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Anxiety, depression, and peer relationships during adolescence: Results from the Portuguese national health behaviour in school-aged children survey

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Used data from the Portuguese HBSC (Health Behaviour in School-Aged Children) survey, which was conducted by one of the authors who is the national representative of the European Study HBSC, a World Health Organisation collaborative study (Currie, Hurrelmann, Setterbulte, Smith, & Todd, 2000; Matos, Simões, Carvalhosa, Reis & Canha 2000), to examine correlates of depression and anxiety in a large, representative sample of adolescents. The study had four aims: (1) to examine the relationship between feelings of anxiety and depression; (2) to examine the association of positive peer relationships, and anxiety and depression in school-age adolescents; (3) to examine the relationship between health, peer relationships, depression and anxiety; and finally, (4) to assess age and gender differences with regard to the above issues. Measures were constructed of depression, anxiety, peer relationships, and health. Consistent with previous studies, anxiety and depression were found to be significantly correlated. A MANOVA revealed that females and adolescents in grades 8 and 10 were more likely to report high anxiety and/or depressive symptoms. High anxiety and depression in adolescence was associated with poor peer relationships and poorer health. Implications of these results and directions for further research are discussed.

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Introduction

It is widely accepted that there are high levels of comorbidity between symptoms of anxiety and depression (Kovacs & Devlin, 1998). Children with comorbid anxiety and depression tend to demonstrate greater social and cognitive impairment than children with anxiety or depressive disorders alone (McGee, Feehan, Williams, & Anderson, 1992), and are more likely to utilise mental health services frequently (Fergusson, Horwood, & Lynskey, 1993).

Eley and Stevenson (1999a) outlined the four etiological models accounting for comorbid anxiety and depression as follows: "(a) that the two share etiological factors; (b) that the comorbid syndrome has a specific risk factor; (c) that the two syndromes are temporarily associated with one another, such that one condition is a developmental variation of the other; and (d) that the two disorders are distinct entities, with one creating increased risk for the other" (p. 105). Cole, Peeke, Martin, Truglio, and Seroczynski (1998) conducted a longitudinal study of 330 primary school students over a 3-year period. Every six months children and parents completed depression and anxiety questionnaires. Cole et al. (1998) found that high levels of anxiety symptoms at Time 1 predicted high levels of depressive symptoms at subsequent points in time, even after controlling for prior levels of depression. The authors took this as evidence for the temporal hypothesis that anxiety leads to depression. In their review, Kovacs and Devlin (1998) concluded that anxiety problems are more likely to emerge in early childhood and preceed the onset of depressive disorders. It therefore becomes important to identify any shared etiological factors, risk factors specific to either disorder, as well as potential mediating mechanisms whereby one disorder creates a risk for the other. To this end, researchers have attempted to study the course over developmental stages as well as the role of gender differences in the expression of both anxiety and depression.

Literature review

Research examining the expression of anxiety and depression across developmental stages and genders has produced somewhat mixed findings. This may be due to qualitative differences between samples (clinical versus community), age categories (preadolescent versus adolescent) and inconsistent measurement criteria. In a sample 8 to 12 year-old school children, Spence (1998) found younger children reported higher levels of anxiety with females displaying higher anxiety than males across all ages. Similarly, studies by McGee et al. (1992) and Essau, Conradt, and Petermann (2000) using community samples have found that females have higher rates of anxiety disorders than males.

Developmental and gender differences have also been found for depressive symptoms. In the Oregon Adolescent Depression Project, Lewinsohn, Rohde, and Seeley (1998) found that females were twice as likely as males to be depressed between the ages of 14 and 18 years. In a community sample of young adults, Oldehinkel, Wittchen, and Schuster (1999) found only a rare onset of depressive disorders before age 13, with females twice as likely to develop the disorder. Schraedly, Gotlib, and Hayward (1999), in a sample of 6943 adolescents, found depressive symptoms increased with age and were more common in females yet, consistent with Lewinsohn et al.'s (1998) results, they found no interaction between gender and age. In addition, they found stress and social support to be significantly related to depression among girls. In a sample of 12 to 16 year-old in-patients, Joiner, Blalock, and Wagner (1999) found no significant gender differences in symptoms of either anxiety and depression yet they found higher incidence of comorbidity in adolescent females. This was consistent with past research finding adolescent girls to be more likely to experience low and moderate levels of depression and anxiety than adolescent boys (Ohannessian, Lerner, Lerner, & von Eye, 1996).

