

The relationship between family quality of life, mindful attention, and social support in families of people with autism spectrum disorder

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Background: In families of individuals with autism spectrum disorder (ASD), the added difficulties they face may influence their perception of family quality of life (FQoL). It is important to identify factors which foster their perceived wellbeing and are susceptible to intervention. Our aim was to explore the association between mindful attention and FQoL in these families controlling their perceived social support.

Method: Ninety-six parents of people with ASD were evaluated using the Mindful Attention and Awareness Scale (MAAS; Barajas *et al.* 2014), the Support Questionnaire for Parents with Children with Disability (Bristol 1979), and the Spanish Family Quality of Life Scale (Giné *et al.* 2013) for families with underage members with intellectual and developmental disabilities.

Results: Multiple regression analyses revealed that high levels of mindful attention positively predicted FQoL after controlling the influence of social support.

Conclusions: Practical implications are discussed in terms of family support interventions. We conclude that mindful attention interventions may be useful for families with children and adolescents with ASD to improve their FQoL.

Key words: family quality life; ASD; mindful attention; social support; family support.

Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental disorder related to persistent deficiencies in social communication and a pattern of repetitive behaviours and interests (American Psychiatric Association 2014). People with ASD normally have difficulties making friends and understanding social norms (Simmons *et al.* 2006), and usually struggle to predict and understand what others feel or think (Trimmer *et al.* 2017). Also, people with ASD could display different patterns of responses to sensory stimuli (Sánchez 2017).

All these difficulties involve specific and long lasting demands and needs for both the child and the contexts where the child or adolescent with ASD interacts. As the family is one of the main contexts for the development of children (Rodrigo *et al.* 2008), these additional demands and needs normally lead to an increase in the challenges that parents with a child or teenager with ASD in their care face (Depape *et al.* 2015). Some studies have shown that parents of children and teenagers with ASD often feel overwhelmed by their child's needs and demands and have no time for themselves (Hutton *et al.* 2005) and they often experience more stress than those who have typically developing children (Lee *et al.* 2018; Meirsschaut *et al.* 2010). Also, mothers of children with ASD were found to have poorer physical health (Johnson *et al.* 2011) and more than one third of these mothers showed significantly higher rates of depression than mothers of children with typical development (Lang *et al.* 2010). In this way, having a child or a teenager with ASD might influence the perception of family quality of life.

Despite the additional challenges, some studies have highlighted family resilience, defined as the ability to grow and become more resourceful in the face of adversity, as a

result of having a child with ASD (Bayat 2007). Families with a child with ASD perceived some benefits, such as becoming united and closer as a family, strengthening the emotional bonds among the members of the family, personal growth and becoming more compassionate, perspective transformation and making meaning of the adversity, appreciating advances and enjoying smaller daily gifts (Bayat 2007; McConnell *et al.* 2015). In addition, parents of children with ASD often become advocates for the rights of people with ASD and feel proud of their child with ASD (Bayat 2007). According to McConnell *et al.* (2015) parent-reported benefits can be considered as transformational outcomes. It is important to continue exploring not only the difficulties and factors that predict a negative outcome in families of people with ASD, but also their strengths and the promotion of positive outcomes. Moreover, family adaptation involves more than just the presence of positive outcomes and the absence of negative ones, needing then a broader and more holistic understanding of families' adaptations to having a child with ASD (Gardiner *et al.* 2012). Family quality of life provides a comprehensive approach towards this understanding about family and adaptation processes linked to having a child with a disability (Hoffman *et al.* 2006).

Family quality of life

Although the concept of individual quality of life has been present for a long time, family quality of life (FQoL) as a construct has been developing for the last 20 years. While most studies have focused on the development of the construct, the theoretical frameworks and evaluation tools (Beach Center on Disabilities 2006; Hoffman *et al.* 2006; Giné *et al.* 2013), there are fewer studies that have researched factors associated with FQoL. It is a construct that can be used to determine the impact of the presence of a child with disability

