

Parent and Youth Discrepancy Ratings of Mental Health Symptoms in Adolescents: The  
Moderating Role of Family Functioning

Master's Thesis

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### Abstract

Internalizing disorders are prevalent among youth. However, disagreements exist between parents' and youth's reports of mental health symptoms. In particular, youth-onset internalizing disorders such as depression and anxiety have been shown to have the highest reporter discrepancies amongst all disorders. In this study we examined what may contribute to these discrepancies by examining the moderating role of family functioning in a sample of 456 parent-adolescent dyads. Results indicated that although discrepancies did exist between parent and adolescent ( $M$  age = 14.97 years;  $SD$  = 0.33 years) reports of both anxiety and depression, family functioning did not significantly moderate these discrepancies. The results of this study provide further knowledge on the subject of youth mental health by establishing the presence of parent-adolescent report discrepancies.

### Declaration of Academic Achievement

Sabrina Fontaine is the primary author of the manuscript, “Parent and Youth Discrepancy Ratings of Mental Health Symptoms in Adolescents: The Moderating Role of Family Functioning”. As the primary author, contributions included: the research proposal, literature review, analyzing of the data, manuscript preparation, as well as manuscript revisions. The data used for the current manuscript stems from the McMaster Teen Study. The principle investigator of the McMaster Teen Study, Dr. Tracy Vaillancourt, is the co-author of this manuscript and thesis supervisor. Dr. Vaillancourt provided advice and expertise during each phase of the research and preparation of the manuscript.

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## Parent and Youth Discrepancy Ratings of Mental Health Symptoms in Adolescents: The Moderating Role of Family Functioning

Mental health disorders are prevalent among Canadian children and youth (14-25%; Mental Health Commission of Canada, 2013; median prevalence estimate of 12%; Costello, Egger, & Angold, 2005), although rates vary considerably by who is reporting on symptoms (e.g., children, parents, or teachers). According to De Los Reyes and Kazdin (2005) it is important to understand informant discrepancies in the assessment of childhood psychopathology because such diversity of opinions impacts the “assessment, classification, and treatment” of mental health disorders (p. 484). However, despite researchers calling attention to this issue over a decade ago, little research has been conducted on informant discrepancies as they relate to parent-child relationships (De Los Reyes & Kazdin, 2005; Treutler & Epkins, 2003). In this study we examined how discrepancies in adolescent self-reports and parent-reports of the youth’s mental health symptoms were potentially moderated by family functioning (as measured by parent-reports). The main research questions investigated were: (1) Are there discrepancies in how parents and adolescents report anxiety and depression; and (2) Does family functioning (as perceived by parents) moderate the relation between parents’ and adolescents’ ratings of internalizing disorders?

### Review of the Literature

#### Internalizing Disorders

Internalizing disorders are characterized as those which display more quiet, internal distress and core disturbances to ‘intropunitive’ emotions and moods such as sadness, sorrow, guilt, fear, and worry; as opposed to overtly, socially negative, and/or disruptive behaviour characterized by externalizing disorders (Tandon, Cardeli, & Luby, 2009; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Anxiety disorders, often comorbid with major depression, are the most common psychiatric diagnoses in youth (Kamin et al., 2015). Anxiety disorders and depression predict adverse outcomes in young adulthood, including academic underachievement, early parenthood, substance dependence, and/or suicidal behaviour (Costello et al., 2005; Kamin et al., 2015; Woodward & Fergusson, 2001). Anxiety is considered the most prevalent internalizing disorder (lifetime rate between 10-25%) and depression is one of the most common childhood internalizing disorders (prevalence rate between 5-15%; Crawford, Schrock, & Woodruff-Borden, 2011). Those who develop depression or anxiety in childhood are at an

increased risk for developing depression, anxiety, or other psychiatric disorders later in adulthood (Crawford et al., 2011). Internalizing disorders can be expressed in many ways, such as being withdrawn or displaying avoidance behaviour, having somatic complaints, anxious self-talk, low perceived competence, perceived helplessness, and attributions of failure to internal, stable, and global causes (Bentley et al., 2016; Cole, Peeke, Dolezal, Murray, & Canzoniero, 1999; Cole et al., 2008; Kazdin, Esveldt-Dawson, Sherick, & Colbus, 1985; Peris et al., 2015; van Gastel, Legerstee, & Ferdinand, 2009).

### **Discrepant Reports**

When assessing for potential diagnoses of childhood and adolescent mental disorders, clinicians have yet to discover a more definitive or cost-effective means than self-reports or informant reports, which often lead to inconsistencies (De Los Reyes, 2011). It is well acknowledged both clinically and in research that disagreement exists between parents' and children's reports of symptoms (Choudhury, Pimentel, & Kendall, 2003; Jensen et al., 1999; Thompson, Kline, Reeves, Pitts, & Schiffman, 2013). Jensen et al. (1999) noted that while parents and children rarely agree on whether diagnostic conditions are present, most diagnoses identified by parents-only or children-only reflect meaningful clinical conditions, although some might perhaps not reflect full diagnostic conditions (such as with attention-deficit hyperactivity disorder or oppositional defiant disorder). These differences suggest that parent- and child-reports may focus on different aspects of psychopathology and therefore yield relatively independent information (Cole, Hoffman, Tram, & Maxwell, 2000). Muris, Meesters, and Spinder (2003) investigated the correspondence between parent-reports and child-reports on symptoms of anxiety and depression and found only modest agreement when reporting on symptoms of anxiety and only slightly higher agreement for symptoms of major depressive disorder. Research shows that there is a greater discrepancy for ratings of internalizing disorders than other disorders (Niditch & Varela, 2011).

Although it is common in research and in clinical practice to gather assessment information from multiple informants, major concerns with interpreting and drawing conclusions based on multiple informant measures include the lack of ability in determining an accurate informant (i.e., there is "no way to determine absolute reliability and validity of a report"; De Los Reyes, 2011, p. 2) and methods for ascertaining this information. Historically, clinicians have relied upon parent-reports of their children's symptoms in order to establish a diagnosis and

develop a course of treatment. These reports often vary considerably from children's self-reports (Krain & Kendall, 2000). Differences in parent- and child-reports yield important information that cannot be ignored, nor can one informant ever truly be considered 'better' than the other (Grills & Ollendick, 2003). Although it is difficult to establish who reports symptoms most reliably, or how reliability can even be measured (often by the number of criteria endorsed for a given diagnosis; Jensen et al., 1999), researchers have explored different pairs of multiple informants to focus attention on which ones show the most agreement or discrepancy. Achenbach et al. (1987) found, through a meta-analysis, that self and parents (as well as self-teachers, self-mental health workers, self-observer, and self-peer) had the highest rate of symptom discrepancy than any other informants, such as those with similar roles (e.g., parent-parent) and those with different roles (e.g., teacher-parent). Krain and Kendall (2000) found that parents reported substantially more symptoms of anxiety in their children than did the children themselves and that parent-reports varied considerably more from children's self-reports when examining internalizing behaviour, including anxiety and depression, than they did when examining externalizing disorders.

It is possible that greater discrepancy is due to internalizing disorders manifesting through symptoms that are not readily observable (e.g., physiological reactions and cognitive processes of the child's inner distress) and therefore presenting themselves in a more covert fashion where parents have difficulties accessing emotions that children do not willingly discuss (Choudhury et al., 2003; Grills & Ollendick, 2003; Muris et al., 2003; Niditch & Varela, 2011). According to Jensen et al. (1999), some researchers see child-only reports of impairment as being more indicative of illness as they may provide more meaningful descriptions of the child's own burden; however, they should perhaps not be relied upon as the only opinion informing a diagnosis. In contrast, some clinicians tend to favour parent input over child input (Grills & Ollendick, 2003) and have suggested parents could be the most important informants when assessing a child's behavioural and/or emotional problems (Achenbach et al., 1987). Ollendick and Hersen (1993) emphasized that the diverse reports gathered from multiple informants, notably parents and children, could provide helpful information in gathering a complete clinical picture of either the child or the family. The proper integration of these varying and discrepant reports is an important methodological issue when attempting to reach a diagnosis (Choudhury et al., 2003).

