### ORIGINAL PAPER

# Individual and Marital Adaptation in Men with Autism Spectrum Disorder and their Spouses: The Role of Social Support and Coping Strategies

Jo Renty · Herbert Roeyers

Published online: 1 November 2006

© Springer Science+Business Media, LLC 2006

**Abstract** The aim of the present study was to examine the predictive value of social support and coping for individual and marital adaptation in adult men with autism spectrum disorder (ASD) and their spouses, based on the double ABCX model of adaptation. Twenty-one couples participated in the study and completed measures of stressor severity, social support, coping, individual and marital adaptation. Bivariate analyses showed that each of the model components was related to adaptation in men and women. Hierarchical regression analyses revealed that, after controlling for relevant demographics and stressor severity, informal support was a strong, and unique predictor of adaptation in both spouses (explained variance: 27-89%). Coping did not add to the prediction of adaptation. Clinical implications and limitations are discussed.

**Keywords** Autism spectrum disorder · Double ABCX model · Social support · Coping · Adaptation

### Introduction

Follow-up studies in high-functioning persons with autism spectrum disorder (ASD) revealed that the social and communicative impairments of these adults often give rise to lower social adaptive levels of functioning than what would be expected on the basis of

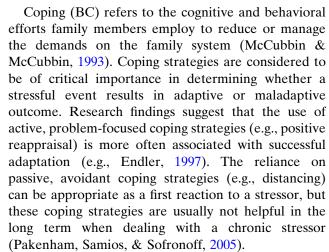
J. Renty · H. Roeyers (☒) Research Group Developmental Disorders, Department of Experimental Clinical and Health Psychology, Ghent University, Henri Dunantlaan 2, B-9000 Ghent, Belgium e-mail: Herbert.Roeyers@Ugent.be their language skills and their-often excellent-cognitive abilities (for a review: see Howlin, 2000). Although the majority of adults with ASD have poor social relationships, recent studies (Howlin, 2000; Renty & Roeyers, 2006), and clinical observations have suggested that the group of adults with ASD who are married or cohabiting should not be underestimated. Despite the increasing amount of literature on outcome (e.g., Engström, Ekström, & Emilsson, 2003) and predictors of outcome in adults with ASD (e.g., Lord & Venter, 1992; Howlin, Goode, Hutton, & Rutter, 2000; Renty & Roeyers, 2006), no attention has been paid to the psychosocial and interpersonal functioning of parents with a disorder within the autism spectrum and their spouses. Nonetheless, the symptoms associated with ASD (such as social and communicative difficulties) concern particularly those aspects that are seen as indispensable for the engagement in close interpersonal relationships (Karney & Bradbury, 1995).

Many researchers have elucidated that individual and interpersonal outcomes following a severe stressor (e.g., a diagnosis of a disability) are the result of multiple factors interacting with each other. Among the most widely cited theoretical frameworks for conceptualising adaptation to stressful events is the double ABCX model of McCubbin and Patterson (1983). According to this model, adaptation (XX) to a crisis is shaped by the following factors: the severity of the stressor (e.g., severity of the person's diagnosis) and pile-up of demands (aA), the family resources (e.g., social support) (bB), the changes that families make to their definition of the situation to help understand the situation (cC), and the coping strategies employed (BC).



Research on adaptation in families of disabled or chronically ill family members are inconclusive regarding the impact of stressor severity and pile-up of demands (aA) on successful adaptation. Some studies have suggested that a more severe stressful event increases the vulnerability of a person to the negative effects of stress (e.g., Floyd & Gallagher, 1997; Keller & Honig, 2004), whereas other studies showed that families adapted successfully to the presence of a disability or chronic illness in their family, irrespective of the severity of the disorder. The latter studies have demonstrated that other variables such as family resources (bB) and coping strategies (BC) have more significance in terms of successful adaptation than stressor severity (Kazak, 1986; Bristol, 1987). These variables are all more or less amenable to change, and are thus more relevant for family members and practitioners than more stable factors, such as the symptomatology of the disorder.