in families. There is no current agreement in the definition of FQoL, with several authors using different conceptualizations (Mora *et al.* 2020). One of the first conceptualizations included the notion of achievement of goals, satisfaction and empowerment, as key elements in the definition of FQoL (Brown *et al.* 2004). From a theoretical perspective, one of the most widely currently cited definitions, argues that FQoL implies a dynamic conception of family wellbeing, defined collectively and subjectively by its members, adopting an interactive view of individual and family needs (Zuna *et al.* 2010). According to Smith-Bird *et al.* (2005), FQoL encompasses both the needs of all the family members and the strengths of the family unit. There are several instruments available to measure FQoL, which also reflects the differences in its conceptualization and operationalization. Two of the most used instruments are the Beach Center FQoL scale (Hoffman *et al.* 2006) and the Family Quality of Life Survey, proposed by Brown, Brown *et al.* (2006). The Beach Center FQoL evaluates the perception of FQoL and the satisfaction with the FQoL, and it includes five different dimensions (family interaction, parenting, emotional well-being, physical and material well-being and disability related supports), while the FQoL Survey evaluates nine different dimensions (health, finances, family relationships, informal support, services support, influence of values, professional career, leisure and free time and community). In the Spanish context, Giné *et al.* (2013) provides an operationalization of the concept of FQoL, based on the identification of seven domains that comprise the definition of FQoL in families of people with intellectual and developmental disabilities in the Spanish context: emotional wellbeing, family interaction, health, financial wellbeing, parents' organisation and skills, family accommodation, and social inclusion and participation. More recently, there has been a revision of this scale (Balcells-Balcells *et al.*

2020), which has involved some changes in the operationalization of FQoL, with five dimensions instead of the original seven: family climate, emotional wellbeing, financial wellbeing, family adaptation and family resources.

The importance of the FQoL concept lies in the fact that when families have a healthy adaptation and dynamic and feel good, both physically and psychologically, they are more able to facilitate and foster the development and wellbeing of all their members, particularly children and adolescents (Rosenbaum *et al.* 1998). In this sense, exploring and studying factors which are related to FQoL among families with a child or adolescent with ASD (which is the aim of the present study) may provide valuable information to help plan better and more effective interventions designed to support and optimise the functioning of these families.

According to available empirical data, in families with a child with disability, FQoL is lower than in families with children without developmental difficulties (Brown, MacAdam *et al.* 2006; Gupta 2007; Poston *et al.* 2004), particularly in the areas of health, financial wellbeing, perception of support and professional career (Brown, MacAdam *et al.* 2006). Specifically, in families who have a child with ASD, only one third affirm to enjoy a very good or an excellent FQoL (Jones *et al.* 2017).

Although there is not much literature focused on predictors of FQoL, in the scientific literature several investigations have shown how having a child with ASD can affect different dimensions embedded within the construct of FQoL. For instance, in the case of family interaction, couples who have a child with ASD have a higher divorce rate than families with typically developing children (Hartley *et al.* 2010) and report being less satisfied with their sexual life (Aylaz *et al.* 2012). In relation to financial wellbeing,

families have to face additional expenses because social security systems or private insurance companies rarely cover the cost of all the treatments and support required. Moreover, parents are sometimes forced to leave their jobs or reduce their working hours to care for their child with ASD, leading to a drop in family income (Fletcher *et al.* 2012; Rogge *et al.* 2019). Concerning social inclusion and participation, families of people with ASD are often unable to engage in the typical leisure activities enjoyed by other people, such as going on holidays and eating out (Degrace 2004). They report more isolation and less time availability, in comparison to families of children with Down syndrome (Brown, MacAdam *et al.* 2006). They are also generally dissatisfied with the domains of leisure and enjoyment of life (Brown, MacAdam *et al.* 2006), as their lives are normally structured and carefully planned (Meirsschaut *et al.* 2010). It is then important to study more deeply the FQoL of families caring for child with ASD, in order to better assist the needs of these families.

The literature has reported data on the predictors of FQoL in families with children with developmental disorders. A positive perception of their child's situation, a high perceived level of control over their own life, satisfaction with the marital relationship, parents' socialisation and perceptions of positive gain have been found to correlate positively with FQoL (Ferrer *et al.* 2017; Patterson *et al.* 2018). However, parents' mental health problems and stress levels correlate negatively with FQoL (Patterson *et al.* 2018). Also, Lumani *et al.* (2014) observed that if families were satisfied with the care provided by professionals to their children but not with the support offered by their extended family, this had a negative impact on FQoL.