One issue found in the literature regarding the discrepancies between parent and child ratings is how researchers resolve differences. Rather than directly address the issue in their study, many researchers place greater weight on child-reports than on parent-reports to offset the discrepancies (Mash & Barkley, 2003). Studies on informant discrepancies also have researchers taking a difference score between the informant ratings; however this leaves no room for interpretation of these discrepant results (Laird & De Los Reyes, 2012). Still other researchers have integrated the various informant reports together through combinational methods, which could ultimately lead to the loss of pertinent information (De Los Reyes, 2011). For example, when deriving DSM diagnoses, the typical practice is to combine the results from both parent and child informants since both are considered to be useful in contributing accurate information (Jensen et al., 1999). However, this approach is not always supported in clinical settings as there is often a priori reasoning for giving greater emphasis to certain informants over others (Jensen et al., 1999).

Choudhury et al. (2003) found that parent-child agreement on diagnostic criteria for childhood anxiety disorders is often quite poor (average  $\kappa = 0.14$ ), and integrating these discrepant reports for diagnostic purposes is a remaining methodological issue. Thus, it is important to keep in mind that informant discrepancies can contain important and salient information beyond simple measurement error (Laird & De Los Reyes, 2012). Although research on the relative validity of parent- and child-reports of internalizing symptoms is limited, there is evidence to suggest that there *are* discrepancies between parent- and child-reports of internalizing behaviour and that youth could be better assessors than parents. This is based on findings that children better predicted their subjective experiences of anxiety and behaviour when given behavioural approach tasks compared to parents (Cobham & Rapee, 1999; DiBartolo & Grills, 2006). Therefore, emphasizing parent-reports would be a poor approach to reporting discrepancies as this could actually invalidate the results (Niditch & Varela, 1999).

Although there seems to be clear evidence pointing to the presence of discrepancies between parent- and child-reports (i.e., youth under the age of 12), less is known about parent- and adolescent-reports (i.e., children between 12 and 18). Grills and Ollendick (2003) note that age could factor into report discrepancies with older children tending to show more agreement with parents than younger children, although agreement still did not reach acceptable levels. Adolescence is a time marked by a clear increase in the influence of peer groups, which may

provide adolescents with an alternative outlet to discuss emotions and internal turmoil (Berndt, 1979; Brown et al., 1993; Gecas & Seff, 1990; Harris, 1995). Reliance on parents' opinions and advice decline in adolescence when more time is spent with peers than family (Harris, 1995). Indeed, around ninth grade adolescents show the most resistance and report the greatest number of disagreements with parents (Berndt, 1979; Brown, Mounts, Lamborn, & Steinberg, 1993; Phillipson, Allan, & Morgan, 2004). This could in turn lead to lower agreement between parent- and adolescent-reports of internalizing disorders. In the present study, we examined such potential discrepancies between parents and adolescents.

### **Family Impact on Mental Health Reports**

Environments fostering positivity and allowing children to express their feelings directly to their parents could allow for the development of an appropriate mechanism in addressing emotional problems as children grow up, possibly explaining why family cohesion has a stabilizing effect on internalizing problems over time (Lucia & Breslau, 2006). Poor family functioning can negatively impact children in various ways, such as higher associations with depressive or anxious symptoms and the risk of developing other childhood internalizing disorders, more high-risk behaviour, increased disordered eating, and lower academic success rates (Crawford et al., 2011; Dinsmore & Stormshak, 2003; Hughes, Hedtke, & Kendall, 2008; Kim, Viner-Brown, & Garcia, 2007). When family dysfunction is reported prior to treatment intervention, overall poorer treatment outcomes are evidenced for children with anxiety disorders, suggesting that poor family functioning has a negative impact on treatment outcomes (Crawford & Manassis, 2001). A parent's ability to reflect on their child's mental state in the parent-child relationship (i.e., reflective functioning) has been shown to be a strong predictor of the parent-child relationship quality, including involvement, communication, satisfaction, and support (Rostad & Whitaker, 2016).

Family functioning is seen as having an important role in the reported symptoms of children with depression and anxiety disorders. Environmental factors such as parental conflict, marital discord, other-child interactions, and family cohesion have all been associated with the presence of internalizing symptoms in children (Buehler et al., 1997; Crawford et al., 2011; Leve, Kim, & Pears, 2005; Lucia & Breslau, 2006). Studies point to an inverse relationship between family support and the presence of depression in adolescents (Young, Berenson, Cohen, & Garcia, 2005), some showing depressed adolescents having less secure attachments with

parents (Armsden et al., 1990) and others indicating that adolescents with good parent and peer attachment are less depressed compared to other less attached adolescents (Laible, Carlo, & Raffaelli, 2000). Family functioning and behavioural control were rated by parents as being much lower when their child had an anxiety disorder (Hughes et al., 2008). Both maternal and paternal ratings of poor family functioning are associated with worse outcomes in children, including severity of childhood anxiety disorders, anxiety symptoms in children, and the child's global functioning (Hughes et al., 2008). Keeton et al. (2013) found that anxiety treatments focused on children and child outcomes only, despite the possible presence of parent psychological distress, resulted in improvements to parents' symptoms as well as to overall family functioning, especially when children responded successfully to the provided treatment. This shows benefits to the family system as a whole, including possible parental mental health functioning, when targeting treatment to child internalizing symptoms.

### **Family Functioning as a Moderator of Report Discrepancies**

According to De Los Reyes (2011) not only do discrepancies exist, but they *should* exist as they can inform researchers and clinicians how children's emotional and behavioural expressions can vary according to situation and time, as revealed by different adult informants based on different settings (i.e., parents and teachers). Several moderating variables have been investigated in terms of parent- and youth-report discrepancies, including relational- and family-related variables (Tissot et al., 2014). The main moderating variable of interest in the current study was family functioning, often assessed by means of parent-report but sometimes include adolescent-reports as well. Various family and parent factors have been investigated in several ways related to child and adolescent mental health, but there is no literature to our knowledge on family functioning as it relates to informant reporting, and specifically reporting discrepancies. However, since family relationships are some of the most important in an individual's life, and it is known through past literature that parent-child discrepancies are a concern within informant reports, this motivated our investigation of family functioning as a moderator of report discrepancies.

Family functioning is defined as the emotional bonding of family members, the ability to effectively communicate, as well as cooperativeness and flexibility when attending to problems (Epstein, Bishop, & Levin, 1978). Family environments commonly include adaptive factors such as communication, responsiveness, affective expression, and family roles (Crawford et al.,

2011). Berge, Wall, Larson, Loth, and Neumark-Sztainer (2013) further describe family functioning as both the structural and organizational properties and interactions of family members, which involve communication, problem solving, adaptability, roles, behavioural control, as well as warmth and closeness. The parent-child relationship is often considered the most important relationship one has (Pinquart, 2013); with emotional bonds including connectedness being the most important dimension (Clark & Ladd, 2000).

Treutler and Epkins (2003) found that parent-child relationships (involving aspects such as parental acceptance, time spent with children, number of topics discussed, and intensity of parent-child discussions and/or conflicts) can also influence the amount of discrepancy detected when reporting on internalizing and externalizing behaviour. Families with parents who have constructive relationships with their children and provide conducive family environments (monitoring child progress, paying attention to moods and struggles, and communicating openly and freely) lead to positive impacts on student outcomes (Turley, Desmond, & Brunch, 2010). When anxious and depressive symptoms are present in adolescents, stronger links are found between both parent-adolescent conflict (a component of family functioning) and adolescent daily negative mood (Timmons & Margolin, 2015), meaning that internalizing symptoms are associated with higher levels of parent-child conflict. Grills and Ollendick (2003) found greater agreement for all individual diagnostic categories between parents and children from low conflict families. Positive parent-child relationships can prove effective for child development on many different accounts, including being a protective factor against social stress for adolescents at risk of psychosis (Bentley et al., 2016). Lucia and Breslau (2006) noted an important relation between mother-rated family cohesion (an aspect of family functioning) and internalizing problems in their children, reporting stronger family cohesion having beneficial effects on children's mental health over time. When studying adolescents at clinically high risk of psychosis, high levels of caregiver emotional involvement, positive remarks, and warmth lowered adolescent symptoms and increased social functioning (O'Brien et al., 2006). These longitudinal studies point to *family functioning* as having an impact on mental health over time. Hence, family functioning as it relates to mental health, and the possible presence of discrepancies, was of interest to the current study.

