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Coping Strategies Used by Young People with Autism Spectrum Disorders

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Little is understood about how adolescents with high-functioning autism spectrum disorders attempt to cope with problems. Six males between 13- and 17-years-old with Asperger syndrome or high-functioning autism completed an adapted Adolescent Coping Scale, the Social Skills Rating System, the Personal Wellbeing Index and a semistructured interview about the ways they coped. Parental reports on an adapted Adolescent Coping Scale and the Social Skills Rating System were also collected for four participants. Social skill and subjective wellbeing measures demonstrated a sample characterised by considerable variability between normative and less than normative ranges. Adolescents reported using a range of coping strategies, however they described their coping efforts as often ineffective. Parents also perceived that their sons used several nonproductive coping strategies more frequently. The results support that coping is a relevant area for future research attention with these young people and that the assessment of coping would be useful for targeted intervention practices.

■ **Keywords:** coping, high-functioning autism, Asperger disorder, adolescence

A substantial body of research demonstrates that what an individual does to cope with problems can explain how the effects of stress can be amplified or reduced, which in turn affects both short- and long-term psychological and physical wellbeing (Skinner, Edge, Altman, & Sherwood, 2003). Coping refers to 'thoughts and behaviours used to manage the internal and external demands of situations that are appraised as stressful' (Folkman & Moskowitz, 2004, p. 745). There are many different ways to cope, for example, an individual could avoid the problem, employ problem-solving strategies, think wishfully about how things could be better, seek professional help or find some physical release for emotions, to name only a few. It is important to understand the ways in which one copes, because the use of particular coping strategies can be associated with outcomes such as depression, anxiety symptoms and positive emotional wellbeing, in many different populations including adolescents (e.g., Byrne, 2000; Frydenberg & Lewis, 2009; Reijntjes, Stegge, & Meerum Terwogt, 2006; Seiffge-Krenke & Klessinger, 2000).

Evidence suggests that individuals with high-functioning autism spectrum disorders (ASD) appear to be at greater risk of developing problems such as depression (Stewart et al., 2006) and anxiety (White, Oswald, Ollendick, & Scahill, 2009), and have been found to report lower levels of positive wellbeing (Jennes-Coussens, Magill-Evans, & Koning, 2006). However, very little research has investigated how these young people attempt to cope with the problems they encounter. Autism spectrum disorders (ASD) are a heterogeneous group of developmental disorders including autistic disorder and Asperger disorder (or Asperger syndrome), which are estimated to occur in approximately 1 in 160 individuals (MacDermott et al., 2007). Diagnosis of ASD is based on characteristic patterns of social and communication impairments and the presence of restricted, repetitive or stereotyped behaviours (American Psychiatric Association, 2000). The clinical presentation of persons with ASD ranges greatly, from individuals profoundly affected by autistic symptomatology and with associated intellectual and language disabilities, to those with cognitive and language abilities that fall within average and above ranges, but with a range of social and behavioural differences throughout development compared to the typically developing

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population (Klin, 2009). This latter group are often referred to as presenting at the higher-functioning end of the autism spectrum and includes the diagnosis of Asperger disorder and what is commonly called high-functioning autism.

Adolescents with high-functioning ASD may be an especially important population in terms of coping. Previous research has demonstrated that understanding coping during the adolescent phase is important due to the developmental and social changes that all young people experience during this period of life, and also evidence that patterns of coping behaviours undergo considerable change during this period (Frydenberg & Lewis, 2000). This period has been acknowledged as a particularly difficult developmental phase for young people with ASD due to problems with social relationships and restricted patterns of interests peaking during adolescence and young adulthood (Tantum, 1991). Furthermore, high-functioning adolescents with ASD have been found to be particularly at risk for developing co-morbid internalising and externalising problems, which is thought to be due to increased insight and awareness of their personal difficulties (White et al., 2009).