One of the most important family resources (bB) is social support (McCubbin & Patterson, 1983). A sizeable body of literature suggests that social support has a strong positive mediational effect on personal and family adaptation (e.g., Weiss, 2002; Holland & Holahan, 2003; Bromley, Hare, Davison, & Emerson, 2004). Although the literature on social support emphasizes the discrimination between received social support (=actual transfer of support) and perceived social support (=perceived availability of a supportive social network), it is remarkable that studies using the double ABCX model often neglect this distinction. Most studies examine the significance of either the amount of received support or the level of perceived support. Although a systematic review of social support literature shows that the perception that support is available is most strongly linked to personal well-being (Kessler & McLeod, 1985), studies using the ABCX model have established the significant impact of both received (e.g., Ostberg & Hagekull, 2000) and perceived social support (e.g., Tak & McCubbin, 2002). With respect to the source of social support, existing research has demonstrated the powerful buffering effect of spousal support (e.g., Bristol, Gallagher, & Schopler, 1988; Herman & Thompson, 1995; Saloviita, Italinna, & Leinonen, 2003) and of support from family, friends, and acquaintances (e.g., Trivette & Dunst, 1992; Saloviita et al., 2003). In contrast, the stress ameliorating impact of formal sources of support is more equivocal. Some studies found a strong relation between level of received formal support and adaptation (e.g., Bristol, 1984; Honig & Winger, 1997), while others found no evidence for an association between these two variables (e.g., Saloviita et al., 2003; White & Hastings, 2004).



Adaptation in families of children with ASD has been well documented in literature (e.g., Bristol, 1987; Henderson & Vandenberg, 1992; Bromley et al., 2004; Pakenham et al., 2005), but outcome in parents with ASD and their spouses has not received adequate attention. The present study focuses on the predictive value of stressor severity, received and perceived social support, and coping strategies for individual and marital adaptation as perceived by adult men with ASD and their spouses. It was hypothesized that better individual and marital adaptation would be positively related to the level of informal and formal social support and the use of problem-focused coping strategies, and inversely related to autism-specific traits and the use of avoidant coping strategies.

## Method

### **Participants**

Couples for this study were recruited through advertisements in an ASD advocacy group newsletter and a newsletter of the Flemish user organisation for ASD. Several criteria were set forward to be eligible to take part in the study: (1) the male spouse of the couples had to fulfill established DSM-IV-TR criteria for autism, Asperger Syndrome or PDD-NOS; a formal diagnosis of ASD, given by a multidisciplinary team of experienced clinicians, was required, (2) the couples had to be married or cohabiting for at least 1 year; and (3) the couples had to have at least one child under the age of 18, who resided at home. Twenty-one couples participated in the present research. The men ranged in age from 35 to 54 years (M = 43.52, SD = 4.98), the women also ranged in age from 35 to 54 years (M = 42.01, SD = 5.25). Of the couples, 91% was married and 9% cohabited. The length of the



relationship ranged from 10 to 25 years (M = 15.55, SD = 4.41). Based on the level of education, it can be assumed that all adults with ASD were in the normal range of intelligence. All participants completed high school, 76% had a college or university degree. Socioeconomic status was assessed by Hollingshead four factor index (Hollingshead, 1975, Unpublished). There were 9 couples in Classes I–III (lower socio-economic classes) and 12 couples in Classes IV and V (upper socio-economic classes). Almost all men (86%) were employed full-time. Of the women, 38% was employed full-time, 48% was employed half time, and 14% was not employed. Median annual family income was 30,000–39,999€. The number of children in the family ranged from 1 to 6 (M = 2.48, SD = 1.33). The majority of the couples (81%) had one or more children with a diagnosis within the autism spectrum.

### Measure

# Autism-specific Traits

The degree to which the parent with ASD shows traits related to the autism spectrum, was measured using the Autism-spectrum Quotient (AQ; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001; Ponnet, Roeyers, & Buysse, 2001, Unpublished). The AQ is a 50-item questionnaire, falling into five subscales: Social Skills, Attention Switching, Attention to Details, and Communication and Imagination. Scores on the total scale range from 0 to 50, the higher the score on the AQ the larger the extent of autistic traits shown by the person. In the present study, the AQ was used as a self-report measure for the men and as an other report measure for their spouses. The instrument shows good psychometric properties (Baron-Cohen et al., 2001). The internal consistency of the total scale proved to be satisfactory in the present sample, with a Cronbach's Alpha coefficient of 0.78 for the men and 0.70 for the women.

### Informal Social Support

A source specific version of the Social Provisions Scale (SPS; Cutrona & Russell, 1987) was administered to evaluate perceived social support from two sources: the spouse on the one hand (SPS-S) and family, friends, and acquaintances on the other hand (SPS-F). The scale comprises of 24 items with a 4-point Likert scale and has six subscales: Reliable Alliance, Guidance, Social Integration, Attachment, Reassurance of Worth, and Opportunity to Provide Nurturance. Higher scale scores indicate higher levels of perceived social support.