## **Current Study**

Past research highlights the need to examine children within family contexts. Important information can be drawn from discrepancies that exist between parent and child ratings of mental health disorders. Studies are inconclusive when dealing with ratings of mental health between parents and children, some stating parents are more accurate informants (Jensen et al., 1999) and some stating the opposite (Achenbach et al., 1987; Grills & Ollendick, 2003), but all agreeing discrepancies are present (Achenbach et al., 1987; Choudhury et al., 2003; De Los Reyes, 2011; Jensen et al., 1999; Krain & Kendall, 2000; Muris et al., 2003; Thompson et al., 2013). Although some have investigated such discrepancies among parent-reports and their children's reports of their own mental illness (or lack thereof) as being undeniably present, there is still much debate about discrepancies between parents and adolescents. Likewise, an area of research relatively untouched is how family functioning factors into the potential lack of agreement at such a sensitive period. Therefore, in this study the potential impact (i.e., moderating role) of high or low family functioning on parent and adolescent discrepancy ratings of internalizing disorders was investigated.

## **Research questions and hypotheses**

Based on the literature presented herein, adolescent self-reports of mental health symptoms and parent-reports of their adolescent's mental health symptoms, specifically anxiety and depression, were studied and the following research questions were investigated.

*Research Question 1:* Do adolescent self-reported mental health scores differ from parent-reported adolescent mental health scores of anxiety and depression using symptom severity and diagnoses?

*Hypothesis:* Adolescents' and parents' mental health scores of youth will be discrepant on internalizing disorders of anxiety and depression when investigating both symptom severity and diagnoses.

*Research Question 2:* Does family functioning act as a moderator between parent-reports and adolescent-reports of adolescent internalizing symptom severity and diagnoses?

*Hypothesis:* Family functioning will moderate the relation between adolescent self-reported internalizing symptom severity and diagnoses and parent-reported adolescent internalizing symptom severity and diagnoses such that at higher levels of family functioning higher agreement will be found between reporters than at lower levels of family functioning.

## Methodology

### Participants

The data for the study were collected through means of cluster sampling, where participants were gathered from a cluster of the population, in this case schools, rather than the entire population itself (O'Leary, 2014). Specifically, data was drawn from the fifth year (currently in its tenth year) of the *McMaster Teen Study*, a larger, on-going longitudinal study which was originally designed to investigate the relation between peer victimization, academic achievement, and mental health. Ethics approval is obtained each year. Of the 51 schools included in the study at Time 1 (2008), 875 students (80% participation rate) from the various grade five classrooms agreed to participate in the longitudinal arm of the study. Every spring parents were contacted and asked to provide consent for their child's participation in a self-report questionnaire and their own participation in a telephone interview about their child's development (Appendix A). Child assent was also obtained each year (Appendix B). Participants were compensated for their participation with gift cards (increasing in amount for each year of participation; students received \$25 and parents received \$20 at Time 5 of the study). The sample for the current study was based on the data collected in 2012, from Time 5 of the *McMaster Teen Study*, when students were in grade 10 (age  $M = 14.97$ ;  $SD = 0.33$ ). Data were available for 456 students and their parents (52.1% of the longitudinal cohort). This sample was derived by including only those dyads in which both a parent and an adolescent completed the surveys (paper or electronic questionnaires for adolescents and telephone interviews for parents) at the specified time point.

We examined the moderating role of family functioning in the discrepancy between reports in a sample of 15-year-olds. This age was chosen based on research suggesting that mental health problems are particularly high at this age (McGee et al., 1990). The combined prevalence rate of disorders found by McGee et al. (1990) in boys and girls aged 15-years-old was 22% (10% having a parent confirmed disorder, and the most frequently occurring being anxiety disorders), which was found to be fairly consistent with other studies that suggested the rate of identifiable mental health disorders found in adolescents was approximately one in five individuals (Mental Health Commission of Canada, 2012). Hence, mental health is at its peak around this age range, and with this being the main focus of the study we chose to base our investigation around adolescents approximately 15-years-old.

Participants included in current sample were compared to those not included. This missing data analysis was conducted because the data were derived from a longitudinal study. Included sample participants were compared to those participants who had complete data from only one member of the dyad at Time 5 ( $N = 68$ ). The results of a series of independent samples  $t$ -tests indicated that those participants not included did not significantly differ from selected participants on any of the variables of interest in the study (parent-reported depression, adolescent self-reported depression, parent-reported anxiety, adolescent self-reported anxiety, family functioning, and gender).

## Measures

### Internalizing problems: self-reported

Symptoms of anxiety and depression were assessed (at Time 5 of the *McMaster Teen Study*, using the sample mentioned above,  $N = 456$ ) using the Behaviour Assessment System for Children, Second Edition (BASC-2). This is a widely used clinical assessment tool examining behaviour and self-perceptions of children and adolescents and assists clinicians in making differential diagnoses based on criteria found in the DSM-IV (Bentley et al., 2016). Two of the Self-Report of Personality (SRP) scales from the BASC-2 were used to assess core symptoms which relate to DSM-IV diagnostic criteria of anxiety and depression. The BASC-2 scales have good internal consistency (alpha of .91 for the anxiety scale and .89 for the depression scale in the current study) and the anxiety and depression scales show high factor loadings on internalizing problems (Reynolds & Kamphaus, 2004).

The BASC-2 anxiety scale for adolescents has 13 items added together to create a composite. Examples of questions included in the anxiety symptoms measure are “I can never seem to relax” or “I worry a lot of the time”, to which each response is assigned an answer of true or false and questions such as “I get so nervous I can’t breathe”, to which each response is assigned a rating on a 4-point Likert-type scale ranging from ‘never’ to ‘always’. The BASC-2 depression scale for adolescents has 12 items added together to create a composite. Examples of questions in the depression symptoms measure include “I used to be happier”, “Nothing is fun anymore”, and “I just don’t care anymore” to which each answer is again reported by selection of true or false.

**Internalizing problems: parent-reported**

Parent measures of their youth's anxiety and depression were assessed using the Brief Child and Family Phone Interview (BCFPI-3), which is used to screen for childhood psychiatric disorders (Boyle et al., 2009). The overall family functioning subscale correlates well with other similar measures of family functioning (Boyle et al., 2009). The BCFPI-3 has suitable test-retest reliability, stable and reliable scores, and high inter-rater reliability (Boyle et al., 2009; Reid et al., 2006), as well as correlating well with other similar measures such as the Ontario Child Health Survey (OCHS-R) and the Diagnostic Interview Schedule for Children (DISC-IV; Cook et al., 2013).

The specific BCFPI-3 subscales used from the Mental Health scale were (1) managing anxiety which corresponds to diagnostic criteria in the DSM-IV for generalized anxiety disorder (GAD) and consists of 6 items added together to make a composite, and (2) managing mood which corresponds to diagnostic criteria in the DSM-IV for major depressive disorder (MDD) and consists of 6 items added together to make a composite. The BCFPI-3 subscales have good internal consistency, with alphas of .86 for the managing anxiety subscale and .87 for the managing mood subscale. The BCFPI-3 measure for child anxiety includes questions such as "Do you notice that your child is overly anxious to please people?" and "Do you notice that your child worries about doing better at things?" Parent measures for childhood depression include questions such as "Do you notice that your child has no interest in usual activities?" and "Do you notice that your child seems unhappy, sad, or depressed?" Both the parent-reported anxiety and depression measures were answered by parents using a 3-point Likert-type scale ranging from 'never' to 'often'.

