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ABSTRACT

Parental anxiety and emotional intelligence (EI), while peripherally linked in the research literature, have rarely (if ever) been tested for a direct relationship. This thesis involved research that established a link between those two constructs. To make that connection, quantitative data was collected using the Emotional Quotient Inventory: Youth Version (EQ-i:YV) and the State-Trait Anxiety Inventory (STAI) to link parental self-reports of trait anxiety with their Grade 10 children's self-reports of EI. Additionally, a demographic survey was utilized to compare differences in STAI and EQ-i:YV scores across a variety of groups. The findings indicated the possibility of a relationship between parental trait anxiety and adolescent EI as confirmed by the finding of a correlation between increased levels of parental trait anxiety and diminished stress management abilities. Additional findings included strong suggestions that less-anxious parents spend more time with their children and also have children with higher scores on many (most) of the EQ-i:YV scales, indicating that those children that share more than three meals a week and generally spend more time with their caregivers have stronger EI abilities.
TABLE OF CONTENTS

Abstract ii
Table of Contents iii
List of Tables xi
Acknowledgement xii

Chapter 1 Introduction 1
Problem Statement 2
Rationale and Theoretical Framework for the Study 2
Is Adolescent EI Influence by Parental Trait Anxiety? 6
Hypotheses 6
Definition of Terms 10
Chapter Summary 11

Chapter 2 Literature Review 13
Definition of Emotional Intelligence 13
Definition of Anxiety 15
Effects of Parental Anxiety 17
Influences of the Parent-Child Relationship 19
Genetics 19
Attachment 20
Infant-Caregiver Communication 24
Mentalization 26
Caregiver Attunement and Sensitivity 27
Parenting Practices 30
Parental Anxiety and Adolescent EI

Parental Expectations 31

Interventions to Reduce the Effects of Parental Anxiety 33

Effects of a Controlling Parenting Style 35

The Bidirectional Influence of Temperament and Anxiety 37

Behavioural Inhibition 40

Hyper-Parenting 41

The Parent as Role Model 42

The Development of Emotional Intelligence 44

Attachment 44

The Influence of the Home Environment 45

The Importance of Parent-Child Connectedness 47

Teaching EI 49

The Importance of Emotion Coaching 50

The Influence of Parental EI 51

Importance of Emotional Intelligence 53

Academic Outcomes Associated with EI 53

Other Measures of Student Success 54

Background on the Selected Assessments 54

The State-Trait Anxiety Inventory 55

The Emotional Quotient Inventory: Youth Version 57

Chapter 3 Research Procedures 60

Purpose 60
Research Methodology and Population 61

Methodology 61

The Research Population 62

Participant Recruitment. 63

Phase 1. 63
Phase 2. 65
Phase 3. 66
Phase 4. 66
Phase 5. 67

Population Characteristics. 68

Summary of the Research Methodology and Population 69

Specific Procedures 70

Initially-Planned Procedures 70

Unexpected Changes 71

Research Protocol 71

Incentives 73

Summary of the Specific Procedures 73

Instrumentation 74

The Emotional Quotient Inventory: Youth Version 74

The State-Trait Anxiety Inventory 77

Summary of the Instrumentation 77

Data Collection and Treatment 78

Standardization and Validation of the Collected Data 78
Parental Anxiety and Adolescent EI

Student Age 100

Highest Level of Caregiver Education 101

Caregiver Relationship to Child 102

Summary of the Relationships between Demographics and STAI & EQ-i:YV Scores 102

Relationships between Family Togetherness and STAI & EQ-i:YV Scores 103

Examining Possible Differences in Means 103

Shared Meals per Week 105

Hours per Day Spent Together During the Week 106

Hours per Day Spent Together During the Weekend 106

Number of Shared Activities 108

Correlations between Time Together and EQ-i:YV/STAI Scores 110

Summary of the Relatedness of Family Togetherness and STAI & EQ-i:YV Scores 112

Additional Factors Not Included in this Chapter 114

Chapter Summary 115

Chapter 5 Discussion 117

Analysis of the Data Preparation Process and Findings 117

Rationale and Justification for the Data Preparation 118

The Affected Scales 119

The General Mood Scale 119

The Positive Impression Scale 121

The Inconsistency Index 122
Special Treatment of the Data in Light of the Indications for Caution 124

