self-report and other-report evaluations answered by people in the surrounding environment of the subject, such as the Prosocial Behavior Questionnaire (PBQ; Martorell, Aloy, Gómez & Silva, 1993). This inventory consists of a self-evaluation, with a total of 55 items, in which the opinion of parents, teachers and other people in the surrounding environment is considered for the subject of assessment. This multi-informant procedure may be a recommended approach given the limitations that occur around measurement by a single instrument of behaviors in general and of prosocial behavior (Eisenberg, 1982).

As observed, there are certain assessment instruments available to those who wish to use them. However, given the wide range of them,

it is of interest to get to know their current status, which ones are the most used, if they have been adapted to other cultures and languages, and if there are newer methods available. Taking the aforementioned points, the main aim of this study is to review the measurement instruments available to evaluate prosocial behaviors, the definition and types of prosocial behaviors that are included, and their recent revisions and adjustments.

Method

To conduct a relevant and sufficient literature search, it is necessary to acquire theoretical fundamentals of the most highlighted aspects of the subject. In this sense, this study highlights the cognitive content of moral psychology, since moral issues which are faced daily are required to find a balance between rights and interests, in order to attain an appropriate behavior for each situation (Martí-Vilar, 2010). Among the positive prosocial behaviors, motivational and emotional aspects are studied, such as empathy and altruism (Martí-Vilar, 2010). These can act as mediators in a situation of conflict, together with cooperation and support, which can reflect, for example, cognitive maturity (Martí-Vilar, 2010). These aspects should also be subject to psychometric criteria, and therefore, be subject to the minimum required levels to obtain valid interpretations and reliable scores in the contexts designed for their use (American Educational Research Association, American Psychological Association & National Council on Measurement in Education, 2014; Vallejo-Medina, et al., 2017).

On the other hand, it highlights many variables that can modulate decision-making and conflict, and the arousal of prosocial behavior. This is essential to understand the causal interrelationship between them from a multivariate angle, which is typical of human behavior (Harlow, 2005; Hayes, 2009). Such variables are personality, locus of control, socioeconomic status, self-perception, levels of satisfaction and happiness or identification with a group or with the subject that the

prosocial behavior is exercised towards, etc (Lousado & Martí-Vilar, 2010). In addition, and similarly, forming a part of moral psychology, the factors that come into play in thinking, reasoning and morality of the subject, are found. Given the quantity of factors that could have been measured, moral psychology related to this study will focus on prosocial behaviors. As defined above, these are considered as the positive social behaviors that are carried out to assist other people regardless of their motivation, whether it is altruistic or not.

The search is primarily focused on behavioral aspects, leaving out affective elements, such as empathy, cognition and motivations. Therefore, measuring instruments related to prosocial behavior, in any age, language and context are sought for. In order to try not to leave out any points worth reviewing, adjacent terms of the word prosocial, like "prosociality" and the Spanish "prosocialidad", were also used. However, given the diversity of terms that refer to the measure, not all could be selected. The following ones were used in the search: test, scale, questionnaire, instrument etc.

The nomenclature of the types of measures does not differ much from one language to another, and in practice they are interchangeable terms in a Spanish context. It was observed that "test", "instrument" and "questionnaire" were practically synonymous in meaning, since all of them refer to a list of questions destined to evaluate or measure knowledge or skills. The focus is often on measuring several related aspects. However, as for the term "scale", it is observed to be more reduced. Generally, it refers to a set of questions about a particular subject with different values on the same concept. It is less extensive than the previous terms, and more focused on the particular aspect being evaluated.

It was decided to conduct the search with the four mentioned words, "test", "questionnaire", "instrument" and "scale", which are the most used terms. Despite their similarity in terms of meaning, each author uses and considers them as the most appropriate for naming the measurement in the study. The search was divided into two different aspects. First, *initial search*. In this first search, it was attempted to

refine the concepts that were to be used, the number of reviews or articles that could be found related to the topic, and the most appropriate databases. In order to conduct a search which would be as accurate as possible, the corresponding terms that appear in "Thesaurus" should be used. Thesaurus is a multilingual dictionary with free network access that lets us know exactly which terms are the correct ones to be used when conducting a literature search. It also contains other aspects that are related to what one is looking for, in case one needs further information. To achieve access to the maximum possible related publications, the search was conducted entirely in English. It was found that the most appropriate term to use in the search for prosocial behavior, was the English "prosocial behavior". In the same manner, the terms referring to the measurements were also translated into English, being as follows: "test", "questionnaire", "instrument" and "scale". These terms were combined with the term "prosocial behavior", in order not to lose any data.

