Measure of perceived social support during adolescence (APIK)

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Social support has become a subject of great interest in different scientific disciplines, what has generated a great diversity of definitions that have resulted in a high quantity and heterogeneity of measuring instruments. In addition, there are hardly any instruments that differentiate the sources of social support despite it is considered a vital component. The objective of this investigation is the creation and validation of a questionnaire to measure perceived social support (APIK) in Secondary School. 323 students of Secondary Education of a high school of Vitoria-Gasteiz aged between 12 to 18 years old (M=14.41; DT=1.18) participated in the study, being 128 of them boys (40%) and 195 girls (60%). The questionnaires APIK, AFA-R and HBSC were used. The obtained results of the exploratory factor analysis confirm the three-dimensional structure (family, friends and teachers) of the questionnaire, which offers excellent indexes of internal consistency and reliability. In consequence, the new questionnaire manages to resolve the limitation of other measuring instruments that evaluated the sources separately, did not fit with the theoretical model of social support; were too long, etc.

Keywords: Perceived social support, validation, questionnaire, exploratory factor analysis.

Medida del apoyo social percibido (APIK) en la adolescencia. El apoyo social se ha convertido en un tema de gran interés en distintas disciplinas científicas lo que ha generado una gran diversidad de definiciones que han derivado en una elevada cantidad y heterogeneidad de instrumentos de medida. Además apenas existen instrumentos que diferencien las fuentes de apoyo social pese a considerarse un componente vital. De este modo, el objetivo de esta investigación es elaborar y validar un instrumento para medir el apoyo social percibido en Educación Secundaria. Participaron en la investigación 323 estudiantes de Educación Secundaria de un instituto de Vitoria-Gasteiz con edades comprendidas entre los 13 y 18 años (M=14.41; DT=1.18), de los cuales 128 eran chicos (40%) y 195 (60%) chicas, a los que se aplicaron los cuestionarios: APIK, AFA-R y HBSC. Los resultados obtenidos confirman la estructura tridimensional (familia, amigos y profesorado) del cuestionario, con excelentes índices de consistencia interna y fiabilidad. En consecuencia, el nuevo cuestionario consigue solventar la limitación de otros instrumentos de medida que evaluaban por separado las fuentes, no encajaban con la concepción teórica del apoyo social, eran demasiado extensos, etc.

Palabras clave: Apoyo social percibido, validación, cuestionario, análisis factorial exploratorio.

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Since the nineteen-seventies (Barrón, 1996), when Cassel (1974a, 1974b), Cobb (1976) and Caplan (1974) first consolidated the construct as an object of study, social support has become an issue of great interest (Alemán, 2013), giving rise to a wide variety of definitions and measurement instruments (Azpiazu, 2016). This makes its specific conception difficult (Terol et al., 2004), and although it can be understood generically as the set of resources people provide each other (Cohen, Mermelstein, Kamarck, & Hoberman, 1985), the construct continues to be ambiguous in terms of its definition, composition and evaluation (Sarason & Sarason, 2009).

Of the many ways in which social support can be understood, two definitions stand out as being the most widespread: that proposed by Tardy (1985) and that proposed by Lin (1986). Tardy (1985) identified five hierarchically-ordered dimensions: (1) *Direction:* referring to whether support is being given or received; (2) *Disposition:* the assessment of the availability of the support, as well as real support; (3) *Description/evaluation:* how satisfied people feel with their support; (4) *Content*: the type of support, with emotional (providing empathy, affection, etc.), instrumental (helpful behaviors), informational (giving advice) and appraisal (feedback) support being the most common; and (5) *Network*: i.e. the different sources providing support.

However, it is the second definition, proposed by Lin (1986), that will be taken as a reference in this study, since it is one of the most comprehensive (Ramos, 2015), understanding social support as the "perceived or actual instrumental and/or expressive provisions supplied by the community, social networks, and confiding partners" in both everyday situations and moments of crisis (Lin, 1986). This definition rests on three key independent pilars:

-Support provided and support perceived: A distinction is made between the actual support that is offered to someone and the support perceived by the recipient (Herrero, 2004).