Summary of the Preparation of the Data 125

Analysis of the Main Correlational Findings 126

Is Parental Trait Anxiety Related to Adolescent EI? 126

Correlations between the STAI and EQ-i:YV Scores 126

Significance of the Stress Management Scale 128

Parental Modelling to Teach Stress Management 129

The Connection to Behavioural Inhibition 131

Connections to Attachment Security 132

Summary of the Main Correlational Findings 134

Analysis of the Demographic Findings 135

Gender 135

Adult Employment 136

Age 137

Highest Level of Caregiver Education 138

Summary of the Collected Demographic Findings 141

Analysis of the Family Togetherness Findings 142

Significant Differences Based on Frequency of Family Meals 143

Significant Differences Based on Other Measures of Family Togetherness 146

Summary of the Collected Family Togetherness Findings 149

Analysis of the Family Togetherness Correlations 150

Correlations between Family Togetherness and EI 150
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Demographic Survey</td>
<td>208</td>
</tr>
<tr>
<td>D</td>
<td>Sample Items from the EQ-i:YV-O</td>
<td>213</td>
</tr>
<tr>
<td>E</td>
<td>Information Letter for Parents</td>
<td>214</td>
</tr>
<tr>
<td>F</td>
<td>Planning 10 Teacher Consent Form</td>
<td>216</td>
</tr>
<tr>
<td>G</td>
<td>Permission Forms</td>
<td>217</td>
</tr>
<tr>
<td>H</td>
<td>EI Lesson Plan</td>
<td>222</td>
</tr>
<tr>
<td>I</td>
<td>Summary of Statistically-Significant Results</td>
<td>226</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Other Sample Characteristics</th>
<th>69</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 2</td>
<td>Independent T-Test Results and Descriptive Statistics Comparing the Full (N=83) and Partial (N=68) Samples</td>
<td>90</td>
</tr>
<tr>
<td>Table 3</td>
<td>Means and Standard Deviations of Student EQ-i:YV Scores Stratified by Gender</td>
<td>94</td>
</tr>
<tr>
<td>Table 4</td>
<td>Correlations Between Parental Trait Anxiety and Adolescent EI (N=83)</td>
<td>95</td>
</tr>
<tr>
<td>Table 5</td>
<td>Correlations Between Observer and Student Scores on the EQ-i:YV (N = 83)</td>
<td>96</td>
</tr>
<tr>
<td>Table 6</td>
<td>Differences in Mean Parental Anxiety and Adolescent EI Scores by Demographic Category</td>
<td>99</td>
</tr>
<tr>
<td>Table 7</td>
<td>Mean Differences in EQ-i:YV Scales by Highest Level of Caregiver Education</td>
<td>102</td>
</tr>
<tr>
<td>Table 8</td>
<td>Differences in Mean Parental Anxiety and Adolescent EI Scores by Family Togetherness Indicator</td>
<td>104</td>
</tr>
<tr>
<td>Table 9</td>
<td>Mean Differences in EQ-i:YV Scales and STAI Scores by Number of Meals Shared Per Week</td>
<td>106</td>
</tr>
<tr>
<td>Table 10</td>
<td>Mean Differences in EQ-i:YV Scales by Hours Per Day Spent Together During the Weekend</td>
<td>108</td>
</tr>
<tr>
<td>Table 11</td>
<td>Mean Differences in EQ-i:YV Scales by Number of Activities Shared Per Week</td>
<td>110</td>
</tr>
<tr>
<td>Table 12</td>
<td>Correlations Between Student/Caregiver Time Spent Together and Student EQ-i:YV Scores/ Caregiver STAI Scores (N = 82)</td>
<td>112</td>
</tr>
</tbody>
</table>
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Chapter 1

Introduction

From conception to adulthood, human development is influenced by many factors. From the particular conditions encountered in utero to the amount and type of attention received in infancy and childhood, children's developmental pathways may be changed as a result of a variety of reasons. In particular, the extent to which parents' expressions of mood and emotion (hereinafter referred to as affect) may shape their children's developments is becoming increasingly clearer to modern researchers (Cozolino, 2006; Karen, 1994; Schore, 1994; Siegel, 1999). The idea that a parent's mental state directly affects a child's development is not a new one. Winnicott (1965) wrote about the various ways a mother's or father's mental illness might be reflected in the behaviours and emotional well-being of their children and noted that it was unlikely to find a child unaffected by a parent's illness, if even only as a result of the increased distance that often results between parents and children when the former is ill and in need of extra rest or special care. More recently, some possible mechanisms by which parental affect might influence children have begun to emerge (Ginsburg, Grover, & Ialongo, 2005; Kagan & Snidman, 1999; Kertz, Smith, Chapman, & Woodruff-Borden, 2008; Krohne & Hock, 1991; Lindhout et al., 2006; Moore, Whaley, & Sigman, 2004; Muris, van Brakel, Arntz, & Schouten, 2010; Rapee, 1997; Rutherford, 2003; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002) although it is likely that there are still many areas of development potentially impacted by a parent's psychobiology that are as yet unexplored. One of these areas appears to be the effect of parental anxiety on the development of emotional intelligence (EI), broadly defined as those abilities related to the perceiving, assimilating,
comprehending, and managing of emotions. When surveying the literature for the proposal preceding this research, no works directly linking parental anxiety and the development of children’s EI capabilities were found. While maltreatment and deprivation have been observed to have serious negative effects on the development of EI (Smith & Walden, 1999), the possible influence of parental anxiety on EI seems not to have been considered.