Reliability for the scales ranges from 0.87 to 0.91 across a range of populations (Cutrona & Russell, 1987; Russell & Cutrona, 1991). In the present sample, the Cronbach's Alpha for the SPS-S was 0.93 for the men and 0.88 for the women. Regarding the SPS-F, the Alpha coefficient was 0.93 for the men and 0.92 for the women.

To assess the extent of received support from the social network, a source specific version of the Inventory of Social Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsey, 1981) was used. The questionnaire was administered with respect to received support of the spouse on the one hand (ISSB-S) and received support of the family, friends, and acquaintances on the other hand (ISSB-F). The scale is a 40-item selfreport measure rated on a 5-point scale. Higher scores suggest more received social support. The internal consistency has been consistently above 0.90 across different studies (e.g., Barrera, 1981; Barrera et al., 1981; Cohen & Hoberman, 1983). In the present sample, the Cronbach's Alpha for the ISSB-S was 0.91 for the men and 0.93 for the women. Regarding the ISSB-F, the Alpha coefficient was 0.95 for the men and 0.96 for the women.

### Formal Support

A modified version of the Camberwell Assessment of Need (CAN; Phelan et al., 1995; McCrone et al., 2000) was used to survey the subjective perception of formal support needs and the extent of received formal support. The CAN was administered in an interview format with both spouses. In contrast to the original CAN which assesses support needs and received formal and social support on 22 life domains, its present use was limited to received and needed formal support on five life domains: Daily Activities, Information on ASD and ASD-Specific Interventions, Psychological Distress, Intimate Relationship, and Child Care. The current and needed levels of formal support are rated on a four point-scale (0 = none, 1 = low, 2 = moderate,and 3 = high). Scores on both scales range from 0 to 20, the higher the score on the scale the larger the extent of needed or received formal support, respectively.

# Coping Strategies

The ways of coping questionnaire (Lazarus & Folkman, 1984) measured two coping strategy composites on 66 items with a 4-point Likert-format scale (from (0) not used to (3) used a great deal): the Approach Coping Strategy composite (ApCS) and the Avoidance Coping Strategy composite (AvCS). Participants were asked to think about a highly stressful situation



involving the spouse with ASD. The questionnaire provides scores on eight coping strategy scales (which are either assigned to the ApCS or the AvCS): Confrontive Coping (ApCS), Distancing (AvCS), Self-Controlling (AvCS), Seeking Social Support (ApCS), Accepting Responsibility (AvCS), Escape-Avoidance (AvCS), Planful Problem Solving (ApCS), and Positive Reappraisal (ApCS) (Holland & Holahan, 2003).

Folkman and Lazarus (1988) reported Cronbach's Alpha coefficients from 0.61 to 0.79 for the subscales. In the present study, three items (item 14, 33, and 43) were removed to improve the internal consistency of the subscales. Further reliability tests were conducted on the remaining items. The Cronbach's Alpha for the ApCS was 0.82 for the men and 0.87 for the women. Regarding the AvCS, the Alpha coefficient was 0.64 for the men and 0.78 for the women.

# Individual Adaptation

The Symptom Checklist-90 (SCL-90; Derogatis, 1977; Arrindell & Ettema, 1986) is a widely used 90-item self-report questionnaire used to assess psychological distress. Each item is rated on a 5-point scale ("not at all" to "extremely") to indicate the severity of the symptom over the past week. Besides the Global Severity Index (GSI), which provides an index of overall psychological distress, the subscales of the Dutch version of the SCL-90 assess eight clusters or primary symptom dimensions: Agoraphobia, Anxiety, Depression, Somatization, Insufficiency of Thought and Behavior, Interpersonal Sensitivity, Hostility, and Insomnia. A higher score suggests a greater level of psychological distress. Alpha coefficients for the subscales range from 0.73 to 0.92 (Arrindell & Ettema, 1986). In the present sample, Cronbach's Alpha for the total scale was 0.98 for the men and 0.97 for the women.

# Marital Adaptation

Marital adaptation of both parents was measured by the Dyadic Adjustment Scale (DAS; Spanier, 1976). The DAS is a 32-item self-report questionnaire with four subscales: Dyadic Consensus (13 items), Dyadic Satisfaction (10 items), Dyadic Cohesion (5 items), and Affectional Expression (4 items). Summed scores on these four scales indicate overall Dyadic Adjustment, with higher scores reflecting better marital adaptation. Spanier (1976) reported an overall scale reliability of 0.96. In the present sample, Cronbach's Alpha for the total scale was 0.95 for the men and 0.91 for the women.



Bivariate associations between the ABCX model predictors (autism-specific traits, social support, and coping) on the one hand and individual and marital adaptation on the other hand were explored using Pearson's correlations, for both men and women.