**Family functioning: parent-reported**

Family functioning was assessed by parents only, as it is a measure included in the BCFPI, but no adolescent reports of family functioning were available. Parental reports of family functioning were assessed using the BCFPI 6-item subscale added together to create a composite (coefficient alpha of .83) on overall family functioning and included questions rated on a 4-point Likert-type scale ranging from 'strongly agree' to 'strongly disagree' such as, "In times of crises we can turn to each other for support" and "We are able to make decisions about how to solve problems" (where "we" is left up to the interpretation of the participant as to who in the family

this includes). Scores are reflective of family issues in areas such as communication, support, attachment, general relationships, and problem solving.

### **Analytic Plan**

All analyses were performed using SPSS software. The method of analysis for the research question of whether there are discrepancies in how parents and adolescents report anxiety and depression was looked at two ways. First, a correlation analysis was performed to test the linear association between the two variables of self-reported adolescent mental health symptoms and parent's judgement of their adolescent's mental health symptoms. Second, Chi-Square statistics were used to look at parent and adolescent discrepancies in terms of diagnostic criteria and meeting pre-established clinical cut-off scores.

Chi-Square statistics were also run in order to determine percent agreement and Cohen's kappa, including sensitivity and specificity. Sensitivity refers to the proportion of cases in the sample with a disorder that are correctly or accurately classified, while specificity refers to the number of cases without a condition or disorder that are correctly or accurately classified. Cut-off scores were used for both the BASC-2 and BCFPI-3. For the BASC-2, raw scores of 16 and above were considered clinically significant for the depression scale (associated with a *t*-score of 70) and therefore coded as 1, and coded as 0 if a score of 15 or under was obtained. For the BASC-2 anxiety scale, a score of 24 or above was considered clinically significant (also associated with a *t*-score of 70) and coded as 1, and coded as 0 for scores of 23 or less (Reynolds & Kamphaus, 2004). BCFPI-3 cut off scores were used to determine whether a parent was reporting evidence of anxiety and/or depression in their adolescent, using the Managing Anxiety and Managing Mood scales, as well as scores on the Family Functioning scale (whether they see their adolescent as limiting family relationships in the community, perceived as a source of conflict within the family, or evidence of greater impairment in family functioning). BCFPI-3 subscale *t*-scores of 70 or above are considered elevated and good predictors of mental health problems evidenced longer term in youth, as reported by their parents. The corresponding raw score (to a *t*-score of 70) on the BCFPI-3 managing anxiety subscale is that of 8 or above in order to be considered clinically significant, which was coded as 1 and scores of 7 or less were coded as 0. Likewise, raw scores of 6 or above for the managing mood subscale was considered clinically significant and was coded as 1, and scores 5 or below was coded as 0.

The role of family functioning as it moderated discrepancies between parent and youth reports was examined using a hierarchical linear regression, as well as a logistic regression to test the relationship of these variables, with gender entered as a control and all means centered. When adding in a moderating variable of family functioning and comparing it with the potential discrepancies found in parent- and adolescent-ratings it was predicted that family functioning would significantly moderate this difference. It was further predicted that if the parent- and adolescent-ratings were discrepant then the family functioning ratings would be low, and vice versa.

## Results

### Descriptive Analyses

Descriptive statistics, as well as means and standard deviations are reported in Table 1. Approximately 55% ( $n = 249$ ) of students in the sample were girls and 45% ( $n = 207$ ) were boys. Parent- and adolescent-reports of depression ( $r = .39, p < .001$ ) and anxiety ( $r = .33, p < .001$ ) were positively significantly correlated within and across reporters. Family functioning was negatively significantly associated across adolescent reports of depression ( $r = -.15, p < .001$ ) and anxiety ( $r = -.09, p < .05$ ) as well as parent-reports of depression ( $r = -.21, p < .001$ ). An independent samples  $t$ -test was run with gender as a grouping variable for parent-reported adolescent depression ( $t(443) = -2.36, p < .05$ ), parent-reported adolescent anxiety ( $t(449) = -3.56, p < .001$ ), adolescent self-reported depression ( $t(430) = -5.52, p < .001$ ), adolescent self-reported anxiety ( $t(452) = -8.61, p < .001$ ), and family functioning ( $t(450) = .307, p = .759$ ). In the sample, girls self-reported higher rates of depression symptoms than boys ( $M = 5.67$  and  $M = 2.88$  respectively), as well as higher rates of self-reported anxiety symptoms than boys ( $M = 13.63$  and  $M = 7.96$  respectively). Parents also reported higher rates of depression symptoms when their adolescents were girls as opposed to boys ( $M = 1.32$  and  $M = 0.88$  respectively), as well as higher rates of anxiety symptoms for girls as opposed to boys ( $M = 4.16$  and  $M = 3.23$ ).

Approximately 7.0% of adolescents in the sample were in the clinical range for depression based on self-reports and 4.6% based on parent-reports. For anxiety, approximately 8.3% were in the clinical range based on self-reports and 10.5% based on parent-reports.

## Reporter Discrepancies

### **Do adolescent self-reported mental health scores differ from parent-reported adolescent mental health scores?**

In examining continuous scores, moderate significant positive correlations for parent- and adolescent-ratings of anxiety,  $r = .33, p < .001$ , and depression,  $r = .39, p < .001$ , were found, indicating that adolescent self-reports and parent-reports of adolescent symptoms had some shared variance but also a substantial amount of non-overlap. A Chi-Square test of independence was performed to compare the frequency of clinically elevated symptoms of adolescent depression and anxiety by reporter. Results indicated that there was a statistically significant difference between the expected frequencies and the observed frequencies for depression ( $\chi^2(1, 445) = 23.64, p < .001$ ) and anxiety ( $\chi^2(1, 450) = 20.84, p < .001$ ).

Separate interrater reliability analyses using the Kappa statistic were also performed to determine if there was agreement between parent and adolescent ratings on both anxiety and depression. The Kappa measure of agreement is a way of looking at categorical outcomes in order to determine the consistency of agreement between two reporters. Cohen's Kappa is suggested to be interpreted as no agreement ( $\kappa < 0$ ), no agreement to slight agreement (0.01-0.20), fair agreement (0.21-0.40), moderate agreement (0.41-0.6), substantial agreement (0.61-0.80), and almost perfect agreement (0.81-1.0; McHugh, 2012). There was fair agreement between parents and adolescents for ratings of depression,  $\kappa = 0.23, p < .001$ , as well as anxiety,  $\kappa = 0.21, p < .001$ . For ratings of depression, of the 31 cases self-reported by adolescents as being depressed, 7 of these cases (or 22.6%) were also reported by parents as being depressed, yielding a sensitivity score of 22.6%. The specificity for parent-reports of depression was found to be 96.6%, meaning that of the 414 cases self-reported by adolescents as not being depressed, 400 were also reported as not depressed by parents. For ratings of anxiety, a sensitivity score of 32.4% was found, meaning that of the 37 cases self-reported by adolescents as being anxious, 12 were reported by parents as being anxious as well. The specificity for parent-reports of anxiety was 91.5%, meaning that of the 413 cases self-reported by adolescents as not being anxious, it appeared that 378 were also reported not anxious by parents.

### Family Functioning

#### **Does family functioning act as a moderator for differences found between parent-reports and adolescent-reports of symptoms of anxiety?**

Using hierarchical linear regression and logistic regression analyses, we tested the hypothesis that family functioning would moderate the relationship between parent and adolescent reports of internalizing symptoms and disorders. We followed the procedures outlined by Aiken and West (1991). Specifically, parent-reports were used as the outcomes. Seeing as the moderator was parent-reports of family functioning we linked this to parent-reports of internalizing disorders, used as the dependent variable. Predictor variables were centered prior to creating the interaction. At step 1, the controls of gender, parent-reported anxiety/depression, adolescent-reported anxiety/depression and main effects (i.e., adolescent-report of anxiety/depression and family functioning) were entered and at step 2 the interaction was entered. A significant  $R^2$  change was used to determine evidence of an interaction.