Problem Statement

In order to begin the process of elucidating a connection between parental trait anxiety and adolescent EI, it was first necessary to consider what was already known or suspected to connect the two constructs and also what the expected contribution of this current work might be to that existing body of work. By describing the existing work that led to this current question and also the proposed way by which this current question would be researched, this section will provide a rough scaffold upon which subsequent chapters such as the Literature Review and the Discussion will build.

Rationale and Theoretical Framework for the Study

EI is a fairly recent construct that is related to psychological well-being (Carmeli, Yitzhak-Halevy, & Weisberg, 2009; Landa, Martos, & Lopez-Zafra, 2010) including reduced incidence of psychopathology, hopelessness, and depression (Hemmati, Mills, & Kroner, 2004), and increased social facility due to greater popularity with peers (Goleman, 1995; Lopes, Salovey, & Straus, 2003). Ciarrochi, Deane, and Anderson (2002) argued that some aspects of EI may be important in understanding and eventually even mediating the link between stress and mental health while Bastian, Burns, and Nettelbeck (2005) suggested it may also play a part in the development of life skills such as coping and finding satisfaction. In addition to the potentially advantageous effects on personal mental health,
greater levels of EI have also been linked to a variety of other benefits including academic achievement (Parker, Creque, et al., 2004; Parker, Summerfeldt, Hogan, & Majeski, 2004; Qualter, Whiteley, Morley, & Dudiak, 2009), workplace performance (Goleman, 1995; Goleman, 1998; Mayer & Salovey, 1997), and even success in the National Hockey League (NHL) (Perlini & Halverson, 2006).

Current research in EI largely focuses on describing possible advantages conferred by EI and delineating its parameters. Some researchers, most notably Goleman (1995), have suggested that EI may be more closely related to the achievement of various successes than other more traditional standardized measures of intelligence. It is possible that this close relationship is due, in part, to the tendency of many EI assessments to focus more on abilities that encourage the application and interpretation of knowledge in flexible ways. For example, the recognition that coping skills that might be effective in one milieu, such as work, might not be so effective or appropriate in an intimate relationship as described in Zeidner, Matthews, and Roberts (2009). Other current directions in EI research explore ways by which EI might be enhanced as there is evidence that EI can be improved and increased through the implementation of specific interventions, in particular, the teaching of explicit EI skills and abilities (Gore, 2000; UlutAŞ & Ömerglu, 2007). Whether looking at factors affecting its development, possible advantages conferred by its possession, or ways by which it might be augmented, as it is still such a recent construct, there is still much to be determined about EI.

As the literature review in the next chapter reveals, very little is known about the possibility of a connection between parental anxiety and its effects on the development of EI in children. At the onset of this research, it was necessary to work through a number of
related ideas to make the conceptual connection from parental anxiety to its possible effects on the development of EI as measured in adolescent children. While parenting practices and aspects of parental emotionality had been implicated in the development of behavioural inhibition in children (Kagan, 1994) as well as in the enhancement of aspects of children’s developing emotionalities (Saarni, 1999), there did not yet appear to be any reports linking parental anxiety and the development of EI. The intent of this research was not only to add to the extant bodies of research examining both influential factors in the development of EI and the possible effects of parenting on that development. By looking at possible connections between parenting and EI, this research may also provide support and justification for parenting programs that encourage and/or help teach parents to explore alternative ways of interacting with children. In particular, the intent of this research is to provide support and justification for programs that focus on raising parental awareness around the examples they set for their children. Being that parents’ modelling of behaviours sets a powerful precedent for children to follow (as will be explored at length in the literature review), by encouraging parents to look inward and work on modifying their own actions and reactions around their children rather than trying to “control” those same children, it is anticipated that parents will be able to improve their effectiveness as parents and increase their satisfaction with that role and also reduce the anxiety that may result from feelings of helplessness and frustration arising from ineffective attempts at control.

This research was undertaken from a social constructivist theoretical orientation. As described by Vygotsky (1978), this perspective is one that conceives of learning as a socially mediated process. He theorized about the integral role that environment and social ties play in the process of development and suggested that:
From the first days of the child's development, activities acquire a meaning of their own in a system of social behaviour and, being directed towards a definite purpose, are frequently refracted through the prism of the child's environment. The path from object to child and from child to object passes through another person. This complex human structure is the product of a developmental process deeply rooted in the links between individual and social history (p. 30).

Working from this particular orientation, the complicity of situation and social context in the development of both parental disposition and adolescent EI was assumed throughout this research, yet was not ever explicitly examined. A constructivist perspective implies that each person's moment-by-moment experience is fluid and so can never be truly accurately assessed as it is always in flux. In terms of child development, a constructivist approach acknowledges the qualitative nature of the developmental process and includes the child as an active participant in his or her learning rather than a passive recipient of knowledge. This perspective was especially relevant when considering the bidirectionality of influence between parents and children, as will be explored in this work's literature review.