With respect to the men (see Table 1), the analyses revealed that less perceived social support from family, friends, and acquaintances was related with more psychosocial distress. Marital adaptation was significantly associated with more received and perceived social support from the spouse and from family, friends, and acquaintances. With regard to coping, a significant association was found between the AvCS composite and individual adaptation, such that more avoidance coping was associated with more psychosocial distress. Marital adaptation in men was not related to any coping strategy. With respect to the women (see Table 2), individual adaptation was strongly related to received social support from family, friends, and acquaintances, such that women with higher levels of psychosocial distress received more support. Marital adaptation of the women was inversely related to the degree of autism-specific traits of their husband, while perceived and received support from their spouse were positively related to marital adaptation. Regarding the

 Table 1 Predictors of individual and marital adaptation in men

		-			
Predictor variable	Individual adaptation (SCL-90) <sup>a</sup>	Marital adaptation (DAS) <sup>b</sup>			
AQ	0.269	-0.102			
SPS-P	-0.205	0.830**			
SPS-F	-0.654**	0.831**			
ISSB-P	-0.139	0.445*			
ISSB-F	0.003	0.585**			
CAN-Received	0.223	-0.190			
CAN-Discrepancy	0.337	0.038			
WOC-ApCS	0.182	-0.050			
WOC-AvCS	0.445*	-0.153			

AQ Autism severity, SPS-S Perceived social support from the spouse, SPS-F Perceived social support from family, friends, and acquaintances, ISSB-S Received social support from the spouse, ISSB-F Received social support from family, friends, and acquaintances, CAN-Received Received formal support, CAN-Discrepancy Discrepancy between received and needed formal support, WOC-ApCS Approach Coping Strategy composite of the Ways of Coping Questionnaire, WOC-AvCS Avoidance Coping Strategy composite of the Ways of Coping Questionnaire



<sup>&</sup>lt;sup>a</sup> Higher scores on the SCL-90 suggest higher levels of psychosocial distress, and thus lower levels of individual adaptation

<sup>&</sup>lt;sup>b</sup> Higher scores on the DAS suggest higher levels of marital adaptation

<sup>\*</sup> p < 0.05

<sup>\*\*</sup> p < 0.01

Table 2 Predictors of individual and marital adaptation in women

Predictor variable	Individual adaptation (SCL-90)	Marital adaptation (DAS)		
AQ	0.240	-0.457*		
SPS-S	0.126	0.779**		
SPS-F	0.365	-0.002		
ISSB-S	0.032	0.464*		
ISSB-F	0.677**	-0.355		
CAN-Received	-0.049	0.039		
CAN-Discrepancy	0.381	-0.433		
WOC-ApCS	0.304	0.146		
WOC-AvCS	0.518*	0.135		

p < 0.05

coping strategies, a significant positive relation was found between the AvCS composite and psychosocial distress. Marital adaptation of the women was not related to any coping strategy. Formal support variables were associated with neither individual nor marital adaptation in men and women.

Hierarchical multiple regression analyses were performed to determine the impact of the social support and coping variables on individual and marital adaptation, respectively, after controlling for the degree of autism-specific traits. Separate regressions were performed for men and women. Preliminary analyses were conducted to determine whether the predictor and criterium variables varied as a function of demographic information. Pearson's correlations revealed that socio-economic status was related with the fathers' individual adaptation, such that a lower socio-economic status was related with more psychosocial distress (r = -0.440, p = 0.046). Other demographic characteristics (such as age, years of marriage, and number of children) were not significantly associated with any

predictor or criterium variables. Socio-economic status was entered as a covariate in the regression analysis that predicted fathers' individual adaptation.

Considering the small sample size, only those support and coping variables that were related to, respectively, individual and marital adaptation at the bivariate level were included as predictors in the hierarchical multiple regression analyses. The ABCX model determined the order of entry of the predictor variables: on step 1, relevant demographic variables were entered, the severity of the stressor was entered on step 2, support variables on step 3, and coping variables on step 4. Collinearity diagnostics were performed using variance inflation factors (VIF). No multicollinearity was evident since the VIF for the predictors ranged between 1.06 and 3.07 (<10) (Cohen, Cohen, West, & Aiken, 2003). Table 3 demonstrates the results of these hierarchical multiple regression analyses.

All four regression models were significant and the explained variance ranged between 50 and 90%. After controlling for the effects of demographic information and the degree of autism-specific traits, social support accounted for a significant amount of variance (27–89%) in individual and marital adaptation in both spouses. On the other hand, coping strategies failed to explain a significant amount of variance in adaptation over and above autism-specific traits and social support.