-Context in which the support occurs: Lin (1986) refers to the help that may be supplied in each context: (1) *Community:* superfluous relationships. (2) *Social networks*: the most common social contacts (teachers, colleagues, etc.). *(3) More intimate and trust-based relationships:* family and close friends.

-Types of support: A distinction is made between support to achieve a specific goal (instrumental) and support as an end in itself, to satisfy emotional needs (expressive) (Lin, 1986). This distinction is not the most widely accepted, with that proposed by Schaefer, Coyne and Lazarus (1981) proving more popular. According to these authors' proposal, there are three types of support: (1) *emotional support*, linked to the affective sphere (attachment and comfort); (2) *tangible support*, or the material help or actions aimed at resolving problems (donations, care, etc.); and (3) *informational support,* or giving advice and information such as feedback.

The majority of studies do not distinguish between the sources of social support within the dimensions of the construct (Hombrados & Castro, 2013), despite this factor being

considered a vital component during adolescence (Musitu & Cava, 2003). It is therefore important to study these sources separately (Mendoza, Carrasco, & Mendoza, 2000) in order to understand the real experience of support (Hombrados & Castro, 2013).

Although some studies have focused on family and friends (Ramos, 2015), ecological models also highlight the school as a key social context (Hombrados & Castro, 2013). Adolescents spend a large percentage of their time at school with their teachers, and are heavily influenced by them (Eccles & Roeser, 2003). This line of thinking is also consistent with that advocated by Vieno, Santinello, Galbiati, and Mirandola (2004), who argue that it is the social support provided by teachers, family and peers that is most important during adolescence.

Social support measurement instruments

During adolescence, social support is a strong protector against a wide range of adversities, and as such is necessary for ensuring healthy development (Demaray & Malecki, 2002). It is therefore vital to have valid, reliable measurement instruments that guarantee a precise evaluation of social support during this development period, as well as in the educational environment. Unfortunately, following an analysis of available questionnaires, the conclusion was reached that such an instrument does not yet exist.

The disparity of criteria (Laireiter & Baumann, 1992) regarding social support has given rise to a large number and variety of questionnaires (Alemán, 2013), with only a minority being designed specifically for adolescents (Pastor, Quiles, & Pamies, 2012).

The first problem is that the majority of the instruments examined fail to analyze the source of the support provided (Barrera, 1980; Barrera, Sandler, & Ramsay, 1998; Bridges, Sanderman, & van Sonderen, 2002; Cutrona & Russell, 1987; Kliem et al., 2015; Kempen & Van Eijk, 1995; Trujillo et al., 2012). Secondly, many were developed for very specific contexts, such as the clinical practice (Holden, Lee, Hockey, Ware, & Dobson, 2014; Moser, Stuck, Silliman, Ganz, & Clough-Gorr, 2012; Richman, Rosenfeld, & Hardy, 1993; Sherbourne & Stewart, 1991) and sport (Freeman, Coffee, & Rees, 2011).

Of those questionnaires which do identify sources, some analyze each source individually, measuring the support provided by family separately from that provided by friends (Procidano & Heller, 1983; Domínguez, Salas, Contreras, & Procidano, 2011) or focusing only on the support supplied by teachers (Moreno et al., 2012). Others analyze only two sources together: family and friends (Alemán & Calvo, 2006; González & Landero, 2014; Hardesty & Richardson, 2012; Macdonald, 1998).

Of those which focus on the family, some instruments include siblings (Scholte, van Lieshout, & van Aken, 2001) or romantic partners (Calvo & Díaz, 2004; Furman & Buhrmester, 2009; Zimet, Dahlem, Zimet, & Farley, 1988), despite the fact that these figures are not considered principal sources of support during this life stage (Hombrados & Castro, 2013). Moreover, most are too long (Gordon-Hollingsworth et al., 2015).

A few of the questionnaires analyzed measure all three dimensions of social support together (family, friends and teachers), but they do so along with other sources (classmates, grandparents, etc.). This either renders the questionnaire overly cumbersome (Malecki & Demaray, 2002) or prevents the items from correctly fitting into the theoretical conception of social support (Furman & Buhrmester, 1985; Harter, 1985; Pastor et al., 2012).