While concerned with the influence of outside factors on children's developments, a constructivist approach does not specify mechanisms by which these outside influences operate in a given situation. By testing to see if parental trait anxiety might be influential in the development of children's EI abilities, this research proposes to test the effect of children's interactions with one particular aspect of their social environment, namely, the influences of their parents' expressions of mood and emotion.
Is Adolescent EI Influenced by Parental Trait Anxiety?

Although there has been much written about both parental anxiety and EI, it generally requires many steps to connect the two concepts to each other. The purpose of this study then was to examine the effect or effects that parental trait anxiety might have on adolescent EI and, in doing so, attempt to link the two phenomena directly. By examining links between adolescent EI and parental anxiety, it was hypothesized that it would be possible to provide further evidence of the benefits of working with parents to lessen their anxiety. Currently, parenting programs are used as part of certain counselling interventions meant to minimize or mitigate the development of anxiety in children (Maijers, 2008). By working with parents to mitigate their anxiety, it may be possible to somewhat control for the effects that that anxiety might have on those parents’ children (Kertz et al., 2008). When considering the many theorized benefits of EI, this type of preventative work on the part of parents might also potentially enhance their children’s chances for academic and other success in the process (Goleman, 1995; Parker, Creque, et al., 2004).

Hypotheses

While the statistical principle of parsimony suggests that the number of variables tested against each other at one time be limited in order to explain as much of the variability of the data as possible using the least number of explanatory variables, the fact that this was an exploratory study meant that there were a variety of tests run on the collected data. Whereas the various correlations that were tested were meant to help identify possible areas of relatedness between parental trait anxiety and adolescent emotional intelligence, the examination of the data based on demographic factors was important in order to identify possible confounds. These confounds, variables that the researcher failed to control or
eliminate from the study and that may be at least partly responsible for the observed relationships in the data, will be revealed in the Results chapter of this thesis.

At the onset of this research, it was anticipated that a statistically-significant correlation would be measured between assessments of parental anxiety and the EI scores of the sample parents’ children. By administering EI tests to Grade 10 students (from which sample items may be viewed in Appendix A) and trait anxiety assessments to their parents (from which sample items may be viewed in Appendix B), the research undertaken for this thesis proposed to elucidate a statistically-significant relationship between parental trait anxiety and an impaired development of EI in their children wherein higher levels of parental trait anxiety would be negatively correlated with the children’s EI scores.

This relationship was tested through the use of a Pearson’s correlation where \( H_0 \) was that parental trait anxiety had no effect or a positive effect on the development of children’s EI (\( p \geq 0 \)) and \( H_1 \) was that parental trait anxiety negatively affects the EI of children (\( p < 0 \)). It was expected that the correlation for \( \alpha = .05 \) would be negative and indicative of a trend of decreasing EI in children as parental trait anxiety increased. It was expected that this trend would hold not only for overall measurements of EI (Total EI) but also for each of the five other individual scales that made up the assessment: Intrapersonal EI, Interpersonal EI, Stress Management, Adaptability, and General Mood.

In addition to the trait anxiety assessment, parents were asked to complete a demographic questionnaire (Appendix C), and an observer’s form to report on their perception of their children’s EIs (see Appendix D for sample items). A Pearson’s correlation was performed between the observer and the student EI measures wherein \( H_0 \) was that the parental reports and the student reports were unrelated (\( p = 0 \)) and \( H_1 \) was that
parental reports of their children’s EIs and those children’s self-reports vary together in a statistically-significant way ($p \neq 0$) for $\alpha = .05$.

Using the information gathered from the demographic questionnaire, either independent $t$-tests or independent-sample analysis of variance (ANOVA) tests were used to measure differences in trait anxiety levels of the parents and EI abilities of the students between and among categories within various demographic groupings such as gender, age, and education level of the parent respondents. Two of the demographic categories, gender and parental employment field, had only two categories. As such, independent $t$-tests were used to find any statistically-significant differences in STAI or EQi:YV scores based on those categories. For these tests, $H_0$ was that the mean level of trait anxiety or EI did not differ between the two groups ($\mu_1 = \mu_2$) and $H_1$ was that mean trait anxiety or EI levels were not the same for all groups within a given demographic category ($\mu_1 \neq \mu_2$). For the rest of the demographic data, ANOVA was used, where $H_0$ was that the mean level of trait anxiety or EI did not differ between the groups within the demographic category ($\mu_1 = \mu_2 = \ldots = \mu_n$) and $H_1$ was that mean trait anxiety and EI levels were not the same for all groups within a given demographic category (i.e., that there would be a statistically-significant difference between the means of at least two of the groups). For both the $t$-tests and each ANOVA test, an $\alpha$ value of .05 was used.