Second, the *systematic search* stage: in the second type of search, the most appropriate database was selected, since the terms that were to be used had already been previously selected. In this last phase, the articles that will appear in the references of this study were obtained. Once the most correct search terms were decided on, the online scientific information service was selected from various databases. Because of its prestige and quantity of studies and articles it contains, the Web of Science (WOS) was selected as the main base in the search for data. The articles that provided the most results were those which referred to the word "test" or "questionnaire", while the result that provided the least articles was the term "instruments. The inclusion terms used were as follows: a) items belonging to the WOS-database, b) full texts offered by the VPN of the University, c) years of search: from 1900 to 2017, preferably from the last decade), d) keywords, e) search for related articles by title: (aspects related to prosocial behavior and its measurement), f) reading and searching in the abstract afterwards (to ensure that measuring instruments really appeared), g) complete reading of the article in case the used instrument was mentioned in the summary,

or if there were clues that one could appear, and h) focus the search on the question posed at the beginning of this study.

On the other hand, the exclusion terms were as follows: a) articles related to prosocial behavior, but not to measuring instruments, and b) instruments related to moral psychology that refers to affective or motivational aspects, such as altruism and empathy. As reflected in Figure 1, the search that provided the most results after applying the criteria of inclusion and exclusion was the term “test prosocial behavior”, with a total of twenty useful results for the study as far as instruments are concerned. In total, fifty-six results were selected from this term, in addition to related articles. In the manual search, which made up the last part of the study, the articles that were found in several searches were eliminated. That is, those which appeared to be with the four terms which were selected. In this manual search, we find one Peruvian study (Meyer et al., 2011); with the addition of this last result, this left the study with the final fifty-seven articles which were used in the review. Finally, to ensure that the instruments that had been found not to have any results did not have related articles in other databases, another manual search was conducted. The name of each instrument was searched for in Google Academy and Dialnet, but in the same way as with WOS, no results of reviews or updates were found.

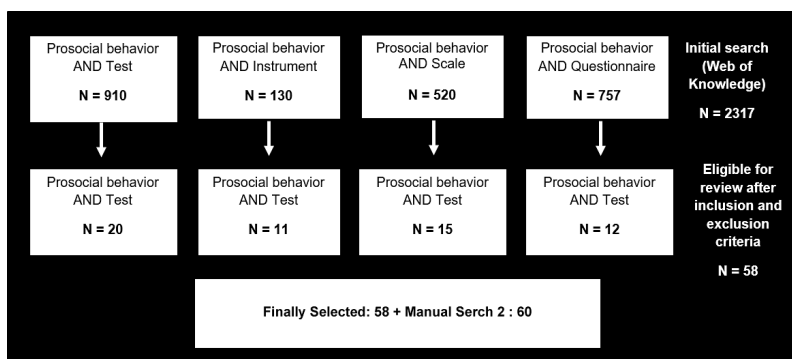


Figure 1. Flow diagram following PRISMA guidelines.

Results

To know the current state of the measurement instruments of pro-social behavior, the results of the search methodology were used, in an attempt to answer the question that was initially posed.

Child Behaviour Scale (CBS)'s Ladd and Profilet (1996) used in young people from ages fifteen to nineteen, and mentioned in the introduction of this work, was recently validated in 2013. In this case the implementation of the original six factors was valued in different contexts, for this oblique rotation as a psychometric test was used, which provided different results. In the analysis, samples of children from ages four to eleven, Americans and Italians, were compared, proving that the factors couldn't separate in the same way, depending on the population, which affects culture, social values, language, etc. The final result indicated that the test factors aren't the same in the American and Italian population; in the first case CBS is composed of 59 items of which only 35 constitute the six useful dimensions for test score.