In light of these limitations, a need was identified for a new instrument to evaluate perceived social support among school-going adolescents aged between 12 and 18 years. The questionnaire should divide the construct into three dimensions (support from family, friends and teachers), each comprising three subscales (emotional, tangible and informational support). The aim of this study was therefore to develop and validate such an instrument for measuring perceived social support in Secondary Education.

METHOD

Participants
The initial sample comprised 331 students, of which 8 were eliminated due to a failure to respond to more than 1% of the items, and 6 were eliminated due to inconsistent response patterns. The final sample therefore comprised 323 secondary school students aged between 13 and 18 (*M*=14.41; *SD*=1.18).

All were from a semi-private school (i.e. a private school which receives some state funding) in the province of Álava with a medium-high socioeconomic level. As regards the sex of the sample group, 60.4% were girls and 39.6% boys, with both groups being evenly balanced (χ^2=4.87; *p*>.05). The sample was selected using an incidental procedure.

Measurement instruments
Participants were asked to complete three questionnaires, all with 5-point Likert-type response scales. To evaluate perceived social support, two additional questionnaires were administered alongside the one being validated in this study.

Firstly, to assess perceived social support from family and friends, the *Perceived Social Support from Family and Friends* (AFA-R) questionnaire by González & Landero (2014) was used. This instrument evaluates two dimensions (support from family and support from friends) and is made up of 15 items with an internal consistency of *α*=.87 for this study.

Secondly, the teacher support subscale of the *HBSC questionnaire* (Moreno et al., 2012) was used to measure perceived social support from teachers. This scale comprises 8 items and had an internal consistency of *α*=.92 for this study.

Procedure
A meeting was held with the management team of the school, and once official agreement to participate had been received, the authors went to the classrooms to administer

the questionnaires to students. All students signed an informed consent form prior to participating.

Questionnaires were administered individually and collectively by the authors in class time and in the classrooms themselves. The battery had previously been tested to ensure that it took no longer than 30 minutes to complete.

Data analysis

Subjects who failed to respond in over 1% of the items were eliminated, along with those with aberrant response patterns detected using the clusters test. Missing values (less than 1%) were replaced using the linear trend estimation at the point.

Next, a normality analysis was conducted, revealing some normal and some non-normal data. Although this was taken to indicate a violation of normality, the skewness and kurtosis values were not too far from normal and, moreover, parametric tests are sufficiently robust to this degree of violation (Chok, 2010; Edgell & Noon, 1984; Schmider, Ziegler, Danay, Beyer, & Bühner, 2010). The decision was therefore made to use the data.

To validate the results, a statistical analysis of the items was conducted, along with an exploratory dimensionality study (factorization of the main axes iterated with oblique rotation). The internal consistency of the instrument was calculated (Cronbach's alpha) and, finally, to calculate the external validity, the APIK questionnaire was correlated with the other two questionnaires which evaluate the same variables (AFA-R and HBSC).

RESULTS

Validation of the measurement instrument

The questionnaire was found to have adequate psychometric characteristics in terms of factorality, internal consistency and validity. To determine its dimensionality, diverse data relating to the psychometric characteristics of the 27 items of the APIK questionnaire were analyzed: minimum and maximum, central tendency, variability, skewness, kurtosis and the alpha value if the item was eliminated (see table 1).

The minimum and maximum data were correct, since they oscillated between 1 and 5. The mean scores for the items were between M=3.04 and M=4.60, with the arithmetic means being above the recommended halfway point of the scale (Nunnally & Bernstein, 1995). The standard deviations oscillated around the recommended value of 1 (Carretero-Dios & Pérez, 2005), exceeding this value in various cases and revealing reduced values for only six items (i6, i16, i20, i23, i27 and i36). In general, the recommended range is [-2, 2] for skewness (Bandalos & Finney, 2010) and [-5, 5] for kurtosis (Bentler, 2005). These conditions were met in all cases. Finally, the elimination of none of the items was found to improve the Cronbach's alpha value ($\alpha = .95$), which is a good indication.