## **Discussion**

To our knowledge, the present study is the first empirical investigation that examines adaptation and predictors of successful adaptation in adult men with ASD and their spouses, using the conceptual framework of the ABCX

Table 3 Results of hierarchical multiple regression analyses investigating the predictive value of autism-specific traits, social support, and coping for individual and marital adaptation in men with ASD and their spouses

Predictors	Men			Women				
	Individual adaptation		Marital adaptation		Individual adaptation		Marital adaptation	
	$\Delta R^2$	β	$\Delta R^2$	β	$\Delta R^2$	β	$\Delta R^2$	β
Demographics								
SES	0.193*	-0.399*						
Autism-specific traits	0.118	0.247	0.010	0.205	0.057	-0.124	0.209*	-0.124
Social support	0.272**		0.894***		0.407**		0.412**	
SPS-S				0.622**				0.753**
SPS-F		-0.427*		0.560**				
ISSB-S				-0.137				-0.048
ISSB-F				0.008		0.608*		
Coping strategies	0.067				0.032			
AvCS		.289				0.222		
Total $R^2$	0.650		0.904		0.497		0.621	
Total F	F(4,16)	= 7.41**	F(5,15) =	28.38***	F(3,17)	= 5.60**	F(3,17)	= 9.28**



<sup>\*\*</sup> p < 0.01

<sup>\*</sup> *p* < 0.05 \*\* *p* < 0.01

<sup>\*\*\*</sup> p < 0.001

model (McCubbin & Patterson, 1983). The prediction that adaptation would be associated with higher levels of (informal) social support and with lower levels of avoidance coping was supported at the bivariate level. Unexpectedly, formal support variables, approach coping strategies, and stressor severity (except for marital adaptation in women) were unrelated to adaptation.

Several patterns emerged over the four regression models tested to examine the predictive value of the double ABCX model components for successful individual and interpersonal adaptation of adult men with ASD and their spouses.

First, stressor severity was unrelated to individual adaptation in both men and women and to marital adaptation in men. It might be possible that other variables reflecting the pile-up of demands caused by the initial stressor (e.g., financial charges, organizational workload, and parenting stress) have more significance in terms of adaptive or maladaptive outcome in both men and women. Several studies (e.g., Lavee, McCubbin, & Patterson, 1985; Han, 2003) reported on the fact that the effect of the pile-up of demands on adaptation is stronger than the effect of the initial stressor. On the other hand, the degree of autism-specific traits proved to be related to marital adaptation in the spouses of men with ASD. Women whose husband showed less autism-specific traits reported higher levels of marital satisfaction. However, the negative effect of stressor severity on marital adaptation was mediated by spousal support. In particular, it was the perceived spousal support that acted as an important buffer for the demands of living with a partner with ASD.

Second, at the multivariate level, social support from the informal network was related to both domains of adaptation in men and women. The results were not univocally in the direction of one source of support or one dimension of support (received/perceived) having more impact on adaptation than the other one. Although individual adaptation was significantly associated with support from family, friends, and acquaintances in both men and women, differences between both groups were found regarding the significance of received versus perceived support on the one hand, and with respect to the direction of the association on the other hand. Better individual adaptation in men was associated with more perceived social support from family, friends, and acquaintances, whereas more psychosocial distress in women was related with more support received from this source. Although perceived social support is generally considered as a stronger predictor of personal well-being than received social support (Kessler & McLeod, 1985) and although we expected social support to be positively related to adaptation, it may be that the latter finding is primarily attributable to the attempt of family friends, and acquaintances to satisfy the support needs of women with high levels of psychological distress. However, longitudinal data are necessary to sort out the direction of the association between received support from family, friends, and acquaintances and psychosocial distress in women.

Furthermore, the lack of a significant association between spousal support and individual adaptation in both men and women warrants further attention. A large amount of literature on social support focuses on the significance of spousal support for individual adaptation to stressful events (Coyne & Downey, 1991). However, since we did not find any significant association between both variables in our study, it is possible that individual well-being in couples with one spouse having a social and communicative impairment depends more on other variables such as personality traits, self-esteem, appraisal of the stressor, positive events, etc. Future research should examine the role of these and other potentially relevant variables for individual adaptation in men with ASD and their spouses.

Marital adaptation was significantly associated with perceived and received spousal support in both men and women. This finding is consistent with prior research in couples that suggests that spousal support is an important interpersonal domain in marriage that contributes to the relationship quality (e.g., Pasch & Bradbury, 1998). Besides, received and perceived support from family, friends, and acquaintances added significantly to the prediction of marital adaptation in men.