The Italian version is structured according to the six original dimensions with a new dimension called Rules of Behavior, composed of a set of items not used in the original version; therefore, the items that aren't necessary in order to calculate a final total of 39 items were removed in this adaptation. The manual search also found a CBS validation study carried out in Peru on 256 children (between 2 and 6 years old) rated by 23 female teachers (Meyer et al., 2011). The analytical framework was the exploratory factor analysis, and several rules of factor extraction, oblique rotation (promax and oblimin) and orthogonal (varimax), and several models (between 4 and 6 factors) were used. The retained factor solution, and more theoretically consistent, was the four-factor model; one of them was the Prosocial Behavior factor (12 items, $\alpha = .85$). The strength of their items showed a range of factor loads between .80 and .40 and were factorially simple. The prosocial dimension also exhibited moderate but similar negative correlations with externalizing and internalizing behavior. This study highlighted some characteristics of the instrument that can add method variance,

such as the reduced number of options (3), and the grouping of dimensionally similar items.

Another of the instruments that appears in the literature search is the PTM, also mentioned previously, used mainly on adolescents, with a total of 23 items. Specifically, it talks about an interesting comparison of results amongst early adolescents who are between ten and fourteen years old, and late teenagers who are from fifteen to nineteen, comparing the answers to this scale.

After achieving the results, in the twenty-three items corresponding to the test, in its six different scales, it was noticed that in the group of the late teenagers the measuring was better, even better than in the group of early teenagers, but they concluded that more psychometric research is needed regarding this. This same instrument was recently adjusted to the Argentinian population, both in terms of content and language, to analyze the dimensions of prosocial behavior in children of this population, with very positive data with regard to reliability and validity in 2012.

Another data found recently that refers to the mentioned instruments was published last year in 2014 on the Teenagers Inventory of Social Skills (TISS) Inderdritzen and Foster (1992) along with the Scale of Attributions (SAS). Checking the relationship between prosocial behavior and the results obtained by students in Maths and English Language subjects, the results indicate that the more prosocial students tend to have internal attributions concerning their own yield increase, and have a greater internal locus of control than those less prosocial students. These students, who generally got better academic results in these two subjects, were those who scored higher in the instrument of prosocial behavior in comparison to the others, who also attributed their low notes to external causes. The scores were significant in the Spanish population in which they were used, the reliability and validity data of TISS results were positive and showed results that related the prosocial behavior to the academic yield of these two subjects. It emphasizes the importance of prosocial behaviors in academic yield.

In the Prosocial Behaviour Questionnaire (PBQ; Gómez & Silva, 1993), the 55 items of the test were adapted for the teenage population between the ages of ten and seventeen years old on the Argentinian population, which obtained a Cronbach's alpha of $\alpha = .76$; on the Spanish population, with a total in the same psychometric test of .84 and in Colombia with a total of .68 in which contents, for a better understanding of the items, were adapted according to the context. Recently, in 2011, a review was performed specifically on the Valencian population with 510 students between the ages of 10 and 17, with an α of .78 that shows good reliability.

In 2012, a validation of the psychometric properties of BAS-3 Silva and Martorell (1987) for teenagers was carried out in Argentina. The validation was made with a group of teenagers between 10 and 15, with their parents' consent; analyzing the 65 items making up the scale, discarding the 10 items of sincerity, using an exploratory, factorial analysis and a sedimentation graphic showing the best group for this population was focused on five factors: the scale of social shyness anxiety remained as the first factor, but unlike the Spanish version, it consisted of 17 items instead of 14; the second, which was called self-control in social relationships, which in this test included three additional items; the third factor was the scale of shyness, which remained like the original; the fourth, consideration for others; and finally, the fifth was leadership, which had four more items than the original. On the other hand, it obtained a Cronbach's α of .68 to .71, indicating good reliability for scores, although the total score of the battery wasn't established.

The Faculty of Psychology of the Michoacana University in San Nicolás Hidalgo (Mexico), validated in 2010 the Prosocial Skills Scale for Adolescents (EHP-A) by Morales-Rodriguez and Suárez-Pérez (2011) in the Mexican population, with a group of 1172 adolescents within an age range of 11 to 25 years old, with a factorial analysis of the main test components. They grouped a total of 52 items which analyzed through the statistical program SPSS finally leaving a new version of 31 items distributed in 6 factors with α of .86, showing a good validity and internal consistency between .67 and .71. The terms

were adapted in language meaning to improve the understanding of the items. In addition to the tests which have been discussed in the introduction of this work, documents detailing the use of other methods or scales that currently can be used to measure prosocial behaviors were selected.