Fewer studies have focused specifically on the factors linked to FQoL in families with children and adolescents with ASD. In this line, Jones *et al.* (2017) suggest three elements linked to FQoL: the health of the family, the perception of having support from the disability-related services and the regular engagement in physical and free-time activities. Moreover, child's characteristics such as the severity of the symptoms (Mello *et al.* 2019; Pozo *et al.* 2014) and parents financial and personal resources are also connected to FQoL in families with a child with ASD (Mello *et al.* 2019). However, some studies show inconsistencies, not finding any relationship between the severity of the symptoms and FQoL (Jones 2018). Behavioural problems displayed by the child with ASD were related to FQoL, either directly (McStay *et al.* 2014) or indirectly through its effect on the parents' sense of coherence (Pozo *et al.* 2014). Concerning family sociodemographic characteristics, results were mixed, with some studies supporting the influence of educational level and family income on FQoL (Hsiao 2018), while others not finding a significant relation between those sociodemographic variables and FQoL (Pozo *et al.* 2014). Other factors that predicted FQoL were sense of coherence (McStay *et al.* 2014; Pozo *et al.* 2014), overall coping strategies (Jones 2018), particularly active coping strategies in mothers (Pozo *et al.* 2014) and parenting stress (Hsiao 2018). Among all these factors it is important to highlight one due to its relevance in FQoL: social support. Social support is particularly relevant for families of children with ASD as most families show low levels of satisfaction with the support they receive, particularly from informal sources, such as friends (Brown, MacAdam *et al.* 2006). The data reported by the literature confirm that bonds with other people at both an informal (family and friends) and formal level (professionals and institutions) correlate directly with FQoL (Davis *et al.* 2009; Epley *et al.*

2011; Jones 2018; Pozo *et al.* 2014), emphasizing the possible buffering effect of social support (Jones 2018). To sum up, there is some evidence about factors that influence FQoL, particularly, characteristics of the child with ASD and social support; however, more understanding about personal factors that are susceptible of intervention is needed to improve the support provided to these families.

Mindful attention and family quality of life

Mindful attention is a construct that is becoming an increasingly frequent target in intervention programs aiming to improve people's wellbeing. Considering then that mindful attention is a modifiable factor with evidence on its benefits for anxiety, depression, stress and general well-being (e.g., Brown *et al.* 2003; Schirda *et al.* 2015), it may therefore be interesting to include this dimension in interventions designed to support families with children and teenagers with ASD.

Mindful attention is both a state of mind and a psychological tool for developing this state. As a state of mind, it is defined as the "awareness that arises through paying attention, on purpose, in the present moment, non-judgementally" (Kabat-Zinn 1994, p.4). There is a growing body of evidence to suggest that reaching high levels of mindful attention may reduce stress among mothers of children and teenagers with ASD (Conner *et al.* 2014; Hwang *et al.* 2015; Wang *et al.* 2021). In this sense, Keng *et al.* (2011) conclude that, as a state of mind, mindful attention has several positive psychological effects, such as increasing subjective wellbeing levels, reducing emotional reactivity and improving behaviour regulation. In addition, mindfulness-based interventions have been incorporated in the support of parents of individuals with ASD. These interventions have evidence of reducing the levels of stress and improving the levels of psychological well-being in these

families (Rayan *et al.* 2017; Ridderinkhof *et al.* 2019), which provides further evidence on the potential benefits of mindful attention for the improvement of the well-being of the family as a unit.

Regarding parents of children and teenagers with ASD, Beer *et al.* (2013) reported that high levels of mindful attention were associated with lower stress levels and depressive symptoms, and Conner *et al.* (2014) also found the same relationship among mothers of children and teenagers with ASD, even when the children's behaviour problems were controlled for. More recently, Wang *et al.* (2021) indicated that mindful attention had an indirect influence on FQoL by reducing the levels of parenting stress and increasing mindful parenting, which in turn lead to higher levels of FQoL, providing insight in how mindful attention may positively influence parental and family outcomes.

Our study focuses on the FQoL of families with children and teenagers with ASD, analysing the role played by social support and mindful attention. Although there is ample empirical evidence indicating a relationship between FQoL and social support, to our knowledge there are almost no studies that have associated FQoL with mindful attention yet. Social support was selected along with mindful attention due to its already established relevance in the existing literature, which enables us to see whether mindful attention has an added value to the explanation of FQoL. Also, as we have previously mentioned in the introduction section, social support, particularly informal support, is one of the areas where parents report less satisfaction. Thus, the aims of the present study were:

- To describe the level of family quality of life, social support and mindful attention perceived by parents of children and teenagers with ASD, exploring the relationships

which exist between these variables and possible differences in accordance with gender and education level.

- To analyse to what extent social support and mindful attention were associated with family quality of life, and to explore the interaction effects of these variables.

In light of the results found in other populations, women and participants with lower levels of educational background were expected to perceive lower levels of FQoL (Hsiao 2018). We hypothesized no significant differences by gender in mindful attention (Brown *et al.* 2003), but no studies were found related to differences in mindful attention according to different education levels. Regarding the social support, significant differences were expected by gender but not by educational level (Sharabi *et al.* 2018). We expected higher levels of social support and mindful attention to predict higher levels of FQoL (Beer *et al.* 2013; Conner *et al.* 2014; Davis *et al.* 2009; Epley *et al.* 2011).