Consistent with the underlying social developmental deficits associated with ASD, previous research has reported that adolescents with high-functioning ASD cite experiencing problems frequently related to social relationships (Browning, Osborne, & Reed, 2009; Connor, 2000). A small number of studies have asked these young people what they attempt to do to deal with problems. Overall, these studies report that despite adolescents with ASD often being able to list a small number of specific strategies they try to use — such as asking an adult for help, solving the problem by themselves, or talking to a teacher — these young people often report feeling that they are unable to cope (Browning et al., 2009; Connor, 2000).

However, these studies have utilised only qualitative interview data and not standardised instruments such as checklists. Therefore, the full range of coping behaviours used by these young people is unclear at this stage, and it is difficult to make comparisons, both within this group of adolescents and also between this group and other adolescent samples. In addition, while previous research appears to suggest this group of young people may experience difficulty coping, a significant proportion of these adolescents do not develop psychopathology. It is possible that the variation in outcomes may be related to coping strategy use and therefore we need to understand what characteristics are associated with perceptions of better coping for these young people. Increasingly, research is seeking the views of these adolescents on a wide range of topics (e.g., Bellini, 2006; Cederlund, Hagberg, & Gillberg, 2010). This methodology opens up opportunities to explore in greater detail the coping experiences of young people with high-functioning ASD. Additionally, there is some concern that while adolescents find some coping strategies unhelpful, such as worry and self-blame, they continue to use them (Lewis & Frydenberg, 2004).

The purpose of the study was to explore the coping strategies used by adolescents with high-functioning ASD, the perceived effectiveness of their coping efforts, and what, if any, differences are evident between how these adolescents and their parents perceived their coping abilities.

Method

PARTICIPANTS

The participants were six male adolescents aged between 13 and 17 years (M = 16.13 years, SD = 1.67 years). All participants' parents confirmed prior independent diagnoses of Asperger syndrome (n = 3), autism (high-functioning) (n = 2), or autism spectrum disorder (n = 1). One participant reported a co-morbid diagnosis of attention deficit hyperactivity disorder. All participants attended mainstream schools. The educational ability of four participants was rated by their parents as 'higher than average', one participant was rated as 'below average', and one participant's parent voluntarily specified 'higher than average' for reading and 'below average' for writing.

Participants were recruited from ASD support organisations in the Melbourne area via a research database. Invitations were distributed by one of the researchers at a support group and invitations were placed in newsletters and websites of the support organisations. Additionally, one developmental paediatrician and four psychologists distributed invitations to their clients. All participants were provided with a movie pass.

MEASURES

Coping

Quantitative. Coping strategies were measured using an adapted Adolescent Coping Scale (Long Form) (Frydenberg & Lewis, 1993b) for which there was a self-report version and a parent-report version. The parent-report version was identical to the self-report version except that wording had been changed to reflect a parent's perception of their son's coping. The Adolescent Coping Scale (ACS) was designed for use with young people between the ages of 12 and 18 years. Participants were asked to respond based on their coping specifically with problems and concerns with relationships with friends, family, teachers and other people. The ACS required respondents to rate on a 5-point Likert scale (ranging from 1 = *Doesn't apply or don't do it*, to 5 = *Used a great deal*) to a series of statements reflecting coping behaviours, and were then asked how helpful they believed that way of coping was on a second 5-point Likert scale (ranging from 1 = *Not helpful*, to 5 = *Always helpful*).

The adapted ACS used in this study contained two extra items to reflect behaviours that may also be relevant to an ASD population (Baron, Lipsitt, & Goodwin, 2006). These items were, 'Spend time doing my special interest' and 'Act

out, yell, scream, get out of control, or hurt myself'. The open-ended question from the original version of the ACS was omitted as it overlapped with the qualitative data collected elsewhere in the project. Consequently, the ACS used in the current study contained 81 items.

Evidence of high reliability and validity of the ACS has been reported elsewhere (Frydenberg & Lewis, 1993b) and factor analysis of the items on the original ACS reflected 18 distinct coping strategies (Frydenberg & Lewis, 1993b; Frydenberg & Lewis, 1996).