Overall, it appears that depressive symptoms emerge more strongly in adolescence and that females are more likely to experience symptoms of depression and anxiety compared to

males. The research also suggests that comorbidity between anxiety and depression will be stronger in females across all developmental stages yet may show a more variable pattern for males. The question these data raise is: what are the factors influencing the differential expression of anxiety and depression across ages and genders?

Both genetic and environmental influences have been linked to the onset and maintenance of anxiety and depression (Eley & Stevenson, 1999a,b). In a sample of 395 same-sex twin pairs aged 8 to 16 years, genetic influences accounted for the most of the relationship between anxiety and depression, whereas environmental influences predicted specific symptoms of each disorder: nonshared environmental factors (i.e., events not common to both twins) most strongly predicting depression and shared factors more strongly leading to anxiety. While these studies contribute to our understanding of the etiology of anxiety and depression and the relationship between the two disorders, one must also seek to identify both risk and protective environmental forces (such as family and peers) which may be more amenable to intervention thereby counteracting genetic predispositions.

In line with this temporal hypothesis, Eley and Stevenson (1999b) propose that a failure to develop social and academic competencies (including perceptions of such competencies) in children with anxiety, may act as a mediating mechanism in the development of later depression. A number of studies have documented links between negative peer relationships (e.g., peer rejection) and feelings of depression (Kupersmidt & Patterson, 1991; Boivin, Poulin, & Vitaro, 1994; Boivin, Hymel, & Bukowski, 1995). However, in a longitudinal investigation of teacher-rated peer relationship problems Woodward and Fergusson (1999) found early peer relationship problems at age nine to be poor predictors of anxiety or depression. They highlighted two potential explanations for this finding: early peer relationship problems may result in internalising behaviour problems which naturally diminish to non-significant levels over time or their focus on clinical rates of disorders obscured more generalised symptomatology. In addition, it may be the child's *perception* of peer problems, as opposed to teacher ratings, that may be more important.

Studies have found that adolescents and young adults who are dissatisfied with their social support networks tend to suffer from depressive or psychosomatic symptoms, anxiety, and interpersonal sensitivity, Herman-Stahl and Peterson (1996) found that asymptomatic children reported more positive relationships with parents and peers and that this link was maintained at one-year follow-up. Harter and Whitesell (1996) found children and adolescents reporting depressive reactions also perceived deficiencies in their social relationships with both parents and peers while the opposite held true for well-adjusted participants.

According to Wentzel and McNamara (1999), social interactions with families and peers result in beliefs about the supportive nature of these interpersonal relationships, which then affect emotional well-being and competent behaviour toward others in the future. Rudolph, Hammen, and Burge (1997) found differential relationships between children's beliefs about peer relationships and anxiety/depression. Specifically, anxiety was related to poor social self-competence whereas depression was related to low perceived social self-worth. However, these authors also found anxiety symptoms provided only a negligible contribution over and above depression to children's peer-related beliefs. Ohannessian, Lerner, Lerner, and von Eye (1996) examined the utility of self-competence (a broad variable which incorporated the concept of social competence) as a potential mediating variable relating to gender differences in anxious and depressive symptoms. They found higher levels of self-competence to be significantly related to lower levels of both depression and anxiety. After controlling for self-competence, the relationship between gender and anxiety weakened while the relationship between gender and depression became non-significant.

Gender and age differences in the influence of peer relationships on psychopathology have also been reported. Rudolph and Hammen (1999) found adolescent girls experienced greater levels of interpersonal stress and conflict within parent and peer relationships. It may be, therefore, that peer relationships play a more important role for girls as opposed to boys. In addition, Fordham and Stevenson-Hinde (1999) examined the relationship between shyness, friendship quality, and internalising problems in a sample of 50 eight to ten-year old children.

They found significant relationships in older children between global self-worth, internalising problems, and social acceptance and friendship quality. Thus, while longitudinal research incorporating larger samples with adolescents are necessary, the conclusion may be drawn that peer relationships are more important for older children and adolescents. As Rudolph, Hammen, and Burge (1997) suggest, depressed youngsters individuating from their families may actively seek supportive peer relationships.