In addition to these ANOVA tests, information collected in the *Parenting Trends* section of the demographic survey was also subject to statistical analysis. Using questions based on the informal helicopter parent quizzes that may be found associated with a variety of college preparation websites (*Helicopter parent quiz*, n.d.), each parent was asked to estimate the frequency (i.e., always, sometimes, or never) with which they engaged in
behaviours and/or attitudes that could be considered consistent with hyper-parenting trends. It was hypothesised that those parents who answered “always” or “sometimes” to one or more questions, would have different mean trait anxiety scores and children with different mean EI scores on one or all of the variables than those parents who answered “never”. These relationships were again tested using independent-sample ANOVA, wherein, for the trait anxiety measures $H_0$ was that the mean level of trait anxiety did not differ between parents who had answered “always”, “sometimes”, or “never” ($\mu_1 = \mu_2 = \mu_3$) and $H_1$ was that mean trait anxiety levels were not the same for each answer (i.e., that there would be a statistically-significant difference between the means of at least two of the groups). For the EI measures, $H_0$ was that the mean EI score on each of the scales did not differ between children of parents who had answered “always”, “sometimes”, or “never” ($\mu_1 = \mu_2 = \mu_3$) and $H_1$ was that mean EI scores were not the same for each answer (i.e., that there would be a statistically-significant difference between the means of at least two of the groups). For each ANOVA, $\alpha$ was again set at a value of .05.

In order to test the relatedness of parental trait anxiety and adolescent emotional intelligence to the various indicators of family togetherness, Pearson’s correlations were again performed. The parental STAI results and the student EQ-i:YV results were compared to the participants’ indicated numbers of meals shared per week, activities shared per week, and time spent together during the week and during the weekends. For each of the four correlations between the STAI data and the indicators of time, $H_0$ was that the STAI scores and the amount of time students and parents spent together would be unrelated or directly related, so that as one variable increased, so did the other ($\rho \geq 0$) and $H_1$ was that the parental STAI scores would be inversely related to the amount of time that parents and
children spent together ($\rho < 0$) for $\alpha = .05$. Predictions for the relationships between the adolescent EI scores and the various measures of time together were opposite those for the STAI data. For each of the four correlations between the EQ-i:YV data and the indicators of time, $H_0$ was that the EQ-i:YV scores and the amount of time students and parents spent together would be unrelated or inversely related, so that as one variable increased, the other decreased ($\rho \leq 0$) and $H_1$ was that the adolescent EQ-i:YV scores would be directly related to the amount of time that parents and children spent together ($\rho > 0$) for $\alpha = .05$.

**Definition of Terms**

Affect: refers to the way a person manifests his or her experienced emotions. It is the set of behaviours and reactions that are displayed by a person upon his or her experiencing emotion.

Anxiety: generalized fearfulness. Whereas fearfulness is generally a result of something specific that poses a real threat to a person, anxiety, although capable of invoking a similar physiological response, occurs without the presence of any real threat.

Emotional intelligence (EI): initially defined as “the subset of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and actions” (Salovey & Mayer, 1990, p. 189), Goleman (1995), expanded the definition of EI to include skills and traits such as competence, zeal, persistence and self-control. It was further expanded by Bar-On and Parker (2000) who suggested that EI is primarily a dispositional construct that encompasses cognitive, personality, motivational, and affective attributes.
Hyper-parenting: first described by Rosenfeld and Wise (2000), hyper-parenting is a particular type of parenting in which parents are preoccupied with micro-managing their children in an effort to help those children live up to their presumed potentials and, as much as possible, avoid having them experience failure or disappointment.

Parental affect: parents' expressions of mood and emotion towards their children.

State anxiety: situational anxiety. As opposed to trait anxiety, which is related to the personality trait of neuroticism, state anxiety is that which is experienced in response to a particular situation and is generally of a short-term duration. "Test anxiety" would be an example of state anxiety.

Trait anxiety: as described by Spielberger (1983), trait anxiety is a personality trait characterized by a relatively stable tendency to perceive situations as dangerous or threatening and respond with elevated levels of state anxiety. Unlike state anxiety which is situation-specific, the negative mood states inspired by trait anxiety are continuous and nonspecific and generally do not lead to clinically-significant distress or impairment.

Chapter Summary

In much of the current literature surrounding anxiety, the focus has turned to the effects of anxiety on and within the family unit. Whether delineating the positive and ameliorative effects that alleviating parents' anxiety has on the anxiety experienced by children in stressful situations (Clinch & Dale, 2007; Dahlquist & Pendley, 2005; Li, Ji, Qin, & Zhang, 2008), or tracing the transmission of anxiety between generations (Barlow, 2002), it is unusual to find a family situation that is unaffected by a parent's anxiety, even if the anxiety is minimal (West & Newman, 2003). Although related concepts such as
Parental Trait Anxiety and Adolescent EI

behavioural inhibition have been connected with parental anxiety (Kagan, 1994; Muris et al., 2010), the possibility of a link between parental anxiety and compromised EI in children appears not to have been tested. This thesis attempted to provide a tentative first foray into the testing of such a possibility.

