THE SOURCES OF SUPPORT AND THEIR RELATION ON THE GLOBAL HEALTH OF ADOPTED AND NON-ADOPTED ADOLESCENTS

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Abstract.

Despite its importance, few studies have analysed the influence of social support on the global health of adoptees, especially during adolescence. Considering research claiming that the emotional and social development is one of the last areas to recover from an initial adversity in life, it would be expected that the influence of the social support received by adoptees would follow a different logic to that which characterises the normative population. The present study aims to analyse the roles of the family, friends, classmates and teachers and their relationship with global health, by exploring whether there are any differences between adoptees and non-adoptees. The sample consists of 28,768 adolescents aged between 11 and 18, who participated in the Spanish cross-sectional study Health Behaviour in School-Aged Children (HBSC) 2014. In this sample, 394 were adopted. The results show that family support is more relevant for adoptees than non-adoptees, and classmate and teacher support is more relevant for non-adoptees than adoptees. In addition, in the case of adopted adolescents, there is no direct relationship between the school context and their global health; instead, the relationship is mediated by family and friends support.

Key words: adolescence, adoption, social support, developmental contexts, global health.

1. Introduction

1.1.Social support and global health

Several definitions have been put forward on social support. Pearson (1986) defined social support as the feeling that one is cared for, esteemed, and has access to a network of concerned people. Thompson (1995) defined it as social relationships that provide (or can potentially provide) material and interpersonal resources that are of value to the recipient, while Lin, Dean and Ensell (1986) underscored an idea that has turned out to be key: that social support can be real or perceived. More recently, Canavan, Pinkerton and Dolan (2016) have defined social support as the perception and the actuality of having assistance available from other people.

This distinction has led to various authors highlighting the importance of perceived social support, defending the benefits it has to different health indicators above real social support (Evans, Steel, & DiLillo, 2013; Sarason, Sarason, & Gurung, 2001). Social support is fundamental because of its role as a buffer against the impact of adverse effects on health and risk behaviours (Caspers, Cadoret, Langbeh, Yucuis, & Troutman, 2005; Evans et al., 2013; Jenkins, Fredrick, & Wenger, 2018; Sperry & Wimdom, 2013; Thompson, 2014, 2015). These effects have been detected during adolescence (Bukowski, Laursen, & Hoza, 2010; Heimisdottir, Vilhjalmsson, Kristjansdottir, & Meyrowitsch, 2010; Marion, Laursen, Zettergren, & Bergman, 2013). Specifically, we selected a global health score, which encompasses self-rated health, psychosomatic complaints, health-related quality of life and life satisfaction, as an indicator of positive adaptation of adolescents in the present study (Moreno, García-Moya, Rivera, & Ramos, 2016; Ramos, Moreno, Rivera, & Pérez, 2010).

1.2.Social support: adolescence and peers

Social support comes from different sources, such as their family, teacher and peers (Jenkins et al., 2018). During adolescence, when social support is studied, it is essential to address the family and peers. Despite peers increase their influence on development during the adolescence compared to their role during childhood, family is still a fundamental reference point (Brown & Larson, 2009; Laursen & Collins, 2009; Oliva, 2015; Scholte & van Aken, 2006).

Beyond the family, the peer and school context prove to be important sources of social support. In fact, for adolescents who are at risk due to family problems, such as maltreatment, the peer relationships attenuate the impact of that risk (e.g., Criss, Petit, Bates, Dodge, & Lapp, 2002; Lansford, Criss, Petit, Dodge, & Bates, 2003).

The study of peers found that more often than not peers are only studied in the school context and these relationships are not explored in other environments. This methodology implies a clear restriction, given that in some cases the support network of classmates and support network of friends, regardless of whether they are in the same class or not, become confused or mixed. According to Oliva (2015), classmates would not be the closest group of friends that boys and girls have. However, in order of emotional closeness and reciprocity, they would be ranked after close friends and friends, and only just before the peer group in general. Furthermore, unlike classmates, friends are actively chosen, selecting peers whose characteristics are congruent with their own identity, personality, and their most relevant behaviours (Oliva, 2015; Rubin et al., 2009). In that regard, the work of Del Valle, Bravo and López (2010) found that even though the majority of the friends of the adolescents assessed in their study came

from a school context, the role of classmates as providers of social support was more minor than the role of the friends from outside the school context.

Friends provide emotional, social and instrumental support. They help in the development of social skills and creation of close relationships with people who may end up acting as attachment figures (Buhrmester, 1996; Oliva, 2015; Thompson, 2014). Social support from close or intimate friends has shown to have a strong direct effect, as well as a buffering effect, with a decrease in the presence of risk behaviors (e.g., Bukowski et al., 2010; Marion et al., 2013). In this regard, friendships have been linked to emotional adjustment, in particular, to good self-esteem, improved social skills, greater feelings of self-efficacy and fewer depression and anxiety issues (Buhrmester, 1996; Oliva, 2015; Thompson, 2014). On the other hand, a lack of friends or having low-quality friendships is related to poor wellbeing and adjustment problems (Bagwell & Schmidt, 2011; Thompson, 2014). In addition to friends, classmates can also have an important positive influence (Brody et al., 2006; Bukowski et al., 2010; Criss et al., 2002; Lansford et al., 2003). However, peer victimization can disrupt the social network, especially at school (Demaray & Malecki, 2003; Jenkins et al., 2018; Pouwelse, Bolman, Lodewijkx, & Spaa, 2011).

Nevertheless, the social context of the school is not restricted to classmates but is also a place where another very important relationship for boys and girls is cultivated: the relationship with their teachers. Social support from teachers has also been identified as a critical factor for obtaining positive outcomes, as well as a being a shield that protects against adverse outcomes (García-Moya, Bunn, Jiménez-Iglesias, Paniagua, & Brooks, 2018; Pössel et al., 2018; Tennant et al., 2015). However, previous research has found that, in some situations such as peer victimization or discrimination,

teachers did not have that positive role and they can be part of the problem (e.g., Jenkins et al., 2018).