Starting with anxiety, as reported in Table 2, gender was entered as a control as well as parent-reported depression and adolescent-reported depression. In the first step of the linear regression equation family functioning was found not to be a significant predictor of parent-reported anxiety symptoms. However, adolescent self-reported anxiety symptoms did significantly predict parent-reported adolescent anxiety symptoms,  $\beta = .26$ ,  $t(437) = 4.36$ ,  $p < .001$ . At the second step, the non-significant interaction term indicated that family functioning was not a moderator of report discrepancies.

Logistic regression analyses were conducted to predict parent-reported clinical levels of anxiety in their adolescents using adolescent self-reported clinical levels of anxiety and family functioning as predictors (and gender again entered as a control). Testing was conducted in steps in order to examine possible moderating effects of family functioning, with the interaction term entered in the second step. In the first step, a test of the full model against a constant only model was statistically significant, indicating the predictors reliably distinguished between those reported as anxious and not anxious ( $\chi^2 = 142.64$ ,  $df = 5$ ,  $p < .001$ ). Nagelkerke's  $R^2$  of .20 indicated a weak relationship between prediction and grouping, with overall prediction success of 90.4% (99.7% for non-anxious and 10.9% for anxious). The Wald criterion demonstrated that adolescent self-reported clinical anxiety made a significant contribution to prediction,  $\text{Exp}(\beta) = 4.3$  (95% CI = 1.65-11.06),  $\beta = 1.45$ ,  $p < .01$ , but family functioning was not a significant

predictor,  $\text{Exp}(\beta) = 1.00$  (95% CI = 0.86-1.15),  $\beta = 0.003$ ,  $p = .964$ . At the second step, the interaction term was not a significant predictor,  $\text{Exp}(\beta) = 0.891$  (95% CI = 0.65-1.22),  $\beta = -0.12$ ,  $p = .475$ .

### **Does family functioning act as a moderator for differences found between parent-reports and adolescent-reports of symptoms of depression?**

The hypothesis that family functioning would moderate the relationship between parent and adolescent reports of depression was again tested using regression analyses, as reported in Table 3. In the first step of the linear regression equation gender was again entered as a control variable along with parent-reported anxiety and student-reported anxiety. Adolescent self-reported depression symptoms did significantly predict parent-reported adolescent depression symptoms,  $\beta = .41$ ,  $t(441) = 7.06$ ,  $p < .001$ , as well as family functioning,  $\beta = -.17$ ,  $t(441) = -3.76$ ,  $p < .001$ . At the second step, the non-significant interaction term indicated that family functioning was not a moderator of report discrepancies.

Similar to anxiety, logistic regression analyses were conducted to examine the association of parent-reported clinical depression with self-reported clinical depression and family functioning, controlling for gender. Testing was conducted in steps in order to examine possible moderating effects of family functioning, with the interaction term entered at the second step. In the first step, a test of the full model against a constant only model was statistically significant, indicating the predictors reliably distinguished between those reported as depressed and not depressed ( $\chi^2 = 45.75$ ,  $df = 5$ ,  $p < .001$ ). Nagelkerke's  $R^2$  of .32 indicated a weak relationship between prediction and grouping, with overall prediction success of 96.8% (100% for non-depressed and 30% for depressed). The Wald criterion demonstrated that adolescent self-reported clinical depression made a significant contribution to prediction,  $\text{Exp}(\beta) = 8.05$  (95% CI = 2.05-31.62),  $\beta = 2.09$ ,  $p < .01$ , as did family functioning,  $\text{Exp}(\beta) = 0.80$  (95% CI = 0.66-0.97),  $\beta = -0.22$ ,  $p < .05$ . At the second step the interaction term was not a significant predictor,  $\text{Exp}(\beta) = 1.51$  (95% CI = 0.89-2.56),  $\beta = 0.41$ ,  $p = .126$ .

### **Discussion**

In the current study, we examined the potential moderating role of family functioning on discrepant reports of internalizing disorders in adolescence, as measured by both adolescent reports and parent-reports. Descriptive statistics indicated that anxiety and depression were significantly correlated within reporters, which is not surprising given the comorbid nature of the

two disorders and consistent with previous literature (Axelson & Bimaher, 2001; Kamin et al., 2015). It is clear from past research that an effective way to study child and adolescent mental health is by assessing reports using multiple informants. Therefore, for the current study, adolescents completed self-report measures of anxiety and depression and parents completed reports of their adolescent's anxiety and depression symptoms, as well as their family functioning. Research signifies the existence of informant discrepancies in mental health reports of youth, especially when investigating internalizing disorders (Achenbach et al., 1987).

### **Report Discrepancies**

Past research has indicated a clear presence of discrepancies when it comes to multiple informants, most focusing their investigations on parents and children (Achenbach et al., 1987; Choudhury et al., 2003; De Los Reyes, 2011; Jensen et al., 1999; Krain & Kendall, 2000; Muris et al., 2003; Thompson et al., 2013). This leaves exploration into parent and adolescent reports, when mental health symptom severity seems to be at its peak (McGee et al., 1990; Mental Health Commission of Canada, 2012), largely unexplored. Results of the current study, examining adolescent discrepancies, indicate that there was some agreement between parent and adolescent reports of anxiety and depression symptoms in youth. Parents and adolescents were consistent when reporting on cases of the adolescent *not* being depressed or anxious; however, there were inconsistencies between parent-reports and adolescent-reports when adolescents *did* self-report as being depressed or anxious. The problem with these discrepancies however lies in who is a more accurate informant of said anxiety/depression. If parents report their adolescent as depressed or anxious, but the adolescent does not, this could point to poor introspection on the part of the adolescent, if in fact they do have a diagnosable case of depression or anxiety, which could potentially affect their help-seeking behaviour. In a similar fashion, if an adolescent is self-reporting as depressed or anxious but their parent is not, this could equally affect help-seeking as parents are often the ones making appointments for their adolescents and might in turn affect them receiving the attention they need.

There is disagreement in the literature about whether older children display more agreement or less agreement with parents when reporting on mental health symptoms. Krain and Kendall (2000) state that adolescents report significantly greater levels of anxiety than younger children, but this could potentially be explained by an increased ability with age to more accurately identify and define anxious feelings. Adolescents may be better at reporting on their

symptoms than children due to a more profound understanding of their internal states and emotions, and might therefore display higher agreement with parent-reports (Harris, 1995; Lewis et al., 2014). However, other researchers have noted contradictory findings that adolescents rely more on peers as they get older and less on parents, therefore potentially not openly discussing emotional or internal turmoil within families, which may lead to lower agreement between parent- and adolescent-reports (Berndt, 1979; Brown et al., 1993; Gecas & Seff, 1990) as evidenced in this study. Alternatively, adolescents may be better at reporting on their symptoms as they distance themselves from parents, in which case, as they get older discrepancies could continue to increase. As mental health discrepancies have largely been studied between parents and younger children, the findings of the present study provide new information that discrepancies seem to exist in older age groups as well. Future research into the nature and cause for these discrepancies in older populations may be interesting.

### **The Moderating Role of Family Functioning**

Regression analyses indicated that adolescent self-reported internalizing disorders were significantly predictive of parent-reported adolescent internalizing disorders (for both anxiety and depression). The hierarchical linear regression analyses showed that parent-reports of adolescent depression were predicted by family functioning, but parent-reports of adolescent anxiety were not. According to past studies on the links between both depression and anxiety on family functioning (Armsden et al., 1990; Hughes et al., 2008; Laible et al., 2000; Young et al., 2005), largely involving children, we would expect to have seen a link between reports of anxiety as well, and not just depression. Studies show similar links between low family functioning and the presence of anxiety disorders in children, but studies are sparse when linking this to adolescents. Perhaps anxiety in adolescents does not have similar negative associations with family functioning as it has been shown to in children (Hughes et al., 2008), or as adolescent depression has been reported to be associated with poorer family functioning (Armsden et al., 1990; Laible et al., 2000; Young et al., 2005). Future research would warrant investigation on the link between family functioning and anxiety disorders in adolescence. Logistic regression analyses indicated that family functioning significantly distinguished those who were reported as clinically anxious and not-clinically anxious, as well as those who were reported as clinically depressed and not-clinically depressed in the sample. Further, results indicated that as parent-reports of adolescent internalizing disorders increased, family

functioning decreased. This is consistent with past research that child internalizing disorders are lower over time among families high in family functioning and higher among families lower in family functioning (Keeton et al., 2013; Lucia & Breslau, 2006).