Third, we found no evidence that formal support from professionals and services was related with individual and marital adaptation in men with ASD or their spouses. The lack of an association between the amount of formal support and improved well-being was also found in other studies (e.g., White & Hastings, 2004; Renty & Roeyers, 2006). Although Renty and Roeyers (2006) found a significant association between formal support discrepancy and outcome in high-functioning adults with ASD, this association was not found in the present sample of married adults. The limited number of formal support needs of the present sample probably accounts for the reduced importance of both formal support variables in terms of individual or interpersonal outcome.

Finally, the prediction that coping would be related to better adaptation was partially supported at the bivariate level. The use of avoidance coping strategies was related with lower levels of individual adaptation in both men and women, but the prediction that approach



coping strategies would be related to better adaptation was not supported. On the one hand, the latter finding may be due to the fact that the WOC failed to tap particular approach coping strategies associated with having (a spouse with) ASD. On the other hand, it is possible that the actual use of approach coping strategies is less effective in the context of living with (a spouse with) ASD. Other studies investigating adaptation in parents of children with ASD also failed to find a significant association between problem-focused coping strategies and adaptation (e.g., Bundy, 1996; Pakenham et al., 2005).

It is important to note some of the limitations, which are inherent in the present study. First, since the population of parents with a formal diagnosis of ASD is small, we experienced many difficulties in finding a reasonable study sample to take part in the present study. The present sample was rather small and therefore, our results lack statistical power. Besides, the reliance on a non-random sample recruited through advertisements may have resulted in a sample that is not representative for the target population. Our sample mainly consisted of participants with high levels of education and with one or more children with a diagnosis within the autism spectrum. Therefore, the generalizability of the findings may be limited to a similar population. Third, the use of the AQ as other report measure has never been described before. Although both the men with ASD and their spouses obtained, respectively, self- and other report scores that were reasonably high, the male spouses reported to have significantly less autism-specific traits than what their spouses perceived. Since some items of the AQ may be difficult to judge for other persons than the ones with ASD (e.g., some items from the subscale Imagination), it is possible that the high scores of the female spouses reflect in part the familiarity with the characteristics of ASD, more than the actual symptoms as shown by their spouses. Additional research should determine whether the identification of autism specific traits by persons other than the individual with ASD is related to ones knowledge of the core symptoms of ASD. Fourth, given the cross-sectional research design, we were not able to determine causal relations between the variables under study. Longitudinal data would be necessary to investigate the process of adaptation over time and to ascertain the causal relation between the variables under study. It is intuitively compelling to suggest that more spousal support leads to better marital adaptation. However, our cross-sectional data do not rule out the alternative direction of the causal relation, that in happier marriages spouses are more apt to support each other. Finally, the data resulted from questionnaires only. Response bias and inflated associations between variables resulting from a shared method variance may have affected our findings.

Despite these limitations, the findings of this study yield some important clinical implications. Traditionally, there has been an emphasis on treatment and intervention toward the person with a disability, through the use of behavior management techniques, communication and social skills training, According to our study, autism severity is rather of limited importance for the prediction of individual and marital adaptation. Opposite that, informal support has proved to have an important main or mediating effect on individual and marital adaptation in both the men with ASD and their spouses. Therefore, both during the diagnostic process and during interventions toward adults with ASD and their family, the focus should not solely be laid on the deficits of the individual with ASD. On the level of the diagnosis, attention should also be paid to the assessment of issues related to the broader (social) context of the adult with ASD, for instance, by means of an analysis of the social network (e.g., size, composition, structure, and supportiveness). On the level of treatment, interventions should be geared to the expansion or strengthening of the supportive informal network of families coping with ASD, for instance through the use of psychoeducation toward the social network of the person with ASD, the implementation of person-centered planning methods, etc. Further, since spousal support proved to be a strong and unique predictor of marital adaptation in men with ASD and their spouses, support training for both spouses should be incorporated into existing marital programs. Support training involves that both spouses are taught how to respond effectively when their partner is experiencing individual or interpersonal difficulties and how to best convey their own difficulties so as to solicit effective support from their partner (Cutrona, 1996; Pasch & Bradbury, 1998).

The present study was limited to male parents with ASD and their spouses in order to control for extraneous variability. Future research should elucidate whether our findings are generalizable to couples without children and, as far as such sample can be identified, to couples with the female spouse having ASD. Furthermore, the inclusion of a matched control group of couples without disabilities would enable us to understand the unique difficulties experienced by couples with one spouse with ASD.



**Acknowledgments** This study was funded by the Ghent University Research Fund. We gratefully acknowledge the co-operation of all families who participated in this study. Special thanks goes to our graduate students Filip Maes and Ciska Wittouck for their assistance in collecting the data.