1.3.Social support and global health in adopted adolescents

Recently, the study of social contexts and their influence on development has garnered interest within the field of adoption studies. While the initial research on adoption centred around whether adoptees had more problems than non-adoptees, lately the focus has shifted to concentrate on and understand the factors and processes underpinning recovery and adjustment in the development of adopted people (Palacios & Brodzinsky, 2010).

1.3.1. Adoptees and non-adoptees

Regarding the comparison between adoptees and non-adoptees, studies were motivated by finding a higher presence of adoptees in mental health services and in psychological treatment programs than expected. Research began to discover that this elevated incidence of problems in adoptees compared to non-adoptees was primarily centred on hyperactivity, attention, and disruptive behaviours such as aggressions, lies, or theft (Dickson, Heffron, & Parker, 1990; Kotsopoulos et al., 1988). Recent research has also shown a higher presence of mental health problems amongst adoptees, such as rates of suicide attempts or psychiatric hospitalization, hyperactivity problems (DeJong, Hodges, & Malik, 2016; Hjern, Lindblad, & Vinnerljung, 2002; Lindblad, Vinnerljung, Von Borczyskowski, & Hjern, 2008). Meta-analyses focused on intercountry adoption have played an important role in understanding the phenomenon. Bimmel, Juffer, van IJzendoorn, and Bakermans-Kranenburg (2003) and Askeland et al. (2017) have found that adoptees show more mental health problems than non-adoptees in general,

especially during adolescence and youth. However, the aforementioned meta-analyses also demonstrate that the statistically significant differences between adoptees and non-adoptees are small or very small. In this regard, the contribution of Askeland et al. (2017) is interesting, finding that the degree of differences between adoptees a non-adoptees is greater when the information is reported by the parents (and not from the adoptees themselves), as well as when categorical classifications are used instead of continual quantitative scores. Moreover, the work also quantified the differences found between clinical (adoptees seen in mental health services) and non-clinical (adoptees from the general population) populations, showing greater differences when analysing the clinical group, as expected. Another key finding for better understanding the presence of adoptees in mental health services is that adoptive families tend to seek professional help for their children more than non-adoptive families, even doing so for less serious problems (Miller, Park, & Winward, 2006).

Concerning social support, the previous research is scarce. This topic can be linked to other social issues, such as the research that have found that adoptees have difficulty establishing friendships than non-adoptees (DeJong et al., 2016; Howard, Smith, & Ryan, 2004; Rushton, 2003). Furthermore, many adopted children have difficulties in the school contexts, such as educational needs, learning problems and a lower academic achievement (Brown, Waters, & Shelton, 2017; DeJong et al., 2016; Helder, Mulder, & Gunnoe 2016; Palacios, Román, Moreno, León, & Peñarrubia, 2014). In addition to the learning process, school is an ideal context for socialization and learning about peer relationships. However, recent research shows that a large percentage of adoptees also have difficulties in this area. Adoptees have shown more problems in the classroom dynamic due to increased difficulty in maintaining attention

and concentration, problems controlling and regulating emotions, more impulsivity, disruptive or defiant behaviours, etc. (Brown et al., 2017; Elovainio, Hakulinen, Pulkki-Råback, Raaska, & Lapinleimu, 2018; Moreno, Peñarrubia, & Moreno-Maldonado, 2013) and even being more actively involved in bullying than their non-adopted peers, both as victims as well as bullies (Moreno et al., 2016; Raaska et al., 2012). Regarding teachers, some research have also found that they have more complains about adoptees than about non-adoptees (Howard et al., 2004) or even than adoptees had been subject to discrimination from their teachers (McGinnis, Smith, Ryan, & Howard, 2009). As previous studies have found, perceived discrimination from peers or teachers has an impact on mental health, and impact that can be diminished thanks to social support (Brody et al., 2006; Juang, Ittel, Hoferichter, & Gallarin, 2016; Koskinen et al., 2015).

1.3.2. Understanding the adoption

Alongside the study of problems stemming from adversity and the interest within the field of adoption studies in understanding the factors and processes underpinning recovery and adjustment (Palacios & Brodzinsky, 2010), there is an increased level of research asking why some people who grow up under adverse circumstances seem to develop well while others experience a variety of difficulties. The protective factors that appear to be present in some successful developmental trajectories are seen as the key drivers of resilience (Garmezy, 1991), assets (Benson, 1997; Morgan & Ziglio, 2007), or more recently, as examples of positive youth development (Blum, 2003).

For children to be adopted there has to have been, minimum, abandonment and loss, which are both considered to be early experiences of adversity. Exposure to early adversity during development could be the cause of some of the developmental

deficiencies and setbacks that the children show upon arrival to the adoptive family. Early adversity can come in different forms: caused by genetic factors, prenatal and perinatal experiences, and postnatal experiences (Rutter, 2005; Verhulst, 2000). Early adverse experiences have serious consequences in the complete development of the affected children: smaller head circumference, low weight at birth, higher presence of disorganized attachment, difficulties in linguistic and cognitive development, lower academic achievement, more symptoms of hyperactivity, difficulties in executive functions, etc (Cyr, Euser, Bakermans–Kranenburg, & van IJzendoorn, 2010; Palacios et al., 2014; Rasmussen, 2005; Sonuga-Barke, Schlotz, & Kreppner, 2010; Stronach et al., 2011; Tregeagle, Moggach, Trivedi, & Ward, 2019; van den Dries, Juffer, van IJzendoorn, & Bakermans-Kranenburg, 2009; Zeanah, Smyke, Koga, & Carlson, 2005).