In addressing our second research question, family functioning did not significantly moderate the discrepancies between parent and adolescent reports of anxiety or depression. Although we predicted a moderating effect, this result is not entirely unfounded given the conflicting nature of past literature on whether adolescents' reliance on parents declines as age increases or remains stable. Some report no change in parent-youth relationships as youth age, classifying this shift away from parents and toward peers as a myth (Gullotta, Adams, & Markstrom, 2000), and several others report the highest degree of parent-child conflict beginning around 14 years of age when adolescents show the most resistance and report the greatest number of disagreements with their parents (Berndt, 1979; Brown et al., 1993). If the latter is true, this could potentially explain why family functioning was not found to significantly moderate report discrepancies in older children, but may still act as a moderator when investigating discrepancies in younger children, which would warrant future research. Furthermore, Laible et al. (2000) studied parent and peer attachment in adolescents and found that those who had secure relationships with peers but less secure relationships with parents were actually better adjusted (in terms of depression, aggression, and sympathy ratings) than the adolescents in the study who reported having secure relationships with parents but less secure relationships with peers. This seems to indicate the possibility that peers play a more important role when it comes to adjustment in adolescence than do parents, consistent with Harris' (1995) theory on group socialization in youth. If true, this could also explain why family functioning did not act as a moderator in the present study.

It is possible that no moderating effect was found because the family functioning scores may have been biased. Parents, and not youth, reported on family functioning. Given that adolescence is a sensitive period, when relationships with parents may be experiencing a shift toward the peer group, adolescents may not inform their parents on as much or use as many details when discussing problems. Aspects of family functioning include strong and effective communication, responsiveness, and affective expression (Crawford et al., 2011; Epstein et al., 1978). A lack of these key features could leave parents unaware of their adolescents' point of view within the family. Adolescents in turn could have a much different view on their family's

functioning, which we would have been largely unaware of, and may have contributed to the findings of this study. Furthering the possible bias in the parents' reporting of their family's functioning, there might be an element of social desirability influencing results (especially seeing as the parent interviews were conducted by telephone). This would be almost impossible to determine without coinciding adolescent ratings of family functioning using similar items and method of collection.

### **Limitations of the Study**

Limitations of the study include the fact that parents and adolescents were not asked the same questions for anxiety and depression. As noted by Carlston and Ogles (2009), the discrepancies between different informants can be lowered if all are administered the same questions. Since the research was conducted using a pre-existing and ongoing data set, the questions being administered to parents and adolescents could not be altered. Moreover, because the measures being used needed to be reliable and appropriate to the age demographic, there was no way to administer the same questionnaire to both parents and adolescents. Likewise, various researchers have noted that teachers are also important influences in children's and adolescents' lives and have also noted that discrepancies exist between children and teacher ratings; therefore, this could be the basis for the inclusion of teacher reports in future similar studies (Achenbach et al., 1987; Griggs and Mikami, 2011; Youngstrom, Loeber, & Strouthamer-Loeber, 2000). Another limitation was that family functioning was assessed solely by parent-reports and similar questions were not administered to student participants, leaving us to draw conclusions about these scores exclusively based on the parents' potentially subjective ratings. The inclusion of adolescent reports of family functioning would be interesting for future directions of research and for future similar studies.

Further, only testing youth from schools in Southern Ontario could also be problematic in that we did not assess a broad enough sample to infer generalizability across cultures and geographical locations. However, the large sample size in the current data set, as well as the fact that it was randomly drawn, should at least partly account for this.

Finally, youth whose parents suffer from mental illness have been shown to be more likely to suffer from mental illness themselves, whether this be due to a genetic predisposition, the environment in which the individual is raised, or the most common assumption being a mixture of both; therefore, potentially leading to a common bias (Jacobs et al., 2013; Lilienfeld,

2003; O'Connor et al., 1998; van Gastel et al., 2009). Parent's personal mental health ratings were not accounted for in the study, and seeing as past literature points to parents with mental health disorders themselves possibly being biased in reporting mental health in their children (De Los Reyes & Kazdin, 2005), this could also be basis for inclusion in future similar studies.

### **Clinical and Research Implications**

Understanding discrepancies in informant ratings has potential for practical application to clinical settings. By understanding that these discrepancies occur, judgement calls can be made as to how much weight should be placed on each of the reporters' ratings. Likewise, such investigations offer insight into appropriate measures of multiple informant ratings so as not to lose valuable information in the analytical process (Laird & De Los Reyes, 2012). Such research could provide further knowledge on the subject of youth mental health in terms of investigating who can be considered reliable informants of adolescent symptoms through establishing the presence of discrepancies. Implications include knowing where these discrepancies lie (i.e., between parents and youth) and when they occur developmentally in order to develop relevant interventions targeted at relevant recipients. For example, parents' under- or over-reporting their youth's anxiety and depression symptoms when compared to adolescents' self-reports (and vice versa) warrants further investigation as to why this is occurring. This also leads to speculation about similar report discrepancies of other symptoms or disorders in adolescence.

In sum, rather than treating report discrepancies as measurement error, it is pertinent to investigate why these discrepancies exist so that treatment plans can be accurately aimed at the presenting problem. In the present study we sought to examine if family functioning would account for such discrepancies. Although the results did not support our prediction, family systems should be kept in mind when considering types of reporters and the value to such information. Relationships with parents are arguably the most important relationship individuals have (Pinquart, 2013) and therefore parents have the ability to provide valuable information on the possible presence of mental health conditions in youth. However, the presence of discrepancies in these reports must be acknowledged as existing in parent-adolescent reports as they are in parent-child reports. Peers are also increasingly important in adolescence (Berndt, 1979; Brown et al., 1993). Examining both peer groups and the family system as a whole warrants further attention as it allows for investigation into the adolescent's social circles and its relation with adolescent psychopathology reports in terms of impacting informant discrepancies.

Results of this study could help guide investigation criteria as well as diagnostic criteria in gaining a broader lens for all areas involving multiple informant information (De Los Reyes & Kazdin, 2005). Informant discrepancies in reports of youth mental illness are beneficial in interpreting symptoms reports and have significant potential for awareness and caution in clinical assessments and treatment planning (De Los Reyes & Kazdin, 2005).

### **Conclusion**

Discrepancies between parent- and child- reports are well documented in the literature. To date, the exploration of the discrepancies between parents and adolescents has been relatively unexplored. Results of the current study indicated that report discrepancies do in fact exist between parents and older youth. Parents seem to accurately report when internalizing disorders are not present in their adolescents, but miss the mark when reporting internalizing disorders that are self-reported by their adolescents. Although family functioning did not moderate these report discrepancies, it did significantly distinguish between cases of those reporting as being in the clinical and non-clinical ranges for both anxiety and depression. Future research should consider what other factors might moderate or attenuate these discrepancies, as well as what influence peer groups may have at this stage. Counsellors and practitioners should be aware of these issues, who they are using as informants, who is seeking help for the adolescents and making the appointments, as well as acknowledge that discrepancies in symptoms and diagnoses exist within this age group. Knowing these discrepancies will exist, clinicians should be wary about whom they include as informants of youth mental health and have a priori reasoning as to how much weight is placed on each informant when establishing a diagnosis.