Research examining the role of peer relationships in anxiety and depression has primarily focused upon risk factors while relatively little attention has been paid to the protective nature of peers. While it seems that supportive peer relationships may help to buffer depressive symptoms, especially in girls, research thus far is inconsistent on this issue. In addition, the role of peers and symptoms of anxiety has not been examined in great detail. Considering the developmental chronology of anxious and depressive symptoms, one possible hypothesis may be that the development of anxiety at younger ages prevents the development of supportive peer relationships as children get older, thereby resulting in fewer resources in coping with depressive symptoms.

Some interesting research has been conducted to examine the relationship between health and depression. Previous research with adults has demonstrated a relationship between depression and physical health. For example, depression is associated with reduced survival rates for coronary artery disease (Barefoot, Helms, Mark, Blumenthal, Callif, Haney, O'Connor, Siegler, Williams, 1996) and myocardial infarction (Frasure-Smith, Lesperance, Juneau, Talajic, & Bourassa, 1999). Similarly, studies of children and adolescents show that children reporting recurrent stomach aches also report higher anxiety and depressive symptoms (Rauste-von Wright & vonWright, 1981; Raymer, Weininger & Hamilton, 1984; Walker & Greene, 1989). Studies using clinical samples of children with anxiety and depressive disorders suggest that these children report higher rates of stomach aches and other somatic symptoms (Beidel, Christ, & Long, 1991; Livingston, Taylor, & Crawford, 1988). Three epidemiological studies have reported an association between headaches and psychopathology. Pine, Cohen, and Brook (1996) described an association between headaches and depression in both boys and girls. In contrast, studies by Egger and colleagues (Egger, Angold, & Costello, 1998; Egger, Costello, Erkanli, & Angold, 1999) found gender specific patterns of association between somatic complaints and psychopathology. Specifically, they found an association of headaches with anxiety disorders and depression in girls, and with conduct disorder in boys.

The purpose of the current study was to contribute to our understanding of the phenomenology of anxiety and depression by reporting on a community-based sample of children and adolescents in Portugal. This study aimed to: (1) examine the relationship between reported perception of anxiety and depression; (2) examine the association of positive peer relationships, and anxiety and depression in school-age adolescents; (3) examine the relationship between health, peer relationships, depression and anxiety; and finally, (4) to assess age and gender differences with regard to the above issues.

Method

Participants

The Portuguese survey reported in this study is a component of the Health Behaviour in School-Aged Children (HBSC) study, a cross sectional international, WHO collaborative study (Currie, Hurrelmann, Setterbulte, Smith, & Todd, 2000; Matos, Simões, Carvalhosa, Reis, & Canha 2000). The Portuguese national sample consisted of 6903 high school students aged 10 to 17 years (M=14.1 years, SD=1.71years). From these 6903 pupils, 53% were girls and 47% boys. In terms of grade levels, 34.9% attended the 6th year of high school, 37.5% were in their 8th year and 27.6% were in the 10th year of high school.

The sampling unit used in this survey was the class. The 191 schools in the sample were randomly selected from the official national list of public schools, stratified by region, in order

to have 2500 students in each grade, after selecting 2 classes in different grades, in each school. Response rate was 92%. There were five Educational Regional Divisions and pupils came from schools in the following regions: North (39.7%), Centre (24.7%), Lisbon (25%), Alentejo (6.2%) and Algarve (4.4%). In each school, classes were randomly selected in order to meet the required number of students for each grade, proportional to the number of same-grade mates for each specific region. This is a national representative sample of adolescents attending 6th, 8th and 10th grade, within the public school system. Private schools were not included.

Procedure

Questionnaires were administered in March 1998. The questionnaires required 55 minutes to complete and were administered in the classroom by teachers. Pupils completed the questionnaires on their own. Teachers were given a set of standardized instructions and they should not answer any questions concerning the content of the questionnaire, or look to pupils' answers. Pupil's participation in the survey was voluntary and anonymity was assured. Pupils were asked to put their completed questionnaires in an envelope and the last pupil was requested to seal the envelope. The process of distribution and collection of questionnaires in the entire country was assured by medical doctors, regional coordinators of PEPT/Saúde 2000 (Program of Education for All/Health, extinguished in 2000).