Regardless of the type of adversity (most frequently a combination of various types), similar to how adverse experiences prior to adoption have detrimental effects on their development, the change in family context –that is, the adoption–, produces beneficial effects for recovery and is considered an efficient intervention strategy for repairing damage caused by prior experiences (Balenzano, Coppola, Cassibba, & Moro, 2018; McCall, van IJzendoorn, Juffer, Groak, & Groza, 2011). However, this recovery is not produced evenly in all the development or at the same pace. Different studies have found that, while areas such as physical development recover quickly and completely, other areas, such as social and emotional development, take more time to recover (DeJong et al., 2016; Palacios, Román, & Camacho, 2011; Palacios et al., 2014; Pears, Kim, & Fisher, 2008; Rutter, 2005). The degree of recovery that each child achieves is related to different factors, amongst which, in addition to the characteristics of the adoptive family, the length and type of initial adversity, as well as age at

placement, stand out (Helder et al., 2016; Juffer & van IJzendoorn, 2005; Verhulst, 2000). In addition to the variables mentioned, differential plasticity and complexity are crucial elements that help explain the variety of paths to recovery in adoption. Palacios et al. (2014) offer an interesting explanation: those developmental areas most resistant to change are more complex than those that recover more quickly.

To comprehend the present study it is necessary to understand the context of Spain, the country where they have been collected. Spanish domestic adoption comes from the welfare system, which implies experiences of neglect and abuse in the birth family (Palacios & Amorós, 2006). With regard to intercountry adoption, this type of adoption quickly went from being almost inexistent before 1995 to experiencing a "boom" since the Hague Convention was ratified (Ferrandis, 2017; Selman, 2010). Nonetheless, the intercountry adoption boom has not continued up to the present day. Intercountry adoption has decreased in Spain, similar to what has happened in neighboring countries (Palacios, 2017). Since the end of the boom, there has been a change not only in the decreasing quantity of adoption, but also in increasingly higher adoption ages and in a greater number of adoptions of groups of siblings or children with special needs (Observatorio de la Infancia, 2017).

1.4. The present study

Despite the emphasis on the processes and factors underpinning the psychological adjustment, there is little research analysing the influence that developmental contexts as providers of social support have on the development of adolescents in the adopted population. In fact, there are few studies with real or perceived social support as the objective of study. Therefore, if a bibliographic search for the term "social support" is

made in the field of adoption, the majority of studies found would focus on the support that adoptive parents receive—not adoptees—and would concentrate on the greater or lesser need for professional intervention to improve the adoptive parents' social networks. The studies exploring social support from the adoptees' point of view and based on the study of development would hardly be visible.

Despite the few comparative studies, we can posit that the influence of social contexts on global health will be different among the adopted population and the non-adopted population during adolescence, due to the fact that these children's social and emotional development, as already stated, takes longest to recover after the initial adversity experienced prior to adoption (DeJong et al., 2016; Hodges et al., 2005; Palacios et al., 2011; Palacios et al., 2014).

To address the above-described gap in the literature, the current study focuses on analysing how the perceived social support in different developmental contexts of adopted adolescents influences global health. To study this objective, a hypothetical model representing the influence of perceived social support on global health has been designed. It measures global health using a composite score (Global Health Score – GHS-) which includes components related to self-rated health, psychosomatic complaints, health-related quality of life and life satisfaction (Ramos et al., 2010). In terms of developmental contexts that provide social support, the four mentioned in the paragraphs above are represented in the hypothetical model: family, friends, classmates and teachers. This model aims to analyse if there is a difference in the relationship of adoptees compared to adolescents who grow up in their biological families and do not have any other means of protection system, i.e., with respect to the group of adolescents

which will be used as the reference group. The starting point is the same model for adopted adolescents and the reference group (see Figure 1).

-Insert Figure 1-

2. Method

2.1. Participants

Participants were selected from the 2014 edition of the *Health Behaviour in School-aged Children* (HBSC) study in Spain, a survey which has been approved by the Research Ethical Committee of the University of Seville and Regional Andalusian Government.

A random multi-stage sampling stratified by conglomerates was employed in order to ensure the representativeness of the sample. The stratus were age, geographic area (autonomous community of Spanish regions), type of school (state or private schools) and type of habitat (rural or urban); the conglomerates were firstly the schools and secondly the classrooms. Regarding the type of schools, private centres were more frequent between adoptees (39.8%) than among non-adoptees (34.0%). With respect the families, adoptive families had a higher socio-economic status: 40.0% of adoptive families reached to high socio-economic status, compared to 25.9% of non-adoptive families.

From the original sample (31,058 adolescents), the total sample was divided between adopted and non-adopted adolescents. The first group is composed specifically of 394 adopted adolescents, which is 1.4% of the total HBSC sample. Regarding the type of adoption (domestic or intercountry), 155 adolescents were adopted within Spain compared to 239 that were adopted internationally, representing 39.3% and 60.7% of

the sample of adoptees, respectively. Within the intercountry adoption, adolescents were classified according to the main birth areas of origin, establishing four groups: Asia (34.8% of all intercountry adoptees), Eastern Europe (33.5%), Latin America (21.6%) and Africa (10.1%).

The group of non-adopted adolescents, which included 28374 adolescents, was used as a reference group, removing adolescents who were adopted or were living in a foster family, a welfare centre or any other family situation related to the welfare system. Furthermore, adolescents from both the reference group and the adoptee group who did not answer all the questions required to obtain a GHS were also removed from the study, and this will be explained hereinafter.

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In terms of sex (Table 1), the number of boys and girls is even in both groups. With regard to age, the average age at the time of survey in the adopted group was 13.8 years (S.D. = 2.1) and 14.2 years in the reference group (S.D. = 2.1). In both groups of adolescents, a drop in the age-associated sample is found at 17-18 years old, which is slightly more accentuated in the case of adopted adolescents.

-Insert Table 1-

Since some adolescents did not answer one or various items needed to calculate the GHS score that is explained below, a missing value analysis was previously done based on the contrast between the proportions and interpretation of effect sizes (Phi and *V* de Cramer). This analysis determined that there are no noticeable differences in effect sizes in the missing subjects based on sex, age, type of the school, place of residence or

socio-economic status of the family. The final sample sizes in the different groups can be verified in Table 3.