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Table 1

*Bivariate correlations, means, standard deviations, and t-tests of study variables*

	SR DEP	SR ANX	PR DEP	PR ANX	<i>M</i>	<i>SD</i>	Girls <i>M</i>	Girls <i>SD</i>	Boys <i>M</i>	Boys <i>SD</i>	<i>t</i>
SR DEP					4.440	5.713	5.672	6.415	2.882	4.264	<b>-5.516</b>
SR ANX	<b>.663</b>				11.051	7.680	13.633	7.833	7.957	6.225	<b>-8.611</b>
PR DEP	<b>.385</b>	<b>.204</b>			1.124	2.010	1.324	2.078	0.882	1.889	<i>-2.361</i>
PR ANX	<b>.267</b>	<b>.327</b>	<b>.368</b>		3.743	2.803	4.167	2.807	3.234	2.720	<b>-3.563</b>
FF	<b>-.151</b>	<i>-.094</i>	<b>-.212</b>	<i>-.077</i>	21.210	2.400	21.177	2.412	21.246	2.386	0.307

Note. Results in bold are significant at  $p < .001$ ; results in italics are significant at  $p < .05$ . SR=self-report; PR=parent report; DEP=depression; ANX=anxiety; FF=family functioning

Table 2

*Summary of hierarchical linear regression analysis for anxiety*

DV:		Parent-Reported Anxiety				
Variable	Model 1			Model 2		
	$\beta$	$t$	$p$	$\beta$	$t$	$p$
SR ANX	.263	4.357	.000**	.267	4.410	.000**
FF	-.012	-.262	.793	-.009	-.196	.845
Gender	.030	.634	.526	.029	.609	.543
SR DEP	-.035	-.569	.569	-.040	-.646	.518
PR DEP	.290	6.072	.000**	.289	6.057	.000**
FF x ANX				-.036	-.819	.413
$R^2$		.165			.164	
$F$		18.266			15.321	

Note. Regression coefficients are significant at \*\* $p < .001$ ; regression coefficients are significant at \* $p < .05$ ; SR=self-report; PR=parent report; ANX=anxiety; DEP=depression; FF=family functioning

Table 3

*Summary of hierarchical linear regression analysis for depression*

DV: Parent-Reported Depression						
Variable	Model 1			Model 2		
	$\beta$	$t$	$p$	$\beta$	$t$	$p$
SR DEP	.374	6.615	.000**	.372	6.498	.000**
FF	-.139	-3.255	.001*	-.138	-3.214	.001*
Gender	.026	.582	.561	.026	.572	.567
SR ANX	-.158	-2.676	.008*	-.158	-2.656	.008*
PR ANX	.271	6.072	.000**	.271	6.067	.000**
FF x DEP				-.046	-1.027	.305
$R^2$		.171			.171	
F		23.705			19.177	

Note. Regression coefficients are significant at \*\* $p < .001$ ; regression coefficients are significant at \* $p < .05$ . SR=self-report; PR=parent report; ANX=anxiety; DEP=depression; FF=family functioning

## Appendix A

*Parent Consent Form*

**Dr. Tracy Vaillancourt**  
MAC-Teen Study

McMaster University  
1280 Main Street West  
Hamilton ON L8S 4K1

Phone 905.525.9140 Ext. 27866  
1-888-622-8681 (toll free)  
Fax 905.529.6225  
<http://www.mac-cura.ca>

Spring, 2012

Dear Parent (s) or Guardian (s):

Thank you again for your continued participation in the MAC-Teen Study. It's hard to believe that we are about to start data collection for Time 5!

Attached you will find a consent form for this phase of the study. We hope you and your child will participate. Longitudinal studies on bullying are rare and even rarer when it comes to looking at bullying over 5 years. We certainly recognize the incredible opportunity we have to learn new and important information about this serious issue. We anticipate the information we have gathered will help inform policy and anti-bullying program development.

For this phase of data collection we haven't changed much from last year. We have added a few new questionnaires that reflect the changes that occur as children grow older. We have increased the compensation to parents (now \$20) and children (now \$25) in recognition of the time commitment you have given to this study. And, back by popular demand, we will again be drawing for two \$100 gift certificate (parents) and 6 iPods (students)! Congratulations to our lucky winners from last year 😊

As is always the case, please feel free to contact us if you have any questions or concerns.

Warm regards,

Tracy Vaillancourt, Ph.D.



**Dr. Tracy Vaillancourt**  
MAC-Teen Study

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1280 Main Street West  
Hamilton ON L8S 4K1

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**Study Title:** MAC-Teen Study YEAR 5: Understanding Stability and Change in Social Experiences from Childhood into Early Adolescence.

**Principal Investigators:** Tracy Vaillancourt, Ph.D., Professor and Canada Research Chair, Faculty of Education, University of Ottawa and Department of Psychology, Neuroscience, & Behaviour, McMaster University; Patricia McDougall, Ph.D., Associate Professor, Department of Psychology, University of Saskatchewan.

**What will happen during the study?:** In this phase of the study we are again asking you to take part in a brief phone interview to ask you about your child's behaviour and functioning. If you choose to participate in the interview, you will receive a call from the University of Ottawa (613-562-5800).

In addition to asking you about your child, we would also like your child to complete (at home) a similar survey as last year. The survey would take approximately 40 minutes. If you choose the paper version your child will receive a paper copy of the survey with a postage paid return envelope. If you choose the online version, you will be emailed/mailed instructions on how your child can access the survey from home. Just like last year, the survey asks about a wide range of social behaviours, attitudes and experiences. This year we have added some questions about school transitions, personality, and social support.

We ask that you respect the importance of allowing your child to fill out the survey privately so that he/she feels comfortable answering openly. If we feel your child is at risk for depression or an eating disorder we will contact you about this concern (see note #5 below).

The last piece of information we would like to collect comes from your child's Ontario School Record (OSR). There is information about your child's learning skills in Grade 9 (for example, problem solving and initiative) that would be extremely helpful. With your permission, we would collect this information.

**Other things you should know are that:**

1. Individual answers will not be shown to anyone. We are just interested in how all students, together, answer all our questions.
2. Some of the information collected in this study may be published and presented at conferences. In all cases, the data will be reported in group format with no way to identify an individual or a specific school.
3. All of the information we collect will be safely stored by Dr. Vaillancourt in locked filing cabinets and kept for at least 5 years following the end of the full study. After this time, the questionnaires will be destroyed.
4. Because this is a longitudinal study, we will ask you for your consent again next year.
5. There are two important exceptions to our efforts to keep your child's answers entirely confidential. If your child reports to us that he or she is feeling extremely sad (depressed) or reports symptoms of an eating disorder, we will need to contact him or her and you, as the parent, to follow-up with a discussion on how to help with the situation.

**Will anything bad happen during the study? What good things could happen if I take part?:** We are not aware of any major risks associated with taking part in this type of research. Some of the questions do probe sensitive areas but you and your child may skip any question you wish. Still it is important to recognize that if you or your child has any concerns about consequences that come from participating in this study or any discomfort related to your child's participation in the study please contact Dr. Tracy Vaillancourt (contact information below) so that she can provide you with assistance.

**Compensation:**

**1) Parents:** We really want to know your decision about participation, whether it's positive or negative. For returning your consent form within 2 weeks (regardless of your decision to participate) you will be entered in a draw for **1 of 2 \$100 gift certificates** of your choice. If you decide to participate, to thank you for taking part this year you will receive a **\$20 gift certificate** for (your choice): Cineplex Odeon, Chapters, Walmart, iTunes, EB Games, or Tim Hortons.

**2) Your Child:** If your child participates in the survey, he/she will also be offered a choice of a **\$25 gift certificate** for participating in the student questionnaire. In addition, if your child completes and returns the survey within 2 weeks he/she will be entered in a draw for **1 of 6 iPod touch (8GB)**.

To win the prize, the person must correctly answer a skill testing question. If the person cannot be reached within 14 days from the date of the draw, the prize will be awarded to the second name that is randomly selected and so on until the prize has been awarded. The odds of winning a \$100 gift certificate are approximately 1 in 200 and the odds of winning an iPod are approximately 1 in 70. The prize must be accepted as awarded or forfeited and cannot be redeemed for cash. The draw is governed by the applicable laws of Canada.