Materials

Table 1

Variables derived from the Portuguese HBSC 1998 survey

Variable	Items	Range	Alpha	Pearson *r*
Depression	c46 Feeling depressed c42 Feeling lonely	2-10 2 questions rated 1 to 5 (High=Depressive Symptoms)	.62	.46 $p<.001$
Anxiety	c48 Nervousness c47 Irritable	2-10 2 questions rated 1 to5 (High=Anxiety Symptoms)	.59	.43 $p<.001$
Health	c40 Reported health c41 Quality of life c43 Headaches c44 Stomach pains c45 Back Pain	5-25 5 questions rated 1 to 5 (High=Good Health)	.52	
Peer Relationships	c70 Ease talking to same sex friends c71 Ease talking to opposite sex friends c72 Having close friends (item not reversed) c74 Time with friends after school c73 Ease making friends c79 Left out of things (ostracised) c80 Feeling left alone at school f10 Enjoy being with other people f11 Colleagues/friends are kind and helpful f12 Colleagues/friends accept me as I am	10-50 10 questions rated 1 to 5 (High=Positive relationship)	.68	

The questionnaire consisted of two parts. The main HBSC survey included questions on demographics (age, gender, sociodemographics), school related variables, tobacco and alcohol use, physical activity and leisure, nutrition, safety aspects of psychosocial health, general health symptoms, social relations and social support.

For the purposes of the present study, we were interested in creating measures on two dimensions of adolescent psychosocial adjustment (Depression, Anxiety), and measures of

peer relationship functioning and health. To do this, individual items that had face validity for each construct were grouped and submitted to analyses of internal consistency using alpha statistics. For the purposes of this study, anxiety and depression were kept separate. The final measures are shown in Table 1. Final alphas were all in the acceptable range. Pearson correlations were reported when measures were constructed by adding two items; they were significant both for depression and for anxiety. In order to obtain categories of peer relationship functioning (low and high) and health (better or poorer health), median splits were used to transform the peer and health variables into categories.

A complete picture of previous uses of those items and their psychometric properties can be found in the international study report (Currie et al., 2000).

Results

The effect of gender, age and peer relationships on psychosocial functioning

A 2x3x2x2 MANOVA was used to examine the effect of gender, age (Grade 6/8/10), peer relationships (low positive/ high positive) and health (poorer/better health) on adolescent psychosocial functioning. Median splits were used to transform the peer and health variables into categories. A MANOVA was chosen because the dependent variables of depression and anxiety were correlated (r=.49, p<.01) Significant main effect were found as followed:

A significant main effect was found for gender, $F(2,61)=14.32$, $p<.001$, $\eta^2=.005$. Follow up univariate analysis showed a significant mean difference ($p<.05$) between boys and girls, both for depression and for anxiety, with girls more depressive and anxious (mean score for depression for boys was 4.14, and for girls 4.38; mean score for anxiety for boys was 4.32 and for girls 4.43).

A significant main effect was also found for age, $F(34,12)=61.24$, $p<.001$, $\eta^2=.02$. Post Hoc tests (Tukey's, $p<.05$) indicated a significant difference between all grades, either for depression or for anxiety, with pupils being both significantly more depressed and anxious in more advanced grades (mean scores for depression were 3.65 for 6th grade, 4.25 for the 8th grade and 4.74 for the 10th grade; mean scores for anxiety were 3.85 for the 6th grade, 4.04 for the 8th grade and 4.72 for the 10th grade).

A significant main effect was found for peer relationships, $F(2,607)=174.54$, $p<.001$, $\eta^2=.054$. Follow-up univariate analysis indicated a significant mean difference ($p<.05$) between pupils low and high on positive peer relationships, either for depression or for anxiety, with pupils being both significantly more depressed and anxious if they were low on peer relationships (mean scores for depression concerning pupils low on peer relationships was 4.68, and concerning pupils high on peer relationships was 3.84; mean scores for anxiety concerning pupils low on peer relationships was 4.61, and concerning pupils high on peer relationships was 4.13).

Finally a significant main effect was found for health, $F(2,607)=488.50$, $p<.001$, $\eta^2=.139$. Follow-up univariate analysis indicated a significant mean difference ($p<.05$) between pupils with poorer and better health, either for depression or for anxiety, with pupils being both significantly more depressed and anxious if they had a lower health (mean score for depression concerning pupils with lower health was 4.82, and concerning pupils with better health was 3.70; mean score for anxiety concerning pupils with lower health was 5.12, and concerning pupils with better health was 3.63).