Materials and Methods

Participants

Participants were 96 parents of children and adolescents with ASD living in five out of the eight regions of Andalusia, Spain. Participants were aged between 25 and 62 years, with a mean age of 43.68 years ($SD = 6.15$). In relation to family structure, the majority (89.60%) were two-parent families ($n = 86$), 8.30% were single-parent families ($n = 8$) and 2.10% were stepfamilies ($n = 2$); furthermore, 58.30% of participants belonged to the same family system as another participant. As shown in Table 1, the majority of parents had a university degree and a stable job. In all the cases, either Spanish was their mother tongue, or they had a very good level of Spanish.

Their children and teenagers with ASD were in total 68, aged between 2 and 17 years, with a mean age of 9.03 years ($SD = 3.79$). Just under a quarter (24.00%) were aged between 0 and 6 years ($n = 23$), 53.10% were aged between 7 and 12 years ($n = 51$) and 22.90% were aged between 13 and 17 years ($n = 22$). Moreover, 77.94% were male and 22.06% were female (see Table 1).

[Table 1 near here]

Materials

Sociodemographic questionnaire. This questionnaire was designed to gather information about participants' sociodemographic profile. It includes: a) information about the person with disability (age, gender, diagnosis and other disorders); b) information about family structure using a genogram; and c) information about the participant (age, marital status, education level, profession and employment status).

Spanish Family Quality of Life Scale (CdVF-E (0 – 18); Giné *et al.* 2013). This scale measures perceived family quality of life in households including a person with disability. Due to the age of the children in our sample, in this study we only used the version for families with children under the age of 18 with disability, which has a total of 61 items. Each item is rated on a 5-point Likert-type scale ranging from 1 = *Never* to 5 = *Always*. In addition to an overall score, the questionnaire also provides separate scores for seven subscales: emotional wellbeing (*My family is hopeful and has projects for the future*), family interaction (*All the members of my family, including brothers and sisters and close relatives, try to create a pleasant family environment*), health (*The family member with ASD has healthy eating habits*), financial wellbeing (*My family has enough financial stability to face the future without any major concerns*), parents' organisation and skills (*My family engages in activities*

for all its members to enjoy together (outings, theme parks, days at the beach, etc.)), family accommodation (*My family understands the disability of the member with ASD*), and social inclusion and participation (*The family member with ASD has a group of friends*). A direct overall score can be calculated by dividing the sum of the individual scores for all items by the number of items answered. In the same way, the mean for each subscale can be calculated, selecting in each case only the items belonging to each dimension. In both situations, the mean ranges from 1 – 5. Higher scores indicate higher levels of perceived family quality of life. The Cronbach's alpha of the overall score for the present study was .90. The Cronbach's alpha of the subscales were: $\alpha_{\text{emotional wellbeing}} = .76$, $\alpha_{\text{family interaction}} = .71$, $\alpha_{\text{health}} = .46$, $\alpha_{\text{financial wellbeing}} = .78$, $\alpha_{\text{parents' organisation and skills}} = .60$, $\alpha_{\text{family accommodation}} = .65$, and $\alpha_{\text{social inclusion and participation}} = .60$.

Mindful Attention and Awareness Scale (MAAS; Barajas *et al.* 2014). This is the Spanish version of the original scale by Brown *et al.* (2003) and is designed to assess participants' perceived level of mindful attention, defined as awareness of what is happening at the present moment. The scale comprises 15 items rated on a 6-point Likert-type scale (1 = *Almost always*; 6 = *Almost never*). Some item examples are *I find myself preoccupied with the future or the past* or *I snack without being aware that I'm eating*. A direct overall score can be calculated by dividing the sum of the individual scores for all items by the number of items answered, being the maximum mean 6 and the minimum 1. Higher scores indicate higher levels of mindful attention. The Cronbach's alpha in this study was .94.

Support Questionnaire for Parents with Children with Disability (Bristol 1979). We used the Spanish version of this instrument translated in the study of Pozo (2010). This questionnaire assesses the degree to which parents of people with disabilities perceive the

support provided as useful. It comprises 23 items (e.g., *My relatives* or *the school*) rated on a 5-point Likert-type scale (0 = *not at all useful*; 4 = *extremely useful*). In addition to an overall score, the questionnaire also provides separate scores for three subscales: formal social support, informal social support and formative social support. In this study, as in the research by Pozo (2010), we used the sum of the scores for the first two subscales (formal and informal support) as a global measure. To calculate it, it is necessary to divide the sum of the individual scores for all items of these two subscales by the number of items answered, yielding a maximum score of 4 and a minimum of 0. The Cronbach's alpha for these subscales in the present study was .77.