This study aspired to find a link between parental anxiety and the development of EI in children, as measured in adolescent Planning 10 students, hypothesizing that higher levels of trait anxiety in a parent would correlate negatively with the EI levels of those students. In addition to testing the possibility of a correlation between parental anxiety and adolescent EI, the possibility that anxiety and EI measurements differ between parents and students according to a number of different demographic categories was also explored. Finally, the relationship between student EI and time spent with the parent/caregiver; student EI and parenting attitudes; caregiver/parental anxiety and time spent with the student; or caregiver/parental anxiety and parenting attitudes was examined.

Chapter 2 of this thesis will be a review of the literature that is pertinent to this research; either for its discussion of EI or for its discussion of anxiety. Chapter 3 will describe further the methods used in the commission of this research, and Chapter 4, the results of that methodology. Chapter 5 of this thesis will be a discussion of the findings presented in the previous chapter. The final chapter, Chapter 6, will present conclusions and further directions that arose as a result of this research.
Chapter 2 – Literature Review

Whereas the preceding chapter introduced the rationale behind examining the link between parental trait anxiety and emotional intelligence (EI), revealed the hypotheses used to test that link, and defined the key terminology, this next chapter will now provide some background information for the current research.

By exploring the extant literature on both anxiety and EI, this chapter will make links between those two constructs to suggest the viability of a more direct connection between the two. To establish these links, first the meanings of both EI and anxiety as they are used in this research will be more completely defined. Next, the effects of parental anxiety as they relate to attachment and parenting behaviours will be delineated, followed by a related exploration of factors influential in the development of EI. Finally, implications regarding the importance of EI will be surveyed, and the background of the selected assessments will be given. The proposed place of the current work will be presented throughout the chapter.

Definition of Emotional Intelligence

Upon reviewing the extant literature, it became clear that a precise definition of EI is still very much under debate between two leading schools of thought: one who favours an ability-based model (Salovey & Mayer, 1990; Zeidner, Matthews, Roberts, & MacCann, 2003; Zeidner, Matthews, & Roberts, 2009) and one who favours a mixed model that incorporates both abilities and personal qualities (e.g., Bar-On & Parker, 2000; Eastabrook, Duncan, & Eldridge, 2005; Goleman, 1995; Wood, Parker, & Keefer, 2009). While the two models are aligned in their attempts to measure and quantify how people achieve productive social engagement (Zeidner et al., 2009), they differ greatly in their conceptions of how
Parental Trait Anxiety and Adolescent EI

exactly such measurements might best be interpreted. Trait EI, not to be confused with trait models of EI, is a third model of EI described by Zeidner et al. (2009) and is not included in this discussion as minimal reference to it was found during the commission of this literature review. This omission in the literature is likely because it is a more recent conceptualization of EI and so has not yet provoked a volume of research comparable to that of the two other models.

Originally, EI was conceptualized as a measurement of ability. Salovey and Mayer (1990) initially identified and defined the concept of EI as "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p. 189, emphasis in original). Goleman (1995), generally credited with introducing the term to the public and moving it into the common lexicon (Zeidner et al., 2009), expanded the definition to include a wider range of skills and traits including competence, zeal, persistence, and self-control. Bar-On and Parker (2000) supported this definition and suggested that EI is primarily a dispositional construct that encompasses cognitive, personality, motivational, and affective attributes. This latter model is generally considered to be a mixed one as it conceptualizes EI as a series of skills that are not always considered to be related to emotional functioning in the strictest sense but rather include features often otherwise ascribed to aspects of personality or social functioning (Ciarrochi, Chan, & Caputi, 2000; Fiori, 2009; Mayer, Caruso, & Salovey, 2000a; Zeidner et al., 2009).

This mixed model of EI is in contrast to the model proposed by Salovey and Mayer (1990) wherein the scope of EI is limited solely to abilities at perceiving, assimilating, comprehending, and managing emotions. It is this model that has been tested and found to
meet the criteria for a form of intelligence as it can be readily assessed through the use of ability tests, is related to and yet distinct from verbal intelligence, and has been shown to increase as a person ages, all of which are considered characteristics of an intelligence (Mayer et al., 2000a).

For the purposes of this research, the broader definition espoused by Goleman (1995) and Bar-On and Parker (2000) was utilized, in that EI was understood to include cognitive, personality, motivational, and affective aspects. This model encompasses the traits most widely acknowledged as being related to emotionally-intelligent functioning and includes additional items that may also be impacted by parental anxiety, the primary interest of this study. The less-specific nature of this mixed model supported this study’s proposed research because it allowed for a wider variety of factors to be examined for possible anxiety-induced effects. As it was unclear what aspects of emotional intelligence were most likely to be prone to anxiety-induced modifications, it was of value to test a broad range of variables in order to more effectively narrow the scope of future research. Upon the commencement of this research, it was anticipated that, were it indicated that the ability-type aspects of EI were most strongly related to variation in parental anxiety, it would be feasible that later studies might justify the use of an ability-based assessment such as the MSCEIT as well as qualitative investigation in further testing the association between parental anxiety and the development of EI in children.