Qualitative. Two methods of qualitative data collection were used. Participants were asked to write written responses to the following open-ended questions: (a) What problems do you feel you have with relationships with other people, such as friends, parents, teachers, and other people of your age? (b) How do you deal with these problems? How do you cope? (c) How well do you think you are able to cope with these problems? Do you feel like you are able to fix the problem, or that it may return? (d) Is there anything else you would like to add?

The written responses were supplemented with information collected via semistructured telephone interviews, which were based around the following questions: (a) Can you tell me of a problem you've experienced lately that involved another person? (b) What did you do after that? (c) What sorts of things do you do to fix those sorts of problems? (d) How well do these sorts of things work for you? (e) What sorts of things do you do to make yourself feel better after those sorts of problems? (f) How well do these sorts of things work for you? (g) What would you like other people to do to help you or to understand about how you deal with these sorts of problems? Interviews were based on these questions in order to obtain parallel information collected via written responses, enabling the data from the two sources to be collapsed prior to analysis.

Social Skills

Social skill ability ratings were collected from adolescents and from their parents using the Secondary Level Student Form of the Social Skills Rating System (SSRS; Gresham & Elliott, 1990). Although a parent-report version of the SSRS is available (Gresham & Elliot, 1990), the scales that are measured differ slightly from the student form. Therefore, the student form was used in order to compare directly the differences between identical scales between the adolescents and their parents.

The SSRS is a 39-item standardised, norm-referenced assessment of the perceived frequency and importance of social behaviours within the scales of Cooperation, Assertion, Empathy and Self-Control. The Secondary Level Student Form is suitable for use with individuals ranging in age from 13 to 18 years. Participants were asked to rate how often certain behaviours occurred on a 3-point Likert scale (ranging from 0 = *Never* to 2 = *Very often*).

Reliability and validity has been demonstrated to be acceptable and are reported elsewhere (Gresham & Elliott, 1990). The Student Form of the SSRS has previously been used in research with adolescent populations with ASD (Bellini, 2006; Koning & Magill-Evans, 2001).

Wellbeing

Subjective wellbeing was assessed using the Personal Wellbeing Index (School Children, 3rd ed.; PWI-SC; Cummins & Lau, 2005). The PWI-SC was designed for use with children and adolescents and contains a total of eight items, seven of which are averaged to form an index referred to as the Personal Wellbeing Index (PWI).

Extensive psychometric data has been published for the PWI (Cummins et al., 2003). The PWI and earlier versions of the instrument have been used in research with a range of populations including children and adolescents (e.g., Gullone & Cummins, 1999; Marriage & Cummins, 2004).

PROCEDURE

Following ethics approval from the University of Melbourne's Human Research Ethics Committee, participants and their parents were posted questionnaire batteries, which they returned in reply-paid envelopes. Parents who consented to a follow-up telephone interview with their son nominated a suitable time. Verbal consent was obtained from adolescents themselves preceding this interview. The approximate duration of the interview was 10 minutes.

Results

Quantitative results were analysed using the Statistical Package for Social Sciences (SPSS) version 17.0 for Windows. Prior to analysis, responses to questionnaires were screened for missing values. The ACS for four participants each contained one incomplete item and the SSRS for two participants each contained one incomplete item. These missing items were replaced with the mean for that scale for each participant. Quantitative data for the sample is described by mean scores.

Table 1 summarises participants' demographic information and responses to the PWI-SC and SSRS. It is seen in Table 1 that this sample of adolescents are generally characterised by reports of wellbeing and social skills ranging from the average to below average range. It is also evident that this sample displays considerable variability on these measures.