Follow-up testing to investigate the gender x age interactions revealed that boys and girls in grade 6th reported comparable levels of anxiety, $t(2307)=-1.065$, $p=.287$ (mean for boys was 3.82 and for girls 3.91) whereas gender differences were clearly evident in grades 8th and 10th, with girls reporting significantly more anxiety (mean for girls were 4.69 in 8th grade and 5.00 in 10th grade, and for boys were 4.12 in 8th grade and 4.33 in 10th grade). In contrast, gender differences for depression were evident across grades, with girls in Grades 6th, 8th and

10th reporting significantly more depressive symptoms than boys of the same age (mean for girls were respectively 4.79, 5.57 and 6.03 and mean for boys were respectively 4.56, 4.96 and 5.27 in 6th, 8th and 10th grades).

Peer relationships and health: Associations with anxiety, depression, and comorbidity

The sample was categorised into three groups: depression (n=940) – adolescents who scored in the top 10% on depressive symptoms; anxiety (n=795) – adolescents who scored in the top 10% on anxiety symptoms, and comorbid (n=367) – adolescents who scored in the top 10% on anxiety and depressive symptoms. As expected, females were significantly overrepresented in the depression, $\chi^2(1)=116.16$, $p<.001$, anxiety $\chi^2(1)=36.72$, $p<.001$, and mixed anxiety/depression groups, $\chi^2(1)=63.97$, $p<.001$.

Analyses of variance was used to explore whether adolescents in the anxious, depressed, and comorbid groups differed in terms of their peer relationships and health. A significant difference was found between the groups on peer relationships, $F(2,13)=31.14$, $p<.001$. Follow-up testing (Tuckey, $p<.05$) revealed that children in the comorbid depressed/anxious group reported significantly less positive peer relationships (mean score=35.39) than children in the depressed group (mean score=36.39). Children in the anxious group reported significantly more positive peer relationships (mean score=38.27) than children in the other groups. Similarly, a significant difference was found between the groups on health, $F(2,13)=27.67$, $p<.001$. Follow-up testing (Tukey, $p<.05$) revealed that children in the comorbid group reported significantly poorer health (mean score=14.7) than children in the anxious group (mean score 15.95) and the depressed group (mean score=16.33), who did not differ significantly from each other.

Discussion

This study found a moderate association between anxiety and depression. However, it is important to remember that this study was cross-sectional in nature and we cannot draw conclusions about the direction of causality. Longitudinal research is necessary to determine if increased anxiety is a risk factor for the development of later depression.

Furthermore, our results indicated that adolescents in grade 10th (16-17 years) reported more depression and anxiety than adolescents in grade 8th (14-15 years old). Younger adolescents in grade 6th (10 to 13 years) reported the least anxiety and depressive symptoms. Previous studies have reported a general trend of increasing depression with age (Lewinsohn, Rohde, & Seeley, 1998; Schraedly, Gotlib, & Hayward, 1999). However, this is one of the first studies to find significant increases in anxiety and depression across these three age groups.

Females reported more anxiety and depression than males. This finding also parallelled the results of previous studies which have found gender differences in non-clinic samples (Spence, 1998; Lewinsohn et al., 1998; Schraedly et al., 1999). Interestingly, this study found evidence of a significant interaction between age and gender on anxiety. Younger boys and girls (10 to 13 years) were found to have comparable levels of anxiety, however as children develop during adolescence, females begin to report more anxiety than males. This interaction was only significant for anxiety, and gender differences in depressive symptoms were found across all grades. This is consistent with previous studies which have not found evidence of an age by gender interaction on depression (Schraedly et al., 1999; Lewinsohn et al., 1998). Replication of our findings of age and gender differences in depression and anxiety symptoms in Portuguese and other children and adolescents is needed.

The results of this study suggest that anxiety and depression increase in adolescence. One implication of this finding is that early intervention and prevention programs need to target childhood and early adolescence to prevent or ameliorate the onset of depression and anxiety in adolescence. Prevention programs may be especially important for females, since girls seem to

be at increased risk for developing internalising problems. It is important for future studies to identify the psychosocial and biological factors associated with the onset of depression and/or anxiety during adolescence. Peer relationships, which become increasing important during adolescence, are one social factor that may influence adolescents psychological functioning.

This study found moderate associations between peer relationships and anxiety and depression in adolescents. This finding is consistent with a number of previous studies which have documented a link between negative peer relationships and feelings of depression (Kupersmidt & Patterson, 1991; Boivin et al., 1994, 1995; Harter & Whitesell, 1996). Interestingly, children in the comorbid depressed/anxious group showed the least positive peer relationships, followed by children in the depressed groups who reported worse relationships with peers than children in the anxious group. This finding parallels McGee et al. (1992) who found that children with comorbid anxiety and depression tend to demonstrate greater social impairment than children with either anxiety or depression alone. Taken with the finding that children with high depressive symptoms have less positive peer relationships than anxious children, it may be that depressive symptoms are more strongly connected with poor peer functioning than anxiety symptoms. Future research is needed to address this question.