**Definition of Anxiety**

Anxiety is generalized fearfulness. A distinction may be made between the states of fearfulness and anxiety by noting that the former is generally a result of something specific that poses a real threat to a person while the latter, although capable of invoking a similar
physiological response, occurs without the presence of any real threat. In everyday life, anxiety generally serves to heighten a person's awareness of possible threats in new or unfamiliar situations and as such serves as a useful adaptive response in the service of self-preservation. However, when anxiety is constantly present and of a high intensity, it may then lead to an anxiety disorder that, according to the American Psychiatric Association (2000), could be some of the most frequently-occurring emotion-related disorders. This category of anxiety disorders includes panic, agoraphobia, post-traumatic stress disorder, simple and social phobias, generalized anxiety disorder, and obsessive-compulsive disorder. According to Barlow (2002), anxiety disorders represent the single largest mental health problem in North America. Because anxiety disorders are so prevalent, it is important to map their effects in order to provide relief for those people that are dealing with them and minimize the additional negative effects that may be visited upon the family and friends of the afflicted. In the case of children whose emotional and psychological selves are in development and especially susceptible to parental influence, it is particularly important to try to control for the effects of an anxious caregiver in order to help prevent the child from becoming similarly afflicted.

Though a significant portion of the extant literature on anxiety investigates causes and effects of anxiety disorders, this research assessed parent participants solely for trait anxiety. As described by Spielberger (1983), whose anxiety assessment was used to carry out the research for this thesis, trait anxiety is a personality trait characterized by a relatively stable tendency to perceive situations as dangerous or threatening and respond with elevated levels of state anxiety. Unlike state anxiety, which is situation-specific, the negative mood states inspired by trait anxiety are continuous and nonspecific and generally
do not lead to clinically-significant distress or impairment. This condition is in contrast to anxiety disorders, such as specific phobias, wherein the complainant is most definitely distressed and impaired by his or her anxiety. The scope of this research encompassed only the lower-level experience of trait anxiety, not the more intense experience of an anxiety disorder.

This literature review is a general overview of the various effects that have thus far been ascribed to children's experiences with caregivers' anxiety. While many of the parental anxiety studies reviewed herein involved parents with an anxiety disorder, there have been suggestions that even low levels of parental anxiety can influence children's personality development. For instance, West and Newman's (2003) findings suggested that even mild levels of anxiety appear to be related to children having a "more difficult interpersonal style of behaviour" (p. 150). As even low levels of anxiety may be influential, it was justified that the caregivers participating in this study were not assessed for an anxiety disorder.

**Effects of Parental Anxiety**

There is a sizeable body of research that looks at the effects that parents' anxiety has on children undergoing medical procedures (Clinch & Dale, 2007; Dahlquist & Pendley, 2005; Li et al., 2008). In this context, there have been numerous reports indicating that the management of parental anxiety on the part of medical staff results in a lessening of trauma for the child. The studies examined suggested that the mechanism for this alleviation relies on the ability of the parents' emotional state to influence that of the child to such a degree that the child's physiological responses are induced to follow those of the parent(s). As these medical research findings suggested, alleviating parents' anxiety affected the anxiety
experienced by children (Clinch & Dale, 2007; Dahlquist & Pendley, 2005; Li et al., 2008). Consequently, it is of relevance to refer to these types of studies when considering the applicability of working to reduce parent anxiety under other, non-medical, circumstances.

Outside the medical community, the relationship between parental anxiety and the subsequent development of anxiety-related disorders in children has been extensively examined. Tronick (2007) noted that little was known about the effects of anxiety on infant functioning, but that the little research that had been conducted strongly suggested that it had a significant developmental effect on children, similar to that noted for the more widely-studied experience of maternal depression. The remainder of this section will focus on the research that has been performed to connect the effects of caregivers' anxiety and children's developments and does not include any discussion of the effects of maternal depression, even though, in psychological terms, the concepts of anxiety and depression are closely related.

Turner, Beidel, and Costello (1987) reported that children of parents with an anxiety disorder are themselves seven times more likely to develop a similar disorder than those children with non-anxiety-disordered parents. More recently, Biederman et al. (2006) confirmed this association between specific anxiety disorders in parents and the development of other specific (occasionally identical) disorders in children. It is not unlikely that if a parent suffers from an anxiety disorder, his or her children are significantly more likely to be depressed or anxious themselves, particularly if it is the mother who is anxious (Kertz et al., 2008). Much recent research has been devoted to the identification of methods of transmission of anxiety from parent to child but even so, the exact mechanism for this observed relationship is still under debate, with those links already made being
tentative at best. It is most likely that parents pass on their anxiety in a number of ways: through genetics (see Barlow, 2002); the reinforcement of anxious behaviours through parenting practices, whether done purposely or inadvertently (Fonagy, 2001; Hart, 2011; Hughes, 2009; Woodruff-Borden, Morrow, Bourland, & Cambron, 2002); and the modelling of anxious behaviours (Saarni, 1999). Each of these factors has the potential to influence a child’s emotional development.