Quantitative Adolescent Self-Report and Parent-Report of Coping Strategies and Effectiveness

The 81 items that constituted the quantitative coping data collected by the ACS were used to compute frequency of use and effectiveness of the 18 coping strategies as well as the two additional ways of coping. Table 2 presents the means and standard deviations for the 20 ways of coping identified in the adolescent self-reports. Frequency of use and effectiveness were rated by participants, as previously

TABLE 1

Participant Characteristics

	M (SD)	Range
Age (*n* = 6)	16 years (20 months)	13.4–17.4
SSRS, self-rating (*n* = 6)		
Cooperation	13.33 (2.94)[a]	10–17
Assertion	8.17 (3.43)[b]	3–12
Empathy	12.00 (2.53)[a]	8–14
Self-Control	11.67 (1.63)[a]	10–14
SSRS, parent (*n* = 4)		
Cooperation	13.00 (3.46)[a]	10–16
Assertion	6.25 (4.65)[b]	2–12
Empathy	9.50 (4.04)[b]	6–15
Self-Control	10.50 (1.73)[a]	9–13
PWI (*n* = 6)		
Personal Wellbeing Index	64.28 (19.97)	24.29–75.71

Note: SSRS = Social Skills Rating System; PWI = Personal Wellbeing Index.

PWI scores have been reported to fall within a normative range of 70 to 80 (Cummins & Lau, 2005).

[a] Scores fall within the average range as reported in the SSRS manual (Gresham & Elliott, 1990).

[b] Scores fall within the fewer than average range as reported in the SSRS manual (Gresham & Elliott, 1990).

TABLE 2

Means and Standard Deviations for Self-Reported Coping Strategies

Coping strategy	Number of Items	Self-report	
		Frequency	Effectiveness
Spend time doing my special interest	1	3.67 (1.51)	3.00 (1.41)
Seek relaxing diversions	3	3.39 (1.24)	3.06 (1.00)
Work hard and achieve	5	3.27 (.41)	3.63 (.64)
Focus on solving the problem	5	3.23 (.92)	3.17 (.98)
Keep to self	4	2.88 (.92)	2.42 (.68)
Seek to belong	5	2.83 (.96)	2.37 (.66)
Wishful thinking	5	2.83 (.81)	2.27 (.67)
Focus on the positive	4	2.75 (.76)	2.92 (.63)
Self-blame	4	2.75 (1.37)	1.88 (.85)
Ignore	4	2.63 (.88)	2.17 (.70)
Seek social support	5	2.5 (.64)	2.80 (.77)
Worry	5	2.42 (1.03)	1.73 (.71)
Invest in close friends	5	2.30 (1.11)	2.57 (1.19)
Physical recreation	3	2.00 (.37)	2.28 (.88)
Not coping	5	2.00 (.52)	1.63 (.64)
Seek professional help	4	2.00 (1.13)	2.17 (1.07)
Tension reduction	5	1.83 (.59)	2.07 (1.14)
Act out, yell, scream, get out of control, or hurt myself	1	1.83 (.75)	1.33 (.52)
Social action	4	1.38 (.52)	1.71 (.84)
Seek spiritual support	4	1.38 (.63)	1.58 (1.10)

described, such that it is evident in Table 2 the strategies that were reported to be most frequently used (those with greater frequency values) and those considered most effective (those with greater effectiveness values).

It can be seen in Table 2 that the most frequently used strategies (with mean ratings greater than 3, corresponding to at least *Used sometimes*) are *Spend time doing my special interest, Seek relaxing diversions, Work hard and achieve*, and *Focus on solving the problem*. It can also be seen that these strategies were rated as most effective (with mean ratings greater than 3, corresponding to at least *Sometimes helpful*). Also evident in Table 2 are the strategies used least frequently (with mean ratings less than 2, corresponding to less than *Used a little*) which are *Tension reduction; Act out, yell, scream, get out of control, or hurt myself; Social action* and *Seek spiritual support*. It is clear, however, that these and several other strategies listed in Table 2 received mean effectiveness ratings of less than 2 (corresponding to less than *A little helpful*), suggesting many strategies were perceived as low on effectiveness. The relatively large standard deviations displayed in Table 2 also indicate that many strategies showed considerable variation in frequency of use and effectiveness for this sample.