### References

- Arrindell, W. A., & Ettema, J. H. M. (1986). SCL-90. Handleiding bij een multidimensionele psychopathologie-indicator. (Manual for a multidimensional indicator of psychopathology). Lisse: Swets & Zeitlinger.
- Baron-Cohen, S., Wheelwright, S., Skinner, R., Martin, J., & Clubley, E. (2001). The AQ: Evidence from Asperger syndrome/high-functioning autism, males and females, scientists, and mathematicians. *Journal of Autism and Developmental Disorders*, 31, 5–17.
- Barrera M. J. (1981). Social support in the adjustment of pregnant adolescents: Assessment issues. In B. H. Gottlieb (Ed.), *Social networks and social support* (pp. 69–96). Beverly Hills CA: Sage.
- Barrera, M. J., Sandler, I. N., & Ramsey, T. B. (1981). Preliminary development of a scale of social support: Studies on college students. *American Journal of Community Psychology*, 9, 435–447.
- Bristol, M. M. (1984). Family resources and successful adaptation to autistic children. In E. Schopler, & G. Mesibov (Eds.), *The effects of autism on the family* (pp. 289–310). New York: Plenum
- Bristol, M. M. (1987). Mothers of children with autism or communication disorders: Successful adaptation and the double ABCX model. *Journal of Autism and Developmental Disorders*, 17, 469–486.
- Bristol, M. M., Gallagher, J. J., & Schopler, E. (1988). Mothers and fathers of young developmentally disabled and nondisabled boys: Adaptation and spousal support. *Developmental Psychology*, 24, 441–451.
- Bromley, J., Hare, D. J., Davison, K., & Emerson, E. (2004). Mothers supporting children with autism spectrum disorders. Social support, mental health status and satisfaction with services. *Autism*, 8, 409–423.
- Bundy, M. B. (1996). The interrelation of stress, appraisal, coping and adjustment in parents of children with autism. *Dissertation Abstracts International*, 56, 7090.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). Applied multiple regression/correlation analysis for the behavioral sciences. Mahwah: Lawrence Erlbaum Associates.
- Cohen, S., & Hoberman, H. (1983). Positive events and social supports as buffers of life change stress. *Journal of Applied Social Psychology*, *13*, 99–125.
- Coyne, J. C., & Downey, G. (1991). Social factors and psychopathology: stress, social support, and coping processes. *Annual Review of Psychology*, 42, 401–425.
- Cutrona, C. E. (1996). Social support in couples: marriage as a resource in times of stress. Thousand Oaks CA: Sage.
- Cutrona, C. E., & Russell, D. (1987). The provisions of social relationships and adaptation to stress. In W. H. Jones, & D. Perlman (Eds.), *Advances in Personal Relationships*, Vol. I (pp. 37–67). Greenwich: JAI Press.
- Derogatis, L. R. (1977). SCL-90: Administration, scoring and procedures manual-I for the (Revised) Version. Baltimore: Johns Hopkins University School of Medicine, Clinical Psychometrics Research Unit.