One of the most interesting, referred to a revised questionnaire Prosocial Reasoning (PROM; Carlo, Eisenberg & Knight, 1992), deals with the building of a pictorial version of this test for children between seven and eight years of age. This specific instrument evaluates the reasoning that the subjects perform when facing a problem or situation where the answer implies a help in behavior. The results discriminate between different types of reasoning; the hedonistic, the need-oriented, the approval, the stereotyped and the internalized. Therefore, it evaluates fictitious situations and results which placed placed the subject within these moral arguments.

In this new version which is used or intended to be used, is the approach of PROM situations but using alternative response pictorial forms to improve the understanding of children and achieve very accurate results. The reliability and validity of this test is considered high although exact data of this pictorial version is not discussed. In the study, the results among children who respond to illustrations and those who don't were stated, improving the response rate of the first group and can be especially useful for children with problems in handwriting. According to one of the articles found, in 2002 the PROM was adapted and validated in the Spanish population with a score reliability (α) of .71 to .85 in all scales. Finally, other validations and adaptations of this test were made in 2012 for the Chinese population with 556 students, adapted to the level of language and content of the items.

Relating to prosocial behavior with emotional and behavioral aspects, validity evidences were recently performed with the Brief Scale of Prosocial Perception (BAPPS; Taylor & Wood (2014). It is useful in educational and sport contexts, and according to information given for young people between 11 and 16, with open questions about aspects of prosocial behavior, they obtained good score reliability ($\alpha = .78$).

Related to prosocial behavior, made valid in 2013 and used by teaching professionals, the Volunteer Scale (FSPV; Law, Shek & Ma, 2015) analyzes the influence of patterns, family and the school in volunteer behavior, with 27 items that analyze the importance of the social environment in the development of prosocial behavior of young people between 11 and 15 years of age.

In the context of sports behavior, prosocial behavior is linked to the development of the group for sports performance. The PABBS (Kavussanu et al. , 2015) has been developed to assess prosocial and antisocial behavior through four subscales (aggressiveness and competitiveness, moral attitudes, goal orientation, and help behavior). The authors (Kavussanu et al. , 2015) report good psychometric properties but without data that can be corroborated.

In the field of traffic safety, the University of Valencia together with the Institute of Traffic and Road Safety (Spain) designed and validated a scale. It refers to prosocial and antisocial behavior in this aspect called Inventory of prosocial-antisocial behaviour. López de Cozar et al. (2008) builds the prosocial scale taking into account several subscales; altruism, assertiveness and empathy, developing an inventory representing each of these subscales, scoring all of them from 1 (never) to 4 (always). This forms a final questionnaire of 30 items together with the observation of participants who obtain an α of .81 and .75 showing the relationship between road and prosocial behavior.

An instrument repeatedly mentioned, associated with prosocial behavior, is the Scale of Difficulties and Strengths (SDQ; Goodman, 1994), which evaluates emotions and behaviors of children, exploring 25 attributes divided into six scales, of which one is prosocial behavior. This scale of prosocial behavior is used on the Chinese population (adapted in 2012) but is also used in cases of autism as shown in a study in 2010 where the difference between children trained in prosocial behaviors and those who do not receive guidance was found. The scale gets good data regarding score reliability ($\alpha = .78$, China) and in the original test is .82. A measure of family support, the Family Helping Inventory (FHI; Midlarsky, Hannah & Corley, 1995), was the

last to be revised. According to the results of the search, in 1995 this inventory is divided into two scales, and is used in teenagers between 12 to 23; the first scale refers to the relationship with siblings, and prosocial behaviors, and the second one is the relationship with parents and prosocial behaviors learned from their children and themselves. The last review was conducted with a total of 202 adolescents and their families, all residents in the United States, with a total of 78% white, 20% black and 4% Asian or other racial group. A good validity of .87 was observed. The ANOVA and MANOVA tests, emphasize sex significant differences, with better results for women. Its factor structure was adjusted to a model of oblique factors.