Procedure

Participating families were recruited through associations of parents of children and teenagers with ASD in Spain and healthcare and social centres for people with ASD. An interview was arranged with those families that met the inclusion/exclusion criteria and agreed to participate. The inclusion criteria were (1) to be a parent of a child or adolescent with ASD; (2) current residents in Andalusia; (3) medium to high levels of Spanish. The exclusion criterion was to have a disorder or illness that involved cognitive deterioration or being in a severe dependency situation. If they met the inclusion criteria, a date was arranged for them to complete the battery of questionnaires. Interviews were conducted by two researchers in accordance with all relevant ethical principles: participation was voluntary, the study aims were clearly explained, and participants were assured that all data provided would be processed anonymously. Prior to the interviews, participants signed an informed consent document in accordance with the Declaration of Helsinki. This study was approved by the regional ethics committee (1517-N17).

Data analysis

To explore the situation and characteristics of these families, a descriptive analysis was carried out. In addition, through two-way factorial ANOVA analyses it was studied if there were differences in the data depending on the gender and the education level of the participants (used as a dummy variable, distinguishing between primary, which included parents who did not obtain a high school diploma, and secondary education, which included parents who had a high school diploma and beyond). The decision about the categories for the education level variable was related to whether education was compulsory at the time when participants were in school (primary school) and secondary or higher levels of education were optional (secondary school and beyond). Following this step, bivariate correlations were calculated to identify those which were more closely associated with FQoL. Next, a Multiple Linear Regression analysis was conducted using the hierarchical method for adding variables. All significance tests used an $\alpha = .05$, and R^2 was used as an index of effect size for the models, along with ΔR^2 for each predictor variable. ΔR was calculated with the partial correlations squared. The reference values to consider the effect size in the bivariate correlations, the ANOVA analyses and ΔR^2 in the hierarchical multiple linear regression analyses were .01 for a small effect size, .06 for a medium effect size and .14 for a large effect size (Cohen 1988). However, for R^2 in the hierarchical multiple linear regression analyses the reference values were .02 for a small effect size, .15 for a medium effect size and .35 for a large effect size (Cohen 1988). The IBM SPSS Statistics vs. 23 program was used for the data analysis.

Results

As observed in Table 1, means and standard deviations were calculated for FQoL, $M = 3.89$ ($SD = 0.46$), mindful attention $M = 4.04$ ($SD = 1.13$) and social support, $M = 2.56$ ($SD = 0.72$). In addition, in the case of FQoL, separate scores were calculated for each of its subscales (see Table 2). ANOVA, found no significant differences between mothers and fathers belonging to the same family system and mothers and fathers from different families, justifying the inclusion of all parents in the analyses. The descriptive statistics for these variables by gender and education level are shown in Table 3. The two-way factorial ANOVA for these variables by gender indicated no significant differences between men and women. Analysis did yield a significant difference in education level, with a small effect size. Participants with higher education level indicated higher levels of FQoL.

[Table 2 near here]

[Table 3 near here]

Table 4 presents the results of the bivariate correlations between the different study variables. Both mindful attention and social support correlated significantly with overall FQoL. The first variable had a medium effect size and the second one a large effect size. Mindful attention and social support did not have a significant correlation.

[Table 4 near here]

To respond to the study's second aim, we carried out hierarchical multiple linear regression analyses to determine the extent to which mindful attention and social support predicted FQoL. Prior to the analyses, and with the aim of reducing multicollinearity, the quantitative predictor variables were centred before the interactions between them were calculated. The data showed no multicollinearity problems, as observed from the tolerance values and the variance inflation factors (see Table 5). In the first model of the analysis,

participant's education level, perceived social support and mindful attention were added. Social support was included as a way of understanding the added value of mindful attention controlling for the effect of social support, as evidence in the scientific literature clearly shows the relation between social support and FQoL. Educational level was included because ANOVA analysis showed differences in FQoL according to the educational level. Due to the limited number of participants, gender was not included, as according to the ANOVA analyses there were no gender differences in the perception of FQoL. In the second model, the interaction between mindful attention and social support was incorporated, due to the previous literature stating the relevance of social support. The objective was to find out if mindful attention was related to FQoL in families with both high and low levels of social support, incorporating a deeper understanding of how mindful attention is related to FQoL. More interactions could not be added to the model due to the limitations in the sample size.