2.2. Measures

The variables were assessed using the 2014 Spanish HBSC questionnaire. The complete questionnaire is revised and improved for each edition of the study (for the last edition, see Currie et al., 2014).

Sociodemographic variables. At the start of the questionnaire, the adolescents were asked if they were an adopted boy or girl. This question came up again further into the questionnaire, so that only those who responded affirmatively on both occasions were identified as adoptees in this study.

Family support (FS). This variable was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). This dimension includes the following items: “My family really tries to help me”; “I get the emotional help and support I need from my family”; “I can talk about my problems with my family”; and “My family is willing to help me to make decisions”. Adolescents’ answers were from 1 “*Strongly disagree*” to 7 “*Strongly agree*”; the average score obtained from this scale was used in this study. Cronbach’s alpha is 0.92 for adoptees and 0.93 for non-adoptees.

Friends support (FrS). This variable was assessed with the same scale as family support (MSPSS; Zimet et al., 1988), but “family” was replaced with “friends”. Cronbach’s alpha is 0.93 for adoptees and 0.93 for non-adoptees.

Classmate support (CS). This variable was measured using a scale designed by the HBSC International network (Torsheim, Wold, & Samdal, 2000). Adolescents were

asked: “Here are some statements about the students in your class(es). This dimension includes the following items: “The students in my class(es) enjoy being together”; “Most of the students in my class(es) are kind and helpful”; and “Other students accept me as I am”. The average score obtained ranged from 1 “*Strongly agree*” to 5 “*Strongly disagree*”. Cronbach’s alpha is 0.83 for adoptees and 0.79 for non-adoptees.

Teacher support (TS). This variable was measured using a scale designed by the HBSC International network (Torsheim et al., 2000). Adolescents were asked: “Here are some statements about your teachers. This dimension includes the following items: “I feel that my teachers accept me as I am”; “I feel that my teacher care about me as a person”; and “I feel a lot of trust in my teachers”. The average score obtained ranged from 1 “*Strongly agree*” to 5 “*Strongly disagree*”. Cronbach’s alpha is 0.85 for adoptees and 0.84 for non-adoptees.

Global Health Score (GHS). This measure is based on 20 items related to the following four variables:

-Life satisfaction. It was measured by the Cantril’s Ladder (Cantril, 1965), with the question: “*Here is a picture of a ladder. The top of the ladder ‘10’ is the best possible life for you and the bottom ‘0’ is the worst possible life for you. In general, where on the ladder do you feel you stand at the moment? Tick the box next to the number that best describes where you stand*.” This variable represents the global perception adolescents have of their lives, from 0 to 10.

-Self-reported health. A single item asked the adolescent to consider their health at that moment, with their response fitting to one of the following four options: *excellent, good, passable, or poor* (Idler & Benyamini, 1997).

-Health-related quality of life. It was measured with the Kidscreen instrument designed for a population between the ages of 8 to 18. Specifically the Kidscreen-10 version was used, which provides a global, health-related quality of life index with 10 items covering physical, psychological and social aspects (Ravens-Sieberer et al., 2001). The following items composed this instrument, which asked the adolescents about their state over a period of one week: *feeling well and fit, full of energy, sad, lonely, having enough time for themselves, doing things they want in their free time, receiving fair treatment from their parents, having a good time with friends, getting on well at school and being able to pay attention/concentrate*. Items were answered on a 5-point Likert scale, from 1, never, to 5, always. The Cronbach's alpha is 0.64 for adoptees and 0.59 for non-adoptees.

-Psychosomatic complaints. It was measured with the HBSC-symptom checklist. It measures two aspects (Ravens-Sieberer et al., 2008): psychological complaint (nervousness, feeling low, irritability and sleeping problems) and somatic manifestations (headache, stomachache, backache, and feeling dizzy), with a Cronbach's alpha of 0.83 for adoptees and 0.83 for non-adoptees. These eight items were answered on a 5-point Likert scale: from 1 (*almost every day*) to 5 (*seldom or never*).

The GHS has shown good fit indices (NNFI = 0.98, CFI = 0.99, RMSEA = 0.03), as well as good reliability and validity (Ramos et al., 2010). Drawing on that empirical background, the adolescents' scores in each of the four measures that comprise the GHS were employed as indicators to obtain the latent factor Global Health in the SEM analysis.

2.3. Procedure

In accordance with the HBSC international standardized procedure (Inchley et al., 2016; Moreno et al., 2016), there are three basic requirements that must be complied with during the data collection procedure. Firstly, the questionnaire must be voluntarily answered by the school children themselves; secondly, the anonymity and the confidentiality of the participant's answers must be assured and scrupulously respected; lastly, the questionnaires must always be completed in the educational centre itself and within school hours.

2.4. Statistical analysis

Descriptive analysis with mean comparisons (Student's *t*) as well as Cohen's *d* test (0.20-0.49 = small effect, 0.50-0.79 = moderate effect, ≥0.80 large effect) were used in order to estimate the similarities or differences between both groups (adoptees and non-adoptees) in relation to all variables considered in this study. Afterwards, Pearson-r correlations were used to obtain a descriptive analysis of the relationships between all the examined indicators in adopted and reference group. The model described in the introduction section was assessed through structural equation modeling (SEM) using maximum likelihood estimation with EQS 6.2.

The model was tested for the group of adoptees and the reference group separately and compared in terms of their goodness of fit. In addition, several alternative indices were used because of their relatively decreased dependency of sample size and their ability to penalize the lack of parsimony in the models (Abad, Olea, Ponsoda, & García, 2011; Hu & Bentler, 1999): non-normed fit index (NNFI) or Tucker Lewis Index (TLI); comparative fit index (CFI); and root mean square error of approximation

(RMSEA). The value of NNFI, TLI, and CFI should be greater than 0.90 in order for the model to be accepted; RMSEA values lower than 0.06 are desired in a good fitting model (Garson, 2012; Hu & Bentler, 1999; Schreiber, Nora, Stage, Barlow, & King, 2006).