**Further information:** For more information about the previous MAC-Teen Study consent forms please see [www.mac-cura.ca/mac-teen.htm](http://www.mac-cura.ca/mac-teen.htm).

**Contact:** This project has been reviewed and received ethics clearance through University of Ottawa and McMaster Research Ethics Board. If you have questions or would like further information about this study, please contact Dr. Tracy Vaillancourt at 1-888-622-8681 or by e-mail at [tracy.vaillancourt@uottawa.ca](mailto:tracy.vaillancourt@uottawa.ca). If you have any concerns about your or your child's treatment or rights as research participants, please contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall 550 Cumberland St., Room 159, Ottawa, ON K1N 6N5 Tel. (613)562-5841; Email: [ethics@uottawa.ca](mailto:ethics@uottawa.ca).

**Consent:** I understand that my participation in this study is entirely voluntary and that I may refuse to participate or withdraw from the study at any time without any consequences. I understand that if I do not want to answer certain questions I do not have to and I can still stay in the study. I also understand that I can withdraw my child from participating at any time during the course of the study by contacting Dr. Vaillancourt (information listed above). I understand that my child can choose to withdraw from participating at any time without any consequences. Finally, I understand that I may keep the enclosed copy of this sheet for my own records. My decisions are indicated on the following page.

**Instructions:** Please return the YELLOW consent form to the MAC-Teen Study Team in the postage paid envelope provided. Thank you!

**PLEASE RETURN TO SENDER IN PRE-PAID ENVELOPE PROVIDED. THANKS!**

**Please check one box to answer each question below:**

1. Do you yourself agree to participate in a phone interview in Year 5 of this study?

- Yes\*       No

Your phone number is: \_\_\_\_\_ Best time to call? \_\_\_\_\_

Alternate phone number: \_\_\_\_\_ Best time to call? \_\_\_\_\_

\* Please note that if you have said yes to question # 2 and no to # 1 we still need your phone number in case we need to follow up with you regarding a high score on our depression or eating behaviour questions (see consent form). Your phone number will only be used for this purpose. We will not keep your phone number on file beyond this use.

2. Does your child have your permission to participate in the home survey in Year 5 of this study, if he or she wants to?

- Yes       No

If Yes... Online version  Paper version

Address where the survey or login instructions will be sent:

Email Address (Parent): \_\_\_\_\_

Email Address (Student): \_\_\_\_\_

Address: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

3. Do we have your permission to access information from your child’s Ontario Student Record in Year 5 of this study?

- Yes       No

Name of Child \_\_\_\_\_ (please print)

Name of Parent or Guardian \_\_\_\_\_ (please print)

Parent or Guardian Signature \_\_\_\_\_ Today’s Date \_\_\_\_\_

## Appendix B

*Adolescent Assent Form*

**Dr. Tracy Vaillancourt**  
MAC-Teen Study

McMaster University  
1280 Main Street West  
Hamilton ON L8S 4K1

Phone 905.525.9140 Ext. 27866  
1-888-622-8681 (toll free)  
Fax 905.529.6225  
<http://www.mac-cura.ca>

## Assent Form

**Study Title:** MAC-Teen Study YEAR 5: Understanding Stability and Change in Social Experiences from Childhood into Early Adolescence.

**Study Leaders:** Tracy Vaillancourt, Ph.D., Faculty of Education, University of Ottawa and Department of Psychology, Behaviour & Neuroscience, McMaster University; Patricia McDougall, Ph.D., Department of Psychology, University of Saskatchewan.

**Why are we doing this study?:** In this study we want to again talk to you and your parents about you and what your social relationships are like at school. We are mostly interested in why some students get picked on for a long time while other students are almost never picked on at school.

**What will happen during the study?:** If you decide to again take part in the study we will ask you to do the same survey as last year with a few minor changes. The survey stills asks about a lot of different behaviours, attitudes and experiences which includes questions about how you feel about school, other people, and bullying. This year we have added some questions about school transitions, personality, and social support.

The survey would take about 40 minutes.

**Who will know what I said or did in the study?:** Each year, when you have answered questions on the survey we did not tell anyone else what you said unless your answers told us that you were depressed (very sad). If this was the case, you may recall that Dr. Vaillancourt spoke to you and your parents about this to make sure that you were OK. We will do the same thing this year if you indicate that you are depressed or have symptoms of an eating disorder.

This year we will again protect your privacy by not using your name. Instead, a code number will go on your questionnaire.

**Will anything bad happen during the study?** We don't know of any risks that go along with taking part in this type of research. Although completing the questionnaire may not always involve positive thoughts and feelings, it is our experience that students do not suffer any negative consequences of participating. Remember that you do not need to answer questions that make you uncomfortable or that you do not want to answer.

If you do have any concerns about consequences that come from participating in this study or any discomfort related to participating in the study please contact Dr. Tracy Vaillancourt (her phone number is in the contact section) so that she can provide you with assistance. You may also decide to contact the Kids Help Phone at 1-800-668-6868 and talk to a counselor about how you feel.

**Compensation:** To thank you for taking part in this study **you will receive a \$25 gift certificate** for Cineplex Odeon, Chapters, Walmart, iTunes, EB Games, or Tim Hortons (your choice). If you decide to stop participating once you have started, you will still be given the gift certificate. **If you complete and mail the survey within 2 weeks you will be entered in a draw for an iPod Touch (8GB; 6 iPods will be given away).**

To win the prize, you must correctly answer a skill testing question. If you cannot be reached within 14 days from the date of the draw, the prize will be awarded to the second name that is randomly selected and so on until the prize has been awarded. The odds of winning a prize are approximately 1 in 70. The prize must be accepted as awarded or forfeited and cannot be redeemed for cash. The draw is governed by the applicable laws of Canada.

**Contact:** This project has been reviewed and received ethics clearance through the University of Ottawa and McMaster Research Ethics Board. If you have questions or would like further information about this study, please contact Dr. Tracy Vaillancourt at 1-888-622-8681 (free call) or by e-mail [tracy.vaillancourt@uottawa.ca](mailto:tracy.vaillancourt@uottawa.ca). If you have any concerns about your rights as a research participant, please contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall 550 Cumberland St., Room 159, Ottawa, ON K1N 6N5 Tel. (613)562-5841; Email: [ethics@uottawa.ca](mailto:ethics@uottawa.ca).

**Participation:** I understand that it is up to me to decide whether I want to take part in this study or not. If I participate in the study I know that I may choose not to answer any question that I wish. I understand that I may stop being part of the study for any reason, at any time, without penalty of any sort. If I decide to stop taking part in the study, it will not be a problem at all. If I start answering the questions and then decide to stop, any answers that I've already given will be destroyed.

**Read the sentence below and mark the box so we know that you have read it and understand what it means.**

- If I take part in the study, I understand that if Dr. Vaillancourt, upon reviewing my answers, thinks that I may be feeling very sad or report symptoms of an eating disorder, that she will contact me and my parents to talk about this so that together we can do something to help me with my feelings.

**Please tell us your decision by marking the "Yes" or "No" box.**

- Yes, I would like to take part in this study.
- No, I do not wish to take part in this study.  
Please do not fill out the survey and mail it back to us.

Participant #: \_\_\_\_\_

## Assent Form

**Please send this back to us with your completed survey.  
Thanks!**

**Read the sentence below and mark the box so we know that you have read it and understand what it means.**

- If I take part in the study, I understand that if Dr. Vaillancourt, upon reviewing my answers, thinks that I may be feeling very sad or report symptoms of an eating disorder, that she will contact me and my parents to talk about this so that together we can do something to help me with my feelings.

**Please tell us your decision by marking the “Yes” or “No” box.**

- Yes, I would like to take part in this study.
- No, I do not wish to take part in this study.  
Please do not fill out the survey and mail it back to us.