Figure 1 presents the frequency of use for the 20 coping strategies for adolescent self-report, parent-report and also for a sample of Australian 11- to 18-year-old males reported by Frydenberg and Lewis (1999). Differences between self-report, parent-report and between the current study's sample and a general male adolescent sample are evident in Figure 1.

It can be seen in Figure 1 that some strategies are perceived to be used with similar frequency according to either self- or parent-report; for example, *Focus on solving the problem, Seek relaxing diversions, Seek to belong,* and *Invest in close friends*. Conversely, some strategies are perceived to be used at relatively differing frequencies according to either self- or parent-report, for example *Wishful thinking; Not coping; Act out, yell, scream, get out of control, or hurt myself;* and *Spend time doing my special interest*.

It is also evident in Figure 1 that comparisons of adolescent self-report with data collected by Frydenberg and Lewis (1999) for a general adolescent male group indicates most strategies appeared to be rated with similar frequencies between the two groups, although ratings of *Physical recreation, Not coping, Invest in close friends*, and *Seek social support* show relatively greater discrepancies.

Qualitative Adolescent Self-Reported Social Problems, Coping Strategies and Effectiveness

Qualitative data collected via telephone interviews were audio recorded and transcribed verbatim. All qualitative responses were analysed using content analysis (Browning et al., 2009; Fredrickson, Osborne, & Reed, 2004; Vaughn, Schumm, & Sinagub, 1996). Following Vaughn et al. (1996), participants' statements to the open-ended written questions and transcripts from the phone interviews were broken down into the smallest relevant units of information and were then sorted into thematic organisational categories for each research question. A second rater reclassified these units with over 98% agreement to ensure