On the other hand, to improve the adjustment of each model, the Wald test was used. It evaluated the effects of removing or restricting parameters that were previously considered free. Before calculating a new parameter or eliminating an existing one, not only was the Wald test criteria taken into account, but the previous theoretical support involving this change along with the improvement in the adjustment that could cause this modification were also taken into account.

The strategy of comparing competing nested models was employed. Chi-square differences were used to compare the changes in fit among the nested models.

3. Results

Firstly, a comparison of means for independent samples was carried out and the effect size for the different comparisons between adopted adolescents and the reference group was calculated. As can be seen in Table 2, friends support is the only variable that reaches a significant value with a low effect size (d = 0.20), showing a lower mean in the group of adopted adolescents than in the reference group. Differences that reach a significant effect size were not observed in the rest of developmental contexts, so the situation in both groups in the rest of the contexts is statistically the same.

-Insert Table 2-

A SEM was estimated using the five latent factors following the Initial Model established in Figure 1 for both groups, adoptees and the reference group, through an

estimation of standardised residuals, controlling sex and age. Furthermore, by using the Wald Test, the models were modified independently in both groups. The correlation matrices for the observed indicators used in estimating the structural equations for adoptees and reference group are presented in Table 3 to facilitate the replication; all intersections are significant.

-Insert Table 3-

Table 4 sets out the fit data and explanatory capacity of the Initial Model for the reference group. In this table, good fit indicators in all the analysed parameters are observed. According to the Wald test, there are no relevant modifications. However, the adoptee group shows a discrete level of adjustment, so by using the modification tests the possible changes in the structure of the Initial model were then analysed.

-Insert Table 4-

The results of the Wald Test in adoptees indicate the need to eliminate the relationships between classmate support and health [χ^2 (1) = 0.008, p = .931], as well as those between teacher support and health [χ^2 (2) = 0.296, p = .862]), given that the Initial Model showed insignificant standardised loads, so they were removed for the purposes of creating the Final Model in adoptees. Additionally, Table 4 shows there is an improvement fit in the Final Model with respect to the Initial Model in adoptees. In this analysis, the indices obtained supported goodness of fit in the Final Model for adoptees. As previously indicated, the Wald Test did not report any possible modifications to the Initial Model for the reference group, as all the loads were above 0.10 in standardized value.

Therefore, the following are considered as final: the Initial Model to reference sample (i.e. the Final Model for the sample of non-adoptees is identical to the originally proposed Initial Model) and the modification made to this model for the case of adoptees (Final Model for Adoptees). Both models would differ in the elimination (restriction to zero) of the parameters ranging from classmate support to health (*Bz* = 0.01) and from teacher support to health (*Bz* = 0.06), both with insignificant loads. The Final Model for adoptees is presented in Figure 2 and for the reference group in Figure 3. In conclusion, in terms of adoptees, the final model explains 36.5% of global health and demonstrates good levels of fit. In regard to the reference group, the final model (which is the same as the Initial Model) explains 33.3% of global health and also shows good levels of fit.

The Final Model for adoptees and the Final Model for the reference group are represented in Figure 2 and 3 respectively and all the relationships encountered are statistically significant. Starting with the adoptees, the direct relationship between the different perceived support and the general health score is restricted to family ($\beta = .53$, $p < .05$) and friends ($\beta = .17$, $p < .05$), and there is no relationship between global health nor the perceived support from classmates or teachers (see Figure 2). Furthermore, the perceived family support was the strongest relationship found, as it is larger than the reference group model. On the other hand, a significant relationship between the perceived support from teachers and the perceived support from classmates ($\beta = .49$, $p < .05$) was observed, which is very similar to the relationship detected between the perceived support from classmates and friends ($\beta = .48$, $p < .05$). A relationship between the perceived support from teachers and perceived family support ($\beta = .42$, $p < .05$) was also noticed, as was a relationship between the latter and classmates ($\beta = .39$, $p < .05$).

Furthermore, a relationship between the perception of family support and friends support was detected (β = .30, $p < .05$). Lastly, the relationship with the lowest load, which is still significant, was the relationship between the perceived support from friends and teachers (β = .20, $p < .05$).

-Insert Figure 2-

With respect to the model designed for the reference group (see Figure 3), all the supports have a relationship with the GHS. The main one is the family context (β = .31, $p < .05$), followed by the friends context (β = .19, $p < .05$), then classmates (β = .18, $p < .05$) and teachers (β = .14, $p < .05$). The strongest relationship between the different social supports is observed between teachers and classmates (β = .53, $p < .05$). The rest of the relationships between the different supports reach similar loads. In descending order, they are: the relationship between classmate support and friend support (β = .35, $p < .05$), between teacher support and family support (β = .34, $p < .05$), between the latter and classmate support (β = .28, $p < .05$), between family support and friend support (β = .27, $p < .05$) and, lastly, friend support and teacher support (β = .24, $p < .05$).

-Insert Figure 3-

In summary, both similarities and differences were discovered between the explicative model for adopted adolescents and the reference group model. Among the similarities is the indication that the family is the most influential factor in the overall health of these adolescents. The two models also coincide in the order of importance of the relationship between the types of support received from the different developmental contexts: firstly, the strong relationship between teacher support and classmate support,

followed by the relationship between classmate support and friend support, and finally, the relationship between family support and teacher support. However, the main difference detected between the two models is the adoptees' lack of a direct relationship between classmate support and teacher support with global health, which, by contrast, is found in the reference group.