Discussion

The study and research of prosocial behavior and evaluation methods is relatively new and it shows a growing progress over recent years; from 2002 to 2017 publications related to the term prosocial doubled. Psychology began to focus its attention on positive behaviors that are triggered almost naturally: as support behavior, either when faced by situations where assistance is requested or situations which arise spontaneously with no identifiable cause. These behaviors can be taught and empowered throughout the life cycle. Prosocial behaviors are those positive behaviors which developed despite feelings or motivations that would prompt one to avoid altruism and empathy. The first instruments dating back to 1981 (e.g., PBQ) generated for educational contexts, where based on answering the student's own teacher with items for information regarding prosocial behavior of children. The next measure published was BAS-3 in 1987, which extended the age range of the assessed teenagers up to 19 responding themselves to its 65 items. This test was validated last 2012 with teenagers between 10 and 15 years of age in Argentina, where it was necessary to change some of the wording, language items and factors in the Spanish version.

Table 1

Instruments reviewed of the prosocial construct

Test name	Characteristics	Languages	Psychometric data	New reviews
(PBQ) Prosocial behaviour questionnaire (Wéir & Duveen, 1981)	20 items applicable to the all school stage responsive to parents and tutors. Likert 3 response scale.	English & Spanish	$\alpha = .93-.94$	-
Family Helping Inventory (Midlarsky, Hannah & Corley, 1985)	56 items. Consisting of 2 scales: EAH helps siblings, helps parents EAPP	English	$\alpha = .81$ r between scales: .75	1995. Review published by the same creator; black, white and Asian population (referencia)
(BAS-3) Battery socialization for adolescents (Silva & Marorell, 1987)	75 items. Two possible answers, dichotomous for children over 6 years old and adolescents among 11-19.	Spanish	$\alpha = .73-.92$	2013. Review and adaptation in Argentine population: Lacunza, Caballero & Contini (2013)
(TISS) Teenagers Inventory Social Skills (Inderbitzen & Foster, 1992)	40 items. Consisting of 2 scales: prosocial and antisocial behavior, Likert 6 scale. Relationship with peers. Adolescents among 12-18.	English & Spanish	$\alpha = .72$ $r_{\text{Test-retest}} = .90$	2014. Relationship of prosocial behavior and academic performance. Spanish adaptation: Inglés et al. (2014)
(PROM) Prosocial Moral Reasoning (Carlo, Einsenberg & Knight, 1992)	Moral dilemmas for all ages	Spanish and English	$\alpha = .85$	2002: Spanish adaptation: Mestre, Frías-Navarro, Samper & Tur (2002) 2012: Validation Chinese population: Lai, Siu, Chan, Shek. 2010: New pictorial version (Lemos & Richaud, 2010)
(CCP) Cuestionario de conducta prosocial (Gomez & Silva, 1993)	55 items of self-evaluation and answered by parents or tutors. Likert 4. Adolescents among 10-17.	Spanish	$\alpha = .72$ r : Pearson .82	2011. Spanish population revision 2014 Adaptation and comparison between Spain, Colombia and Argentina (Mesurado et al., 2014)
(PB) Prosocial Behaviour scale (Midlarsky, Hannah & Corley, 1995)	15 items evaluate behaviors such as altruism, trust and likeability. Likert 3. Children up to 12 years old.	English & Spanish	$\alpha = .71$	-

Family Helping Inventory (Midlarsky, Hannah & Corley, 1995)	67 items. Two scales, one for parents and one for behaviors with siblings. From 12 to 23. Likert 4	English	$\alpha = .73-.80$	-
(CBS) Child Behavior Scale (Ladd & Proffiter, 1996)	17 items (12 items in Peruvian study)	Spanish, Italian and English	$\alpha = .93$ $\alpha = .85$ y .95 (12 items in Peruvian study)	2013: Validation and comparison between American and Italian population, modification of the items (Marcone & Costanzo, 2013) 2011: Validation study carried out in Peru on 256 children (between 2 and 6 years old) rated by 23 female teachers (Meyer et al., 2011).
(PTM) Escala para la evaluación de prácticas prosociales (Carlo & Randall, 2002)	23 items	Spanish and English	$\alpha = .74$ to .85	2003: Adjustment Argentina population. Study on differences between early and late teens. By: Carlo, Hausmann,, Christiansen & Randall
(PSA) Scale for measuring prosocial behavior in adults (Caprara, Steca, Zelli & Capanna, 2006)	17 items	Spanish and English	$\alpha = .91$	-
Cuestionario de conductas Prosocial. (Sánchez Quejía, Oliva & Parra, 2006)	7 items	Spanish	$\alpha = .67$	-
(EHP-A) Escala de habilidades prosociales para adolescentes (Morales-Rodríguez & Suárez Pérez, 2006)	20 items	English & Spanish	$\alpha = .86$	2010: Review and adapt the instrument to the Mexico population. Morales-Rodríguez and Suárez-Pérez
Prosocial-antisocial en el tráfico. López de Cozar, E. et al.(2005)	30 items	Spanish	$\alpha = .81$	-
(BAPPS) Escala breve de percepción prosocial (Taylor & Wood, 2014)	24 items	English	$\alpha = .78$	-
(PABSS) Prosocial antisocial behaviors in sport (Kavussanu et al., 2015)	4 subscale for measuring the prosocial and antisocial behavior	English	-	The Prosocial and Antisocial Behavior in Sport Scale: Further evidence for construct validity and reliability