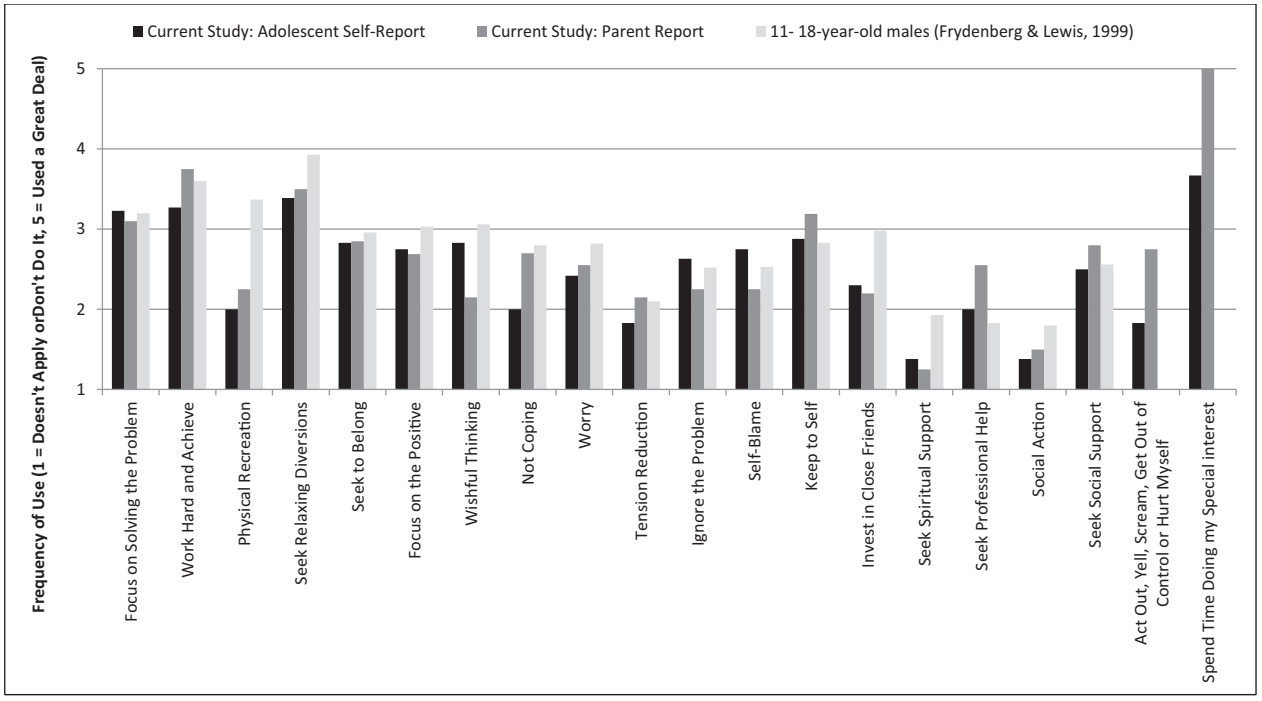

FIGURE 1

Adolescent Coping scale mean ratings for frequency of use for the current study adolescent self-report and parent-report, and for a sample of 11- to 18-year-old males reported by Frydenberg and Lewis (1999).

interrater reliability. Tables 3 and 4 present the percentages of responses related to the ways participants attempted to cope and how effective coping attempts were believed to be respectively.

Discussion

On average, this sample's subjective wellbeing and self- and parent-reported social skill means fell in the range between normative to below normative ranges. These findings were consistent with previous research using the same and similar measures with young people with high-functioning ASD (Jennes-Coussens et al., 2006, Koning & Magill-Evans, 2001).

Although subject to the limitations of a small and considerably variable sample, the results suggest trends in the way this group of young people are coping. The great amount of variation evident in the data would not be unexpected as it is likely to reflect the large amount of variation in abilities, interests and functioning that exists in adolescents with high-functioning ASD (Klin, 2009). It is expected that the trends evident in the current study would be replicable with a larger sample.

According to the quantitative results, the strategies rated as most often used by adolescents were; *Spend time doing my special interest, Seek relaxing diversions, Work hard and achieve* and *Focus on solving the problem*. Qualitative results revealed that *Focus on solving the problem* and *Ignoring, avoiding, or*

TABLE 3

Proportions of Participants' Responses Falling Into Different Categories for the Different Ways They Tried To Cope

Category	Percentage of responses	Number of participants	Illustrative comments
Ignore, avoid or accept the problem	33%	4	'I try and ignore it.' 'I just accept that it's happening'
Active problem-solving	33%	4	'Leave for a while allowing me to calm down.' 'I try and think of it from their point of view, try and see what they're thinking.'
Look at the positives	17%	2	'I try and think that nothing bad can really go wrong.' 'Try to stay positive.'
Act out	11%	2	'Get angry and cry or break something.' 'I argue back to Mum.'
Seek assistance from others	6%	1	'Sometimes I ask the teacher.'

TABLE 4

Proportions of Participants' Responses Falling Into Different Categories for How Effectively They Believed They Coped

Category	Percentage of responses	Number of participants	Illustrative comments
Strategy used was effective	40%	4	'I guess it does make me feel better, but not to the point of a huge improvement, just a bit better.'
			'It usually helps me, gives me a bit of a confidence boost.'
			'It usually helps more in the long term, or next time.'
Strategy used was ineffective	60%	5	'I cope 3 out of 10, not very well.'
			'You know, just ignoring the problem doesn't really make me feel better' '(sorting my own problems out goes) pretty poorly.'

accepting the problem were also perceived to be commonly used. These differences evident in how adolescents reported coping according to quantitative or qualitative results highlight an advantage of having used a mixed methodology. That is, participant responses were not unnecessarily limited by only allowing responses listed on the questionnaire, or conversely only relying on participants to recall the strategies they used to cope.

The finding that strategies such as *Problem-solving, Work hard and achieve*, and *Relaxing*, are reported to be used is encouraging as robust associations have been demonstrated between these types of strategies and wellbeing outcomes (Reijntjes et al., 2006; Seiffge-Krenke & Klessinger, 2000). The inclusion of *Spend time doing my special interest* was an addition to the ACS for this study. This item relates to the circumscribed interests that are common among individuals with high-functioning ASD and opinions are mixed as to whether these interests constitute adaptive or nonadaptive behaviour (Attwood, 2008). Therefore, the use of interests as a coping strategy among this group of young people requires further research.