4. Discussion

The objective of this study was to analyse how the perceived social support in the different developmental contexts (family, friends, classmates and teachers) influence the global health of adolescents, with a specific focus on whether there is a difference between those who have gone through adoption and those who have not. The aim is to address the above-described gap in the literature on the role of perceived social support in adopted adolescents. Thus, the starting point was a hypothetical model of this influence and a check was made to see if the adjustment of the initially designed model –in which all the developmental contexts were related directly to global health, as well as indirectly through the relationship between the contexts– was the same for adoptees as it was for non-adoptees, or if some changes needed to be made to either of the two groups.

Firstly, in accordance with previous literature, our results support the importance of the perception of social support in global health (Lin et al., 1986; Sarason et al., 2001), as well as the fact that this relationship between social support and global health occurs within all the social developmental contexts of the adolescents considered (Bukowski et al., 2010; Pössel, et al. 2018; Sperry & Wimdom, 2013; Suldo et al., 2009; Tennant et al., 2015). However, even though our results confirm the previous

evidence revealing the importance of social support, they also help to broaden the field of research, as studying this concept and its relationship with the global health of adoptees has shown that the relationship between social support in the school context and health in this group is not direct but comes about through the influence of support from friends and family. This result is in accordance with Brody et al. (2006), who also found that family acts as a moderator between school and health in their study about perceived discrimination. Thus, as well as corroborating previous evidence, our results also mark a breakthrough in its study as they highlight that the importance of social support received in school (from teachers as well as classmates) is contingent upon the quality of the support received in the family context and in the group of friends.

The first and most striking result of a more detailed analysis of our results starting with the family context, which shows that there is a strong association between perceived family support and the global health score of adopted adolescents (both compared to the influence of other developmental contexts as well as the reference group, where this context's load of influence on global health is smaller). These results may be explained by the fact that adoption, as a means of protection, involves a very rapid improvement to the physical development of adopted minors as well as a considerably quick improvement in cognitive development. Therefore, the adoption is an efficient intervention strategy for repairing damage caused by early adversity (Balenzano et al., 2018; MacCall et al., 2011). However, studies have indicated that the emotional development needs longer to recover and may take a long time to reach a normal score (DeJong et al., 2016; Palacios et al., 2011; Palacios et al., 2014; Pears et al., 2008; Rutter, 2005). In other words, due to an initial adversity, the emotional development of adopted adolescents is probably more immature than that of non-

adopted adolescents, given that this area is still undergoing the recovery process. It is for this very reason, perhaps, that family support is vital to the development of adoptees for a longer time than non-adoptees, for whom adolescence is the natural time for renegotiating autonomy and independence and a point when their family gradually loses importance while peers gain more influence over them (Brown & Larson, 2009; Laursen & Collins, 2009; Lila et al., 2006; Scholte & van Aken, 2006). So even though there are no differences between the two groups in the general scores for perceived family support, it would seem that family support is a more important factor in explaining the global health of adopted adolescents, not because it is not important for non-adoptees, but because adoptees maybe need it to help them in the process of recovering from initial adversity in life.

However, when it comes to explaining this result, we cannot disregard their relationship with the second most relevant result of our study: the lack of a direct relationship of perceived support in the school context (from teachers or classmates) and the global health of adopted adolescents in comparison with the reference group. Thus, the predominance of the family context could be explained not only by this absence of direct effects in the school context or, as already mentioned, the significance the family demonstrates through its direct effects, but also through its role as an intermediary between the influence of the school context and the global health of the adopted adolescents.

This result can be linked to the previous research which has found that adoptees encounter all kinds of difficulties in their school environment. These range from a number of learning problems and special educational needs (DeJong et al., 2016; Fishman & Harrington, 2007; Rushton, 2003) to trouble interacting with their

classmates (Moreno et al., 2016; Raaska et al., 2012). In other words, the school context presents a greater challenge for many of adopted adolescents to a larger extent than for non-adopted adolescents (Múgica, 2008). This reality is partly explained by the very nature of each context. Thus, while the support and affection given by families are unconditional (or are supposed to be), when it comes to peers, this kind of support is by no means guaranteed. Research has shown that young people's social skills play a decisive role in their being accepted or rejected by a group of peers. According to Moreno et al. (2013), the sociometric status of adoptees showed that they were less likely to be popular and they had an average and higher tendency of being rejected by the non-adopted reference group. It also indicated that their behavioral reputation was more similar to the residential care group than the reference group.

In relation to social skills issues, it was found that adoptees have more problems in the classroom, as they have greater difficulty in staying focused and concentrating, which may be associated with the high levels of ADHD among this population group, in addition to emotional regulation and control issues, being more impulsive, disruptive, challenging, etc. (Brown et al., 2017; Miller et al., 2006; Múgica, 2008; Sánchez-Sandoval & Palacios, 2012). In addition to the aforementioned there is one more factor: the prejudices and discrimination that may arise due to physical appearance (in the case of intercountry adoptions) or simply by being adopted, which will be discussed hereinafter. As previous studies have found, social support has a role in the relation between racial or ethnic discrimination and mental health (Brody et al., 2006; Juang et al., 2016; Koskinen et al., 2015).

5. Conclusion

The results of this work show that the lack of a direct relationship between the school context and global health is not only focussed on classmates, however, the same thing happens with teachers, showing that overall the school seems to follow its own logic (including teachers and classmates). That is to say, adopted adolescents do not benefit directly from the advantages that the school context implies, the support received from their classmates or the support teachers give them. Instead, the relationship between classmates and teachers support and global health is mediated by family and friends support. Our hypothesis is that these results may indicate that when teachers are faced with the problems that some adoptees encounter in their peer-to-peer relationships as mentioned above, they do not seem to take actions to make up for these difficulties but would act in the same way as classmates. These actions can be linked to the conclusions of March (1995), who stated that the stigma around adoption may cause teachers and students (as well as the rest of the community) alike to make negative attributions about an adopted child's behaviour simply because they are adopted. In this regard, Howard et al. (2004) found that teachers complain more about the behaviour of adoptees (54% in domestic adoption and 34% in intercountry adoption) than about the behaviour of non-adoptees (18%). Along with the stigma associated with being adopted, the double discrimination faced by intercountry adoptees, which includes racism, must also be mentioned. In relation to this, we have looked at the findings by McGinnis et al. (2009) concerning adoptees from South Korea interviewed during adulthood, who stated that they had been subject to discrimination not just from their classmates (75%) but also from their teachers (39%).