- Endler, N. S. (1997). Stress, anxiety and coping: The multidimensional interaction model. *Canadian Psychology*, 38, 136–153.
- Engström, I., Ekström, L., & Emilsson, B. (2003). Psychosocial functioning in a group of Swedish adults with Asperger syndrome or high-functioning autism. *Autism*, 7, 99–110.
- Floyd, F. J., & Gallagher, E. M. (1997). Parental stress, care demands, and use of support services for school-age children with disabilities and behavior problems. *Family Relations*, 46, 359–371.
- Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology*, 54, 466–475.
- Han, H. R. (2003). Korean mothers' psychosocial adjustment to their children's cancer. *Journal of Advanced Nursing*, 44, 499–506.
- Henderson, D., & Vandenberg, B. (1992). Factors influencing adjustment in the families of autistic children. *Psychological* reports, 71, 167–171.
- Herman, S. E., & Thompson, L. (1995). Families perception of their resources for caring for children with developmental disabilities. *Mental retardation*, *33*, 73–83.
- Holland, K. D., & Holahan, C.K. (2003). The relation of social support and coping to positive adaptation to breast cancer. *Psychology and Health*, 18, 15–29.
- Honig, A. S., & Winger, C. J. (1997). A professional support program for families of handicapped preschoolers: decrease in maternal stress. *The Journal of Primary Prevention*, 17, 285–296.
- Howlin, P. (2000). Outcome in adult life for more able individuals with autism or Asperger syndrome. *Autism*, 4, 63–83.
- Howlin, P., Goode, S., Hutton, J., & Rutter, M. (2004). Adult outcome for children with autism. *Journal of Child Psy*chology and Psychiatry, 45, 212–229.
- Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, method and research. *Psychological Bulletin*, 118, 3–34.
- Kazak, A. E. (1986). Stress in families of children with myelomeningocele. *Developmental Medicine and Child Neurol*ogy, 28, 220–228.
- Keller, D., & Honig, A. S. (2004). Maternal and paternal stress in families with school-aged children with disabilities. *American Journal of Orthopsychiatry*, 74, 337–348.
- Kessler R., & McLeod, J. (1985). Social support and psychological distress in community surveys. In S. Cohen & S. Syme (Eds.), Social support and health (pp. 19–40). New York: Academic Press.
- Lavee, Y., McCubbin, H. I., & Patterson, J. M. (1985). The double ABCX model of family stress and adaptation: An empirical test by analysis of structural equations with latent variables. *Journal of Marriage and the Family*, 47, 811–825.
- Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer.
- Lord C., & Venter, A. (1992). Outcome and follow-up studies of high functioning autistic individuals. In E. Schopler, & G. Mesibov (Eds.), High functioning individuals with autism (pp. 187–200). New York: Plenum Press.
- McCubbin, M. A., & McCubbin, H. I. (1993). Family coping with health crisis: the resiliency model of family stress, adjustment and adaptation. In C. Danielson, B. Hamel-Bissell, & P. Winstead-Fry (Eds.), Families, health and illness (pp. 21–63). St. Louis: Mosby.
- McCubbin, H. I., & Patterson, J. M. (1983). The family stress process: The double ABCX model of adjustment and adaptation. In H. I. McCubbin, M. B. Sussman, &



- J. M. Patterson (Eds.), Social stress and the family: Advances and development in family stress theory and research (pp. 7–37). New York: Haworth.
- McCrone, P., Leese, M., Thornicroft, G., Schene, A., Knudsen, H., Vázquez-Barquero, J., Lasalvia, A., Padfield, S., White, I., Griffiths, G., & the Epsilon Study Group (2000). Reliability of the camberwell assessment of need—european version—epsilon study 6. *The British Journal of Psychiatry*, 177, s34–s40.
- Ostberg, M., & Hagekull, B. (2000). A structural modeling approach to the understanding of parenting stress. *Journal of Clinical Child Psychology*, 29, 615–625.
- Pakenham, K. I., Samios, C., & Sofronoff, K. (2005). Adjustment in mothers of children with Asperger syndrome: An application of the double ABCX model of family adjustment. *Autism*, 9, 191–212.
- Pasch, L. A., & Bradbury, T. N. (1998). Social support, conflict, and the development of marital dysfunction. *Journal of Consulting and Clinical Psychology*, 66, 219–230.
- Phelan, M., Slade, M., Thornicroft, G., Dunn, D., Holloway, F., Wykes, T., Strathdee, G., Loftus, L., McCrone, P., & Hayward, P. (1995). The Camberwell assessment of need: The validity and reliability of an instrument to assess the needs of people with severe mental illness. *British Journal of Psychiatry*, 167, 589–595.
- Renty, J., & Roeyers, H. (2006). Quality of life in high-functioning adults with autism spectrum disorder: the predictive

- value of disability and support characteristics. *Autism*, 10, 511–524.
- Russell, D., & Cutrona, C.E. (1991). Social support, stress, and depressive symptoms among the elderly: Test of a process model. *Psychology and Aging*, *6*, 190–201.
- Saloviita, T., Italinna, M., & Leinonen, E. (2003). Explaining the parental stress of fathers and mothers caring for a child with intellectual disability: A Double ABCX Model. *Journal of Intellectual Disability Research*, 47, 300–312.
- Spanier, G. B. (1976). Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. *Journal of Marriage and the Family*, 38, 15–28.
- Tak, Y. R., & McCubbin, M. (2002). Family stress, perceived social support and coping following the diagnosis of a child's congenital heart disease. *Journal of Advanced Nursing*, 39, 190–198.
- Trivette, C. M., & Dunst, C. J. (1992). Characteristics and influences of role division and social support among mothers of preschool-children with disabilities. *Topics in Early Childhood Special Education*, 12, 367–385.
- Weiss, M. J. (2002). Hardiness and social support as predictors of stress in mothers of typical children, children with autism, and children with mental retardation. *Autism*, 6, 115–130.
- White, N., & Hastings, R. P. (2004). Social and professional support for parents of adolescents with severe intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 17, 181–190.