As shown in Table 5, the first model was the one which best predicted FQoL, explaining 33% of the variance (medium effect size, $R^2 = .33$). In this model, the variable of education level explains 9% of the variance (medium effect size, $\Delta R^2 = .09$), the social support explains 15% (large effect size, $\Delta R^2 = .15$), and the mindful attention explains 10% (medium effect size, $\Delta R^2 = .10$). The three of them were found to significantly predict FQoL, with this relationship being direct: higher levels of education level, social support and mindful attention predicted better perceived quality of life. As shown also in Table 5, the interaction between mindful attention and social support in terms of predicting FQoL was not significant.

[Table 5 near here]

Discussion

The aim of this study was to explore factors which are related to FQoL among families with a child or teenager with ASD, that might be valuable in planning interventions for this population.

Specifically, the first aim was to describe self-reported FQoL, social support and mindful attention of parents of children and teenagers with ASD and to explore the relationships between these variables. If we compare the mean value for overall FQoL in our study with those of the various subscales, we see that two dimensions scored below of this mean: financial wellbeing and family accommodation. These results are partially consistent with other studies using the same instrument in a Spanish population (Giné *et al.* 2013; Mas *et al.* 2016) and with results from the revised version of this scale (Balcells-Balcells *et al.* 2020). Financial wellbeing was rated as the lowest domain in studies with families of children with intellectual disabilities; however, family accommodation was not rated lower than other domains. The low scores in financial wellbeing, may be due to the fact that these families incur certain additional costs not covered by either the social security system or private insurance, such as speech therapy, private therapy or support staff, etc. Furthermore, parents often have to adapt their working hours or even leave their jobs to look after their child with ASD, thereby reducing their earnings (Fletcher *et al.* 2012). Regarding family accommodation, as outlined earlier in this paper, having a child with ASD involves particular challenges: the reorganization and structuring of the daily life (Meirsschaut *et al.* 2010), feeling overburdened and having no time for themselves (Hutton *et al.* 2005) and having difficulties engaging in typical everyday and leisure activities

(Degrace 2004). These additional challenges could explain why the results obtained on this subscale were particularly low in comparison to the overall FQoL.

The subscales with the highest scores were emotional wellbeing and family interaction, consistent with other studies using the same instrument (Giné *et al.* 2013; Mas *et al.* 2016). These results could point towards certain strengths in these families. Considering the higher scores in emotional wellbeing, these families could perceive themselves as having adequate psychological resources to deal with the feelings and worries resulting from having a child with ASD. They also value positively the relationship between family members, based on mutual support and respect, as shown in the family interaction domain. These are two important strengths that can help to cope with any difficulties that may arise. Finally, due to the poor internal consistency of the subscale of health, no conclusions should be drawn from these data in relation to this subscale.

The results for mindful attention obtained in our study were higher than those reported by other authors. For example, in a study by Lunskey *et al.* (2015), parents of children and adolescents with developmental disabilities had lower levels of mindful attention than our participants, even after having attended a mindful attention training course. This difference may be due to the differences in the selected samples for each study. Lunskey *et al.* (2015) conducted their study in North America, whereas our study was carried out in Andalusia, Spain. In addition, the present study focused on parents with younger children than Lunskey *et al.* (2015) and sampled exclusively parents with a child on the autism spectrum, while Lunskey *et al.* (2015) had a wider range of diagnosis, targeting parents of adolescents and adults with developmental disabilities.

Regarding social support, results revealed mid-level values which may indicate that while the families in our study perceived a certain degree of social support, they were not completely satisfied with the help received. This finding is consistent with those reported by other studies, which conclude that parents of people with development disorders do not have a sufficiently stable both formal and informal support system (Álvarez 2016; Brown, MacAdam *et al.* 2006; Carpenter *et al.* 2008; Mercado *et al.* 2010). More specifically, in a Spanish sample, caregivers of children and teenagers with ASD have been found to have low levels of satisfaction with their informal sources of support while being generally satisfied with the formal support they receive (Álvarez 2016). Spanish families of children with ASD reported poorer friendship networks than parents of individuals with other difficulties, even though they were precisely the ones most in need of this support. They were receiving most support from the school and other parents with children with ASD, in comparison with parents of people with other developmental difficulties (Álvarez 2016). In the same line, in an investigation carried out by Baixauli *et al.* (2019) with families with a member with ASD from Spain, 38.46% of them were considered to be high-risk level, including displaying low levels of social support, which was associated with higher stress levels, indicating the importance and need of social support.. These studies reveal the need to ensure that families of children and adolescents with ASD receive more support in both formal and informal environments. Social support should therefore be a priority in the interventions targeting this population.