These findings highlight the need to consider the school context, both for its awareness and attention from schools, and for its recognition as a reparative and

therapeutic context. As Brown et al. (2017) said, the education system is disregarding a vulnerable group of children and adolescents who should be better helped. Educational programs about adoption will help provide information showing the importance of an inclusive school, as well as take the responsibility of teaching off of adoptees so their relationships with peers can be less strained (Romano, Babchishin, Marquis, & Fréchette, 2015; Soares, Barbosa-Ducharne, Palacios, & Fonseca, 2017). Therefore, teachers can promote positive outcomes among all children in their schools cultivating caring classroom environments (Troop-Gordon, 2015).

Lastly, another finding observed among the adoptees was the difference between the influence of friend support and classmate support, thereby backing those who defend the notion that peer groups should be evaluated beyond the school context (Kiesner, Kerr, & Statin, 2004). Just like Del Valle et al. (2010), our findings show that the group exercising most influence over peers are friends, ranking above classmates. These results confirm the positive influence that relationships with friends have in the lives of adoptees, thus supporting the research that defend the comforting and therapeutic role assumed by friends (or peers) in the global health of young people (Schneider, 2000; Selman, Watts, & Schultz, 1997; Thompson, 2014).

6. Strengths and limitation

It is important to note that this study has certain limitations, such as the impossibility of realising a longitudinal design of the sample due to the transversal nature of the HBSC study. Similarly, despite being large compared to other studies, the sample of adoptees used here is clearly considerably smaller than the sample of non-adopted adolescents that serve as a reference group.

Nevertheless, this study found interesting results in the area of the psychology of adoption. As far as we are aware, it is the first study using a global model to prove the importance of the support received in different contexts in the global health of adopted adolescents, which also does so with a reference group acting as a point of comparison. This approach provides various interesting results for the field of research itself as well as practical applications for the intervention. Firstly, the primary role of the family in the lives of adopted adolescents is highlighted. It shows that, despite the fact that they are at a stage where other developmental contexts start to compete with the family influence, this phenomenon arises to a lesser extent among adopted adolescents than the reference group. Secondly, the lack of a relationship between the support provided by the school context (through teachers or classmates) and the global health of this community highlights that there is still work to be done in this setting. In particular, our findings show the urgency and need to implement intervention programmes in schools that would work to improve the knowledge and mental representations surrounding the characteristics and needs of adoptees. The objective of the programmes is to use greater knowledge and training to provide insight and improve the adjustment and integration of adoptees in this developmental context, and, therefore, they could benefit directly from its potential as a developmental asset to the same extent as non-adoptees do.

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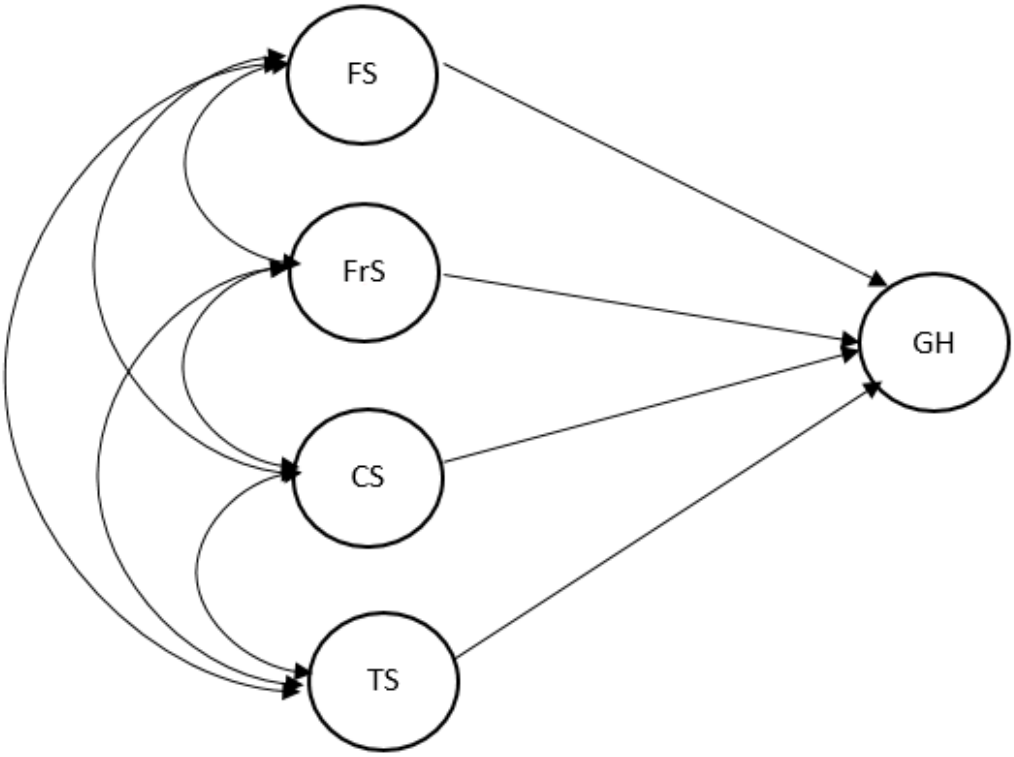

Fig. 1. Initial model for adopted adolescents and reference group. FS = Family support; FrS = Friends support; CS = Classmate support; TS = Teacher support; GH = Global health.
Note. The loads from observed variables to latent variables have been omitted to make the model simpler.