Later, in 1992, the TISS (40 items) was published, in order to measure antisocial and prosocial behavior in adolescents in relation to their peers. The most recent work (authors, 2014) related the scores of the TISS to the scale of attributes (SAS; AUTHORS, YEAR), in which positive correlations were found between prosocial behavior and academic yield in language and mathematics. It would appear that prosocial behavior converges with other aspects (e.g. study habits, academic self-efficiency, etc.) which promote good academic results. Two validation studies of two instruments, PB and CCP, were published in 1993. The PB has 15 items and is answered by children; and the CCP (55 items) is a measure with several versions (adolescents, parents and teachers). The latter was validated in the Valencian population in Spain (Martorell, González, Ordoñez & Gómez, 2011) and the Colombian population (Mesurado et al., 2014).

From a different perspective, the Inventory of family support for teenagers between 12 and 23 was published, in which prosocial behaviors are analyzed from two different points of view: the relationship with siblings and parents, observing an increased support between siblings rather than with parents. Three years later, focused on the behaviors of aggression, shyness and prosocial behavior of children, CBS was published and it was recently validated in 2013 in which the Italian and the American population was compared, forming a new structure of the items for each population, with new positive results in terms of their reliability and validity in spite of changing the structure of the questionnaire according to the population to which it was applied. Previously, similar modifications were made in other Latin-American studies (Peru). With the new century, starting from 2002 the publications were retaken starting with PTM, which consists of six scales and a total of 23 items for teenagers also. It was validated in the Argentinian population in 2012 and adapted for language and content level. In the same year of its publication a study was performed in which scores of early adolescents (10-14 years) and late adolescents (15-19 years) were compared, with better reliability in the first group. Three years later, in 2005, analyzing aid actions, and helping and sharing

with others, PSA was published breaking the line of analysis of others; this instrument focuses on assessing adults. Barely a year later, in 2006, the NGO's appeared, an instrument generated in Spanish. This was a new instrument focusing on the importance of the influence of groups in the development of behaviors and related activities for teenagers. Subsequently, in 2011, the EHP-A adapted for the Mexican adolescent population was published, but expanded the age range from eleven to twenty-five years. Two important changes were item reduction (now, 31), and language adaptation

But recently it seems that the study of prosocial behavior begins to leave the school context and teenagers, covering more areas such as sports, road safety and even the relationships between prosocial behavior and volunteering. Also, changes were found in some of the classical instruments which we have commented on in this section and the new version of pictorial PROM to improve the response capacity of children between 7 and 8 years of age.

Numerous instruments which focus on the early stages of development, from childhood to late adolescence are being implemented, which is very interesting because knowing the current status of prosocial behaviors in this age can help to empower them. Including prosocial behaviors in the academic curriculum from early age helps to strengthen the development not only of better students but of better citizens as well. Therefore, instruments like BAPPS are having their use expanded from an educational context to a sports context for young people between 11 and 17 years of age, to analyze the behaviors that develop according to the type of sport practiced among young people, whether they practice sport professionally or not, if they practice sport in a group, etc. It lets us know the prosocial behaviors that are shown in other contexts by young people. Also related to the field of sport, in 2015 PABSS was being developed to evaluate both prosocial behaviors as competitive in this area which is attracting wide interest in recent years.