Table 1. Descriptive characteristics of the APIK items

	Min.	Max.	Mean	SD	skewness	Kurtosis	Alfa if the item is eliminated
APIK06_FAM_EMO	1	5	4.60	.759	-2.000	3.941	.954
APIK07_FAM_EMO	1	5	4.47	.811	-1.553	1.915	.954
APIK09_FAM_EMO	1	5	4.37	.999	-1.644	1.994	.954
APIK11_FAM_MAT	1	5	4.24	.808	-.845	.296	.955
APIK13_FAM_MAT	1	5	4.14	1.062	-1.022	.153	.955
APIK16_FAM_MAT	1	5	4.50	.793	-1.685	2.863	.955
APIK20_FAM_INF	1	5	4.58	.706	-1.862	3.684	.955
APIK21_FAM_INF	1	5	4.39	.854	-1.415	1.600	.955
APIK23_FAM_INF	1	5	4.54	.739	-1.637	2.394	.955
APIK27_AMI_EMO	1	5	4.53	.777	-1.807	3.041	.955
APIK29_AMI_EMO	1	5	4.51	.805	-1.740	2.568	.955
APIK30_AMI_EMO	1	5	4.47	.801	-1.565	2.265	.955
APIK36_AMI_MAT	1	5	4.38	.767	-1.173	1.234	.955
APIK38_AMI_MAT	1	5	4.23	.923	-1.087	.620	.955
APIK39_AMI_MAT	1	5	4.13	.967	-1.140	1.029	.955
APIK41_AMI_INF	1	5	4.32	.868	-1.396	1.961	.955
APIK45_AMI_INF	1	5	4.33	.826	-1.255	1.447	.955
APIK46_AMI_INF	1	5	4.13	.894	-.870	.271	.955
APIK48_PROF_EMO	1	5	3.45	1.043	-.343	-.279	.954
APIK50_PROF_EMO	1	5	3.21	1.133	-.217	-.601	.954
APIK53_PROF_EMO	1	5	3.04	1.192	-.117	-.741	.954
APIK56_PROF_MAT	1	5	3.43	1.197	-.533	-.566	.954
APIK59_PROF_MAT	1	5	3.75	1.029	-.651	.099	.954
APIK60_PROF_MAT	1	5	3.50	1.082	-.447	-.391	.954
APIK62_PROF_INF	1	5	3.74	1.013	-.779	.389	.954
APIK66_PROF_INF	1	5	3.66	.924	-.406	-.124	.954
APIK68_PROF_INF	1	5	3.42	1.106	-.386	-.402	.954
Total Alfa							.955

Note. Legend: Min.=minimum; Max.=maximum; SD=standard deviation

Before conducting the exploratory factor analysis, steps were taken to verify the adequacy of the KMO index (.90) and Bartlett's test ($\chi^2_{[351]}$=4538.97; p<.001) (Kaiser, 1970; Montoya, 2007). A 3-factor solution was extracted with a total percentage of explained variance of 50.53% and adequate values of around .50 for commonalities (see table 2) (Hair, Anderson, Tatham, & Black, 2004).

To test the internal consistency of the APIK questionnaire, Cronbach's alpha was used, obtaining a value of α=.90 for the total questionnaire, a value well above the recommended minimum of .70 (Nunnally & Bernstein, 1995).

External validity was tested through convergent validity, based on an analysis of relations between the study test (APIK) and others with the same measurement objective: the AFA-R (perceived support from family and friends) and HBSC (perceived support from teachers).