Analysis found no significant differences in the above-mentioned variables based on gender. We had hypothesized no significant differences in mindful attention, as in Brown's study (Brown *et al.* 2003), but we expected gender differences in FQoL and social

support. More research is needed to clarify if gender is an influencing factor for these two variables, due to the variability of results in the scientific literature (e.g., Pozo 2010; Sharabi *et al.* 2018). When we analysed all variables based on educational level, significant differences were found in FQoL, but not mindful attention or social support. Those with at least a high school diploma scored significantly higher than those with only primary education or below, as expected and as seen in other studies (Hsiao 2018). According to the results reported by Ferrer *et al.* (2017), who found an association between perceived control and FQoL, it may be that having a higher education level is linked to a stronger perception of control over one's life, and that this in turn fosters a more satisfactory perception of FQoL.

Significant correlations were also found between FQoL and both social support and mindful attention. This is consistent with the results reported by previous studies, which observed that both the formal and informal support received by these families predicted FQoL (Davis *et al.* 2009; Epley *et al.* 2011; Jones 2018; Pozo *et al.* 2014). For its part, mindful attention has been found to be associated with healthy psychological factors such as subjective perception of wellbeing, lower emotional reactivity, better behaviour regulation (Keng *et al.* 2011) and lower parenting stress (Wang *et al.* 2021) although no results have been found linking it directly to FQoL.

As regards our second aim, namely, to determine the relation of social support and mindful attention to the FQoL of parents of children and adolescents with ASD, the analysis found that both social support and mindful attention were significant predictors of FQoL. The interaction between mindful attention and social support, however, was not significant. The high percentage of variance in FQoL explained by both social support and

mindful attention indicates the importance for the wellbeing of these families to have a trustworthy support network and receive help from professionals.. In this sense, the research carried out by Hutton *et al.* (2005) provides empirical evidence that parents feel overburdened by the extra workload involved in catering to their child's needs, which leaves them with no time for themselves. Social support may be a key element in FQoL, on that help from those around the family may contribute to alleviating the perceived burden of parenting. Results also highlight the importance of mindful attention for families of children and adolescents with ASD, since it has been found to buffer the impact of the stigma attached to ASD (Chan *et al.* 2017), reduce stress and depressive symptoms (Beer *et al.* 2013; Conner *et al.* 2014) and enhance long-term psychological wellbeing (Cachia *et al.* 2016). It could be interesting to incorporate in future analysis the relationship between mindful attention and specific domains within the construct of FQoL. Mindful attention can be particularly relevant for the psychological wellbeing domain, as different studies have reported its relationship with lower levels of stress, depression and psychological wellbeing (Beer *et al.* 2013; Cachia *et al.* 2016; Conner *et al.* 2014). It could also be particularly influential in the parenting dimension, as some studies have indicated a relationship between mindful attention and mindful parenting (Wang *et al.* 2021). However, it could have a less clear relationship with other domains, such as the perception of financial wellbeing, which involves an external frame of reference..

Finally, the lack of interaction between mindful attention and social support in terms of predicting FQoL may be interpreted as indicating that mindful attention is a useful internal resource for families independently of their support system. Thus, mindful

attention could improve families' ability to accept their circumstances and appreciate what they have, thereby increasing their sense of wellbeing (Swickert *et al.* 2019).

Limitations

This study has several limitations. First, participants in the study were recruited from a specific sociocultural context: Andalusia, Spain, and were selected using the convenience sampling method. The origin of the sample and selection procedure used therefore limit the extent to which the results obtained can be generalised to other populations. Second, no conclusions can be drawn regarding causality, since there may be many variables involved in this relationship that were not controlled for. In addition, the two groups based on the education level were not very evenly matched in number, with the consequences that this entails. Despite these limitations, the present study makes an interesting contribution to the field, providing empirical evidence of mindful attention as an important predictor of FQoL.

Conclusions and practical implications

Results present evidence on factors that could be modified to improve the FQoL of families of children and adolescents with ASD. Mindful attention training could be considered and incorporated when planning interventions aimed at helping families of individuals with ASD. Being mindful is not something that happens naturally; a certain degree of practice is required (García *et al.* 2018). Thus, including programs designed to develop mindful attention among parents of children diagnosed with ASD may help foster the wellbeing of parents along with a more positive adaptation for the entire family. Consequently, intervention programs aimed at developing mindful attention among families of children and teenagers with ASD will benefit both the parents and the child with ASD. These results also indicate the importance of incorporating a family centred

approach in the provision of support services for improving quality of life among these families, as this may foster the perception of satisfactory formal social support Families with a better quality of life function in a healthier manner and are more capable of fostering the development and wellbeing of all their members (Rosenbaum *et al.* 1998).