Finally, poorer health was associated with higher anxiety and depressive symptoms. As for peer relationships, children in the comorbid group reported poorer health than children experiencing either high anxiety or depressive symptoms alone. Taken together, these results support the contention that children with comorbid anxiety and depressive symptoms are more impaired. The beneficial effects of peer relationships in reducing anxiety and depressive symptoms may be most relevant for adolescents experiencing poorer health. Helping children who are experiencing anxiety and depression to form positive peer relationships may help to improve their physical and mental health (Matos, 1997; Matos, Simões, & Carvalhosa, 2000; Matos & Carvalhosa, 2001). Supportive peer relationships may help to buffer against anxiety and depressive symptoms and therefore facilitate health.

This study has a number of limitations which should be considered when interpreting the results. First, the variables used in this study were developed post hoc from an existing survey. Consequently, some variables had only a small number of items and moderate internal consistency. Second, the findings are based entirely on adolescents' self-reports and biases in perception and reporting cannot be ruled out. Finally, because the study was cross-sectional we are unable to draw conclusions about the direction of causality between the variables of interest. A longitudinal study investigating whether gender differences in anxious and depressive symptoms are more evident with increasing age would inform current understanding of the relationship between anxiety and depression, and age and gender effects on this relationship.

Notwithstanding these limitations, this study used a large sample of adolescents and the sampling procedures helped to ensure a nationally representative sample. Description of calculations about representativity of HBSC national samples was detailed in Roberts, François, Batista-Foguet, and King (2000). Moreover, this study is one of the first investigations into the effects of age, gender and peer relationships on depression and anxiety in a national wide Southern European Country.

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Pour ce travail nous avons utilisé les données de Health Behaviour in School-Aged Children (HBSC) Survey, étude qui a été conduite au Portugal par un des autheurs, étant la representante nationalle de l'étude Européenne HBSC, une étude de collaboration avec l'Organisation Mondiale de la Santé (Currie, Hurrelmann, Setterbulte, Smith, & Todd, 2000; Matos, Simões, Carvalhosa, Reis, & Canha 2000). Le but de cette étude est d'examimer les correlates de la dépression et de l'anxieté dans un échantillon representatif d'adolescents. L'étude a quatre objectifs: (1) examiner le rapport entre le sentiment de dépression et d'anxieté; (2) examiner l'association entre un rapport social positif avec les copains, et l'anxieté et la dépression chez les adolescents; (3) examiner le rapport entre santé, rapport social avec les copains, dépression et anxieté; (4) évaluer des differences d'âge et sexe a propos des thèmes énoncés. Nous avons contruit des mesures de dépression, anxieté, rapport avec les copains et santé. Dans la même direction que des études antérieures, l'anxieté et la dépression ont été significativement corrélées. Une MANOVA nous a appris que les filles et les adolescents en 8ème et 10ème presentaient plus fréquemment symptômes d'anxieté et de dépression. Anxieté élevée et dépression ont été associées avec un pis rapport social avec les copains et une perception de la santé plus faible. Les implications des résultats de cette étude et la direction d'études futures sont discutés.

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Current theme of research:

Adolescents health. Adolescents psychopathology. Social competence. Promotion of active lifestyles.

Most relevant publications in the field of Psychology of Education:

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Current theme of research:

Child psychopathology. Prevention and Early Intervention. Family Processes.

Most relevant publications in the field of Psychology of Education:

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Current theme of research:

Prevention and treatment of childhood and youth internalising disorders. Involvement of the family in the assessment and treatment of internalising disorders. Cognitive processing of threat in childhood anxiety and obsessive-compulsive disorder. Family interactions and processes involved in maintenance of anxiety disorders in childhood. Anxiety and adjustment in youth from non-English speaking backgrounds in Australia.

Most relevant publications in the field of Psychology of Education:

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Current theme of research:

Treatment of childhood and youth anxiety disorders. Family processes and interpretation of threat in childhood anxiety.

Most relevant publications in the field of Psychology of Education:

Shortt, A., Barrett, P.M., Dadds, M.R., & Fox, T. (2001). The influence of family and experimental context on cognition in anxious children. *Journal of Abnormal Child Psychology, 29*(6), 585-596.

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