Table 2. APIK's commonalities and factorial weights

	Commonalities	EFA		
		1	2	3
APIK06_FAM_EMO	.583			-.755
APIK07_FAM_EMO	.599			-.768
APIK09_FAM_EMO	.486			-.664
APIK11_FAM_MAT	.323			-.530
APIK13_FAM_MAT	.349			-.558
APIK16_FAM_MAT	.516			-.715
APIK20_FAM_INF	.597			-.798
APIK21_FAM_INF	.570			-.764
APIK23_FAM_INF	.535			-.719
APIK27_AMI_EMO	.431		.652	
APIK29_AMI_EMO	.396		.616	
APIK30_AMI_EMO	.609		.775	
APIK36_AMI_MAT	.414		.623	
APIK38_AMI_MAT	.397		.616	
APIK39_AMI_MAT	.365		.598	
APIK41_AMI_INF	.419		.650	
APIK45_AMI_INF	.614		.795	
APIK46_AMI_INF	.451		.626	
APIK48_PROF_EMO	.529	.700		
APIK50_PROF_EMO	.566	.697		
APIK53_PROF_EMO	.536	.723		
APIK56_PROF_MAT	.396	.631		
APIK59_PROF_MAT	.546	.734		
APIK60_PROF_MAT	.739	.846		
APIK62_PROF_INF	.510	.730		
APIK66_PROF_INF	.559	.749		
APIK68_PROF_INF	.610	.767		

Note: 3=family; 2=friends; 1=teachers

All items saturated within the factor for which they were designed with factor loadings far above the minimum value of .40 (Table 2) (Lozano & De la Fuente, 2009; Morales, 2011), reaching more restrictive minimum values of .70.

Table 3. Correlations among APIK, AFA-R and HBSC

		AFA-R Family	AFA-R Friends	AFA-R Total	HBSC Teachers
APIK FAMILY	Pearson	.804***	.333***	.703***	.328***
	P	.000	.000	.000	.000
APIK FRIENDS	Pearson	.302***	.692***	.569***	.195***
	P	.000	.000	.000	.000
APIK TEACHERS	Pearson	.372***	.123*	.308***	.842***
	P	.000	.027	.000	.000
APIK TOTAL	Pearson	.658***	.483***	.688***	.680***
	P	.000	.000	.000	.000

Note. *p<.05; **p<.01; ***p<.001

The APIK family support dimension (Table 3) was found to correlate closely and positively with the same dimension of the AFA-R questionnaire (r=.804). The APIK support from friends dimension also correlated closely and positively with the same dimension of the AFA-R (r=.692). This trend was also observed in the case of the support from teachers

dimension and the HBSC (*r*=.842). Moreover, the general APIK support scale was found to correlate closely and positively with the general AFA-R scale (*r*=.688) and the HBSC scale (*r*=.680). Finally, the correlations between scales evaluating different sources of support were much weaker.

DISCUSSION AND CONCLUSIONS

The aim of this study was to develop and validate an instrument for measuring perceived social support in Secondary Education. The results reveal adequate psychometric properties with excellent internal consistency and validity values.

The exploratory factor analysis of the APIK questionnaire supported the three-dimensional structure of support from family, friends and teachers hypothesized in other studies (Hombrados & Castro, 2013).

Consequently, the new APIK questionnaire overcomes the limitations of other measurement instruments which evaluate sources separately or focus on only one of them (Domínguez et al., 2011; González & Landero, 2014; Hardesty & Richardson, 2012; Moreno et al., 2012; Procidano & Heller, 1983). Moreover, the new questionnaire focuses solely on the most relevant sources for adolescents (Hombrados & Castro, 2013), without analyzing others which are not considered relevant (Furman & Buhrmester, 2009; Scholte et al., 2001; Zimet et al., 1988), and having only 27 items also overcomes the limitations of other questionnaires, which are too long (Gordon-Hollingsworth et al., 2015; Malecki & Demaray, 2002). Finally, unlike those of other questionnaires (Furman & Buhrmester, 1985; Harter, 1985; Pastor et al., 2012), the items of the APIK questionnaire correctly fit the theoretical conception of social support.

Nevertheless, the study does have some limitations. Participation in the study was limited to a single school with a medium-high socioeconomic level. This may result in a possible variation in the results if the instrument is administered in other schools from more diverse regions. To this end, future research should seek to repeat the study with more varied samples.

Finally, this avenue of research could be further developed in the future by conducting a confirmatory factor analysis to verify the model obtained here. Thus, structural equations could be used to confirm a hypothetical model which combines two levels and different hierarchized dimensions: firstly, sources of support and, within these, types of support provided. This would provide a more global, hierarchized and multidimensional view of the construct.

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