The relatively frequent use of ignoring, avoiding or accepting a problem should be seen as concerning, as these ways to cope are generally not found to be associated with positive outcomes (Frydenberg & Lewis, 2009; Reijntjes et al., 2006; Seiffge-Krenke & Klessinger, 2000). One possibility to explain why participants often reported these strategies might be related to the types of problems that participants were thinking of when describing how they coped. Previous research has demonstrated that adolescents were more likely to use avoidance-type strategies for stressors judged to be uncontrollable (Ebata & Moos, 1991). It may be that, due to underlying social deficits in ASD, some participants judge some social problems to be uncontrollable. This would suggest directions for future research as well as considerations for intervention programs.

Although considerable variability in the sample highlights that these young people with high-functioning ASD vary greatly in what concerns them and how they cope, as a group, this sample appeared to generally use relatively similar coping strategies compared to other Australian adolescent males. However, it also appeared that the group's results displayed trends in some areas indicating possible differences between this group of young people and other groups of young people.

In comparison to previously published results concerning how other Australian adolescent male samples report coping, two marked differences were evident. Previous research has indicated that, for adolescent boys, physical recreation is often one of the most frequently used coping strategies (Frydenberg & Lewis, 1993a). Our results indicated that participants consistently reported infrequent use of this strategy. It is possible that issues with motor development, which occur more frequently for individuals with ASD (Lang et al., 2010), contribute to less participation in physical activities and hence these activities are used less to cope. Similarly, the social demands of participating in organised sports through childhood and adolescence may also limit the use of physical recreation as a coping strategy. Second, within the results of the ACS the participants consistently rated the scale of Not Coping (an index of perceived helplessness) less than other samples of Australian adolescent males (Frydenberg & Lewis, 1999). This was not consistent with the qualitative response to the question 'How do you feel you cope?' where five of the six participants responded that they felt they coped ineffectively. It appears that the scale 'Not Coping' within the ACS does not accurately assess an inability to cope in this population

Although participants reported a range of coping strategies, including many considered helpful and associated with positive outcomes, when asked how effective their coping efforts were, strategies were rated on average as *Not helpful*, *A little helpful* or *Sometimes helpful*. No strategy received an average rating of *Usually helpful* or *Always helpful*. This result was supported by qualitative results, which demonstrated most participants rated their coping ability as ineffective. Previous research by Lewis and Frydenberg (2004) indicates that young people generally rate productive strategies as helpful and nonproductive ones as not helpful. Nevertheless, some young people still use nonproductive strategies such as self-blame and ignoring problems. What was worrying about our results was the low ratings of effectiveness, even for strategies that would generally be considered productive and helpful. Overall, this result is concerning and strongly suggests that intervention pro-

grams aimed at increasing coping among this group of young people need to have a evaluative component, as reporting the use an appropriate strategy alone is not enough to ensure effective use. Furthermore, more research is needed to understand why these young people are not using coping strategies effectively, and what can be done to increase effectiveness

Finally, inspection of the differences between adolescents' and their parents' perceptions of the young person's coping abilities demonstrated that parents perceived more frequent use of strategies such as *Not cope*; *Worry*; and *Act out, yell, scream, get out of control or hurt myself*. There is an implication that parents perceive their sons as coping less effectively than is implied by self-reports.

In conclusion, this study has described the coping strategies used by this sample of male adolescents with high-functioning ASD as characterised by a range of different strategies, but which are often perceived to be used ineffectively. Clinical practice would benefit from the investigation of coping strategies using both qualitative and quantitative methods of data collection to plan individualised intervention programs. Further research is warranted to understand why coping is often believed to be ineffective and how to most effectively help those who feel they are not coping well.

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