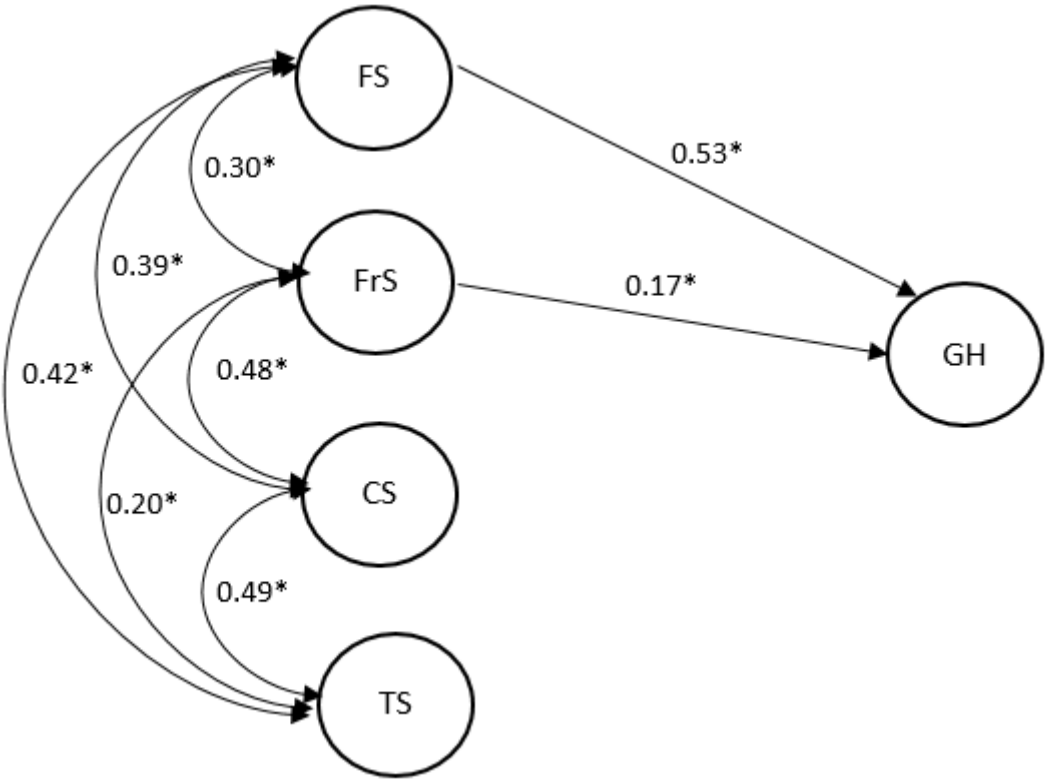

Fig. 2. Standardised solution of the Final Model for adoptees, numbers indicated the standardised coefficient (marked with an asterisk when $p < .05$). *FS* = Family support, *FrS* = Friends support, *CS* = Classmate support, *TS* = Teacher support, *GH* = Global health

Note. The loads from observed variables to latent variables have been omitted to make the model simpler.

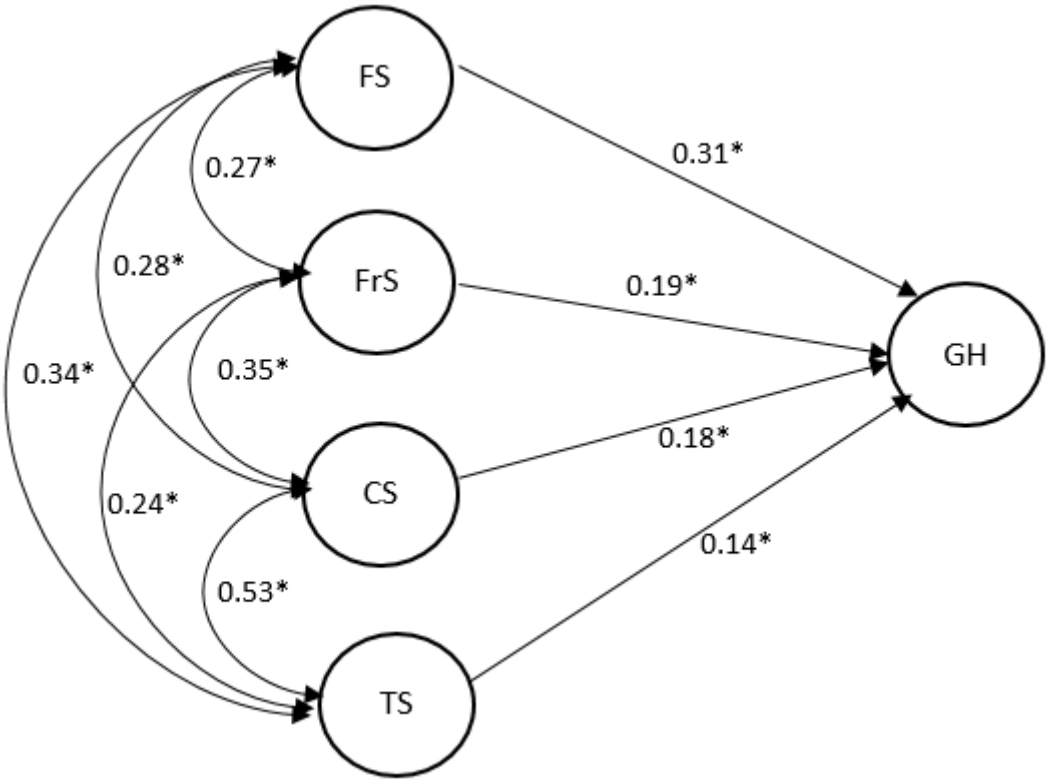

Fig. 3. Standardised solution of the final model for the reference group, numbers indicated the standardised coefficient (marked with an asterisk when $p < .05$). *FS* = Family support, *FrS* = Friends support, *CS* = Classmate support, *TS* = Teacher support, *GH* = Global health

Note. The loads from observed variables to latent variables have been omitted to make the model simpler.