In the area of road safety, no classical instrument measuring prosocial behavior was at first found, but recently the University of Valencia

along with Traffic have generated and validated the Inventory of pro-social-antisocial behavior. It uses items from classic scales to establish the inventory and analyze the influence of these behaviors on driving.

In spite of the extensive research that has already been developed, prosocial behaviors are a topic of constant interest. In the embodiment of the literature search, it was found that after 2002, publications related to the term prosocial behavior grew exponentially year after year and more and more areas were included. The explanation may be due to the new century, a change that was marked by the development of a new psychological trend: positive psychology that focused its efforts on promoting positive behaviors in prevention, leaving behind the focus of attention on pathology, negative behaviors and disease.

As we have commented, prosocial behavior focuses precisely on this positive trend. Although the origins of the studies tended to focus on the negative part of the conduct, now it has become more important because it has been found that promoting prosocial behaviors at all levels in children, youth and adults leads to better coexistence, school and personal development. But more research on this is needed. For example, the study of adulthood has few known instruments, although articles were found in which studies of prosocial behavior related to the world of work were mentioned. Some questions taken from instruments created for children have been used and adapted, but without enough foundation. The same happens in studies for older ages. It can be safely stated that projects and activities to promote prosocial communication and prosocial behavior in old age improve the quality of life of this group of the population but measuring instruments to evaluate and improve them are yet unknown.

Another range of the population about which we have no information yet is people with difficulties or disabilities. The only studies found dealt with autistic children in which the study of the factor of the intervention of the empowerment of prosocial behavior was taken from one of the scales making up the Strengths and Difficulties Questionnaire (SDQ). But it would be interesting to know if one can create, adapt or modify some instrument for those people with difficulties or

disabilities in whom we can appreciate prosocial behaviors, but without being able to measure their progress. More psychometric research into these issues is most necessary.

About prisons, numerous programs are known whose aim is to promote prosocial behaviors in rehabilitating prisoners to avoid the problems that were generated during the years in prisons when there was no support for the improvement of people serving sentences. Although improvement programs are now in use, we have not found in this search any instrument for evaluating the implementation of these programs (Álvarez, 2014).

Finally, we have detected some characteristic issues in the analytical and psychometric approach used for the validation of the instruments; for example, there has been a heterogeneous to analyzing the data, but essentially based on the Classical Tests Theory, and on the exploratory framework of factorial analysis; the predominantly reported reliability factor was internal consistency, and there is a lack of direct cross-cultural comparisons. Also, it has not been frequent to investigate the equivalence of differential item functioning of the items between local or international groups, and therefore, the extent to which response bias is present is not known. Apparently, the application of advanced methods of psychometric analysis is still an emerging practice in the validity studies of the instruments of prosocial behavior. We need relevant guidelines to structure and improve the phases of adaptation of instruments of prosocial behavior (e.g., American Educational Research Association et al., 2014; Vallejo-Medina et al., 2017); also, more research and work with this type of behavior because, as already mentioned, it not only improves the relationship between students, staff and families, but also promotes positive prosocial behavior.

Regarding the limitations of the study, in the first place, we cannot be sure that the search obtained all the relevant sources, and therefore, our results may be an approximate identification of the studies on the measurement of prosocial behavior. At this point, it would be extremely unlikely that a systematic review would achieve a coverage of 100% effectiveness. On the other hand, our search did not include

articles in press, whose content can provide information directly useful to identify other relevant instruments. Along with the natural delay of the revision process of this manuscript, other manuscripts may not be included in this moratorium. Finally, other aspects of the reviewed articles were not addressed in the present review, such as the sampling method, other finer analytical decisions (for example, the factor extraction method, the inter-item correlation matrix, etc.); but the sources identified in the present study will serve to easily track them and obtain other objective information.

The implications of our results are accommodated with the usual implications of other review studies; that is, that we provide information to make decisions to researchers and psychosocial intervention personnel, about the choice of relevant instruments, and their evaluation for specific objectives. This also suggests a partial information available on the state of the art in the development of measures of prosocial behavior, its processes of inter-cultural adaptation, and the effectiveness to represent the construct of interest. Our results also put the first steps to decide on advancing meta-analytical studies, such as the generalization of reliability. Although our study does not provide accurate information to obtain analyzable information for a meta-analysis, we do provide information on some methodological aspects that will serve to make preliminary decisions about the eligibility of these reviewed studies.

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