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Disclosure statement

The authors report there are no competing interests to declare.

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Appendices

Table 1. Sociodemographic data of the participants and their children with autism spectrum disorder.

Characteristics	<i>N</i> (%)
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Gender of participants	
Man	39 (40.60%)
Woman	57 (59.40%)
Education level of participants	
Uneducated	1 (1.00%)
Primary education	11 (11.50%)
Secondary education	38 (39.60%)
University studies	43 (44.80%)
Missing data	3 (3.10%)
Professional situation of participants	
Retired person, housewife/husband or not looking for a job	20 (20.80%)
Unemployed but active jobseeker	15 (15.60%)
Steady job	48 (50.00%)
Working with no steady job	11 (11.50%)
Missing data	2 (2.10%)
Gender of their children with autism spectrum disorder	
Male	53 (77.94%)
Female	15 (22.06%)
Level of severity of the children with autism spectrum disorder	
Mild	12 (17.65%)
Moderate	28 (41.18%)
Severe	10 (14,71%)
Missing data	18 (26.47%)

Table 2. Descriptives of the subscales of the Spanish Family Quality of Life Scale.

Subscales	<i>M</i>	<i>SD</i>
Emotional Wellbeing	4.11	0.59
Family Interaction	4.04	0.51
Health	3.93	0.58
Financial Wellbeing	3.62	0.79
Parents' Organization and Skills	3.83	0.58
Family Accommodation	3.79	0.56
Social Inclusion and Participation	3.94	0.59

Table 3. Descriptives of the variables according to parents' sex and education level and results for the two-way factorial ANOVA.

Variables	Factor	Category	<i>M</i>	<i>SD</i>	<i>F</i> ^a	<i>df</i>	<i>p</i>	partial <i>R</i> ²	
Family quality of life	Gender	Man	3.94	0.42	0.08	1, 89	.777	.00	
		Woman	3.86	0.49					
	Education level	Basic	3.61	0.57	4.28*	1, 89	.041	.05	
		High	3.94	0.43					
	Gender X Education level	Man	Basic	3.62	0.15	0.02	1, 89	.890	.00
			High	3.98	0.43				
Woman		Basic	3.60	0.67					
		High	3.91	0.44					
Mindful attention	Gender	Man	4.25	1.13	0.44	1, 89	.510	.00	
		Woman	3.92	1.14					
	Education level	Basic	4.13	1.03	0.08	1, 89	.781	.00	
		High	4.04	1.17					
	Gender X Education level	Man	Basic	4.27	0.71	0.05	1, 89	.825	.00
			High	4.24	1.16				
Woman		Basic	4.09	1.15					
		High	3.89	1.15					
Social support	Gender	Man	2.58	0.74	0.25	1, 88	.616	.00	
		Woman	2.56	0.72					
	Education level	Basic	2.81	0.54	1.73	1, 88	.191	.02	
		High	2.53	0.75					
	Gender X Education level	Man	Basic	2.99	0.45	0.18	1, 88	.675	.00
			High	2.54	0.75				
Woman		Basic	2.75	0.57					
		High	2.52	0.75					

a. Snedecor's *F*; * *p* < .05

Table 4. Pearson's correlations, statistical significances, effect size and *N* of the target study variables.

	Family quality of life				Mindful attention			
	<i>r</i>	<i>p</i>	<i>R</i> ²	<i>N</i>	<i>r</i>	<i>p</i>	<i>R</i> ²	<i>N</i>
Mindful attention	.35**	.001	.12	96				
Social support	.41**	.000	.17	95	.15	.143	.02	95

** $p < .01$

Table 5. Results for the hierarchical multiple lineal regression analyses to predict the family quality of life.

	Beta	<i>F/t</i>	<i>df</i>	<i>p</i>	$R^2/\Delta R^2$	Tol.	VIF
Model 1		15.83**	3,88	.000	.33		
Education level	.30	3.44**	88	.000	.09	.98	1.02
Social support	.39	4.49**	88	.000	.15	.96	1.04
Mindful attention	.32	3.71**	88	.000	.10	.98	1.02
Model 2		12.49**	4,87	.000	.34		
Education level	.31	3.57**	87	.000	.09	.98	1.02
Social support	.37	4.16**	87	.000	.13	.93	1.08
Mindful attention	.36	4.00**	87	.000	.12	.94	1.07
Mindful attention X Social support	-.13	-1.40	87	.165	.01	.93	1.08

** $p < .01$; R^2 and F for the models; ΔR^2 and t for the predictors
Tol. = tolerance value; VIF = variance inflation factor