Influences of the Parent-Child Relationship

While there is not any one single factor that may be identified as being of greater importance than others, when considering what may be influential in children’s developments, there are many connections that can be made between those developments and children’s relationships with their parents. This section will explore many of the factors that are related to this parent-child relationship.

Genetics. That at least some aspects of anxiety are heritable and tend to run in families is a fairly safe conclusion to make as various studies have found genetic evidence to support it. Barlow (2002) described numerous studies that implicate the role of genetics in the predisposition of a person to the eventual development of an anxiety disorder but acknowledged that, while the existence of such a predisposition has been theorized to stem from factors such as specific autonomic nervous system traits or hyperactivity of various brain-regulated systems under certain conditions, exact mechanisms or genetic components have yet to be mapped. Beyond acknowledging that it exists, the role of heritability is beyond the scope of this study as this work is concerned not with the development of childhood anxiety but with the possibility that anxiety on the part of the parents may manifest in part as an emotional disorder that negatively affects the EI of children. The
possible influences of epigenetics aside, this research looked only at aspects of parental anxiety that could potentially be modified and left genetics aside.

**Attachment.** While the influence of genetics in the development of a child’s emotional life cannot be manipulated, early life experiences leading to the attachment bonds that cement the parent-child relationship can be. As conceptualized by Bowlby (1982/1988), “attachment behaviour is any form of behaviour that results in a person attaining or maintaining proximity to some other clearly identified individual who is conceived as better able to cope with the world” (p. 26). As initially described by Ainsworth, Blehar, Waters, and Wall (1978) on the basis of their Strange Situation experiments, attachment relationships are characterized as either secure or insecure and those attachment relationships classified as insecure may be either of an anxious/avoidant or anxious/resistant nature.

The categorization of an infant as insecurely attached depends largely on the infant’s reactions to separation from his or her primary caregiver. When distressed, securely attached infants seek out closeness with their caregivers and allow themselves to be comforted upon establishing that contact. During Ainsworth and her colleagues’ Strange Situation experiments, these infants were those who explored freely in the presence of their caregivers, became distressed upon separation from their primary caregivers in the presence of a stranger, but allowed themselves to be comforted upon being reunited with their caregivers. Whereas securely attached children try to maintain contact with their caregivers in order to minimize the anxiety caused by separation, anxious/avoidant infants appear to be made less anxious upon being separated from their primary caregivers and may appear disinterested in them upon reunion. Anxious/resistant infants, in contrast, may become
inconsolable upon separation and have a hard time settling down even when reunited with the caregiver.

An additional category of attachment behaviour, disorganized/disordered, was identified by Main and Solomon (1990), based on various researchers' observations that not all infants fit the three organized attachment patterns observed and named by Ainsworth et al. (1978). Infants characterized as having disorganized attachments may exhibit seemingly nonsensical behaviours whether their caregivers are present or not. This may include freezing and entering a trance-like state, falling huddled to the floor, or putting their hands into their mouths and hunching their shoulders in response to their parents' return after a short absence (Lyons-Ruth & Jacobvitz, 2008). This last style of attachment is often of especial interest to mental health professionals with access to such information as “disorganized attachment behavior is one of the few predictors of later psychopathology that have been identified as early as infancy among biologically normal individuals” (Lyons-Ruth & Jacobvitz, 2008, p. 689) even though, as cautioned by these same researchers, it is likely that the development of a disorganized style of attachment serves some sort of adaptive function for the children who develop it.

Regardless of the ultimate style of attachment, these patterns of attachment generally develop as characteristic patterns of behaviour learned in response to a child's experiences seeking out and preserving closeness with a caregiver. By developing secure attachment relationships during the first year of life, infants are supported and externally regulated by their attachment figures as they begin to learn to cope with strong emotions and stressful events (Ainsworth et al., 1978). The basis of attachment theory is that these relationships with caregivers form the basis for children's later relationships and also strongly influence
the children’s developing sense of self (Bowlby, 1969/1982); factors that shape and are shaped by the development of these bonds are still under investigation.

The neurological and physiological reactions involved in and triggered by the formation of the bonds critical to a secure attachment relationship were described at length by Schore (1994) who, based on his exhaustive review of relevant research up to the mid-1990s, affirmed the importance of a child’s social matrix on the structural development of his or her brain. Schore’s extensive summary of neurological development highlighted the importance of the presence of an emotionally-present caregiver in order to guide the development of appropriate emotional regulation on the part of the offspring. He asserted that it is both the child’s experience of a caregiver’s affect and the observation of a caregiver’s response to it that help the child to regulate his or her own emotional state and that “early affective experiences critically and permanently influence the development of the psychic structures that process unconscious information” (p. 280).

The central thesis of Schore’s work was the staggering importance of a parent’s responsiveness to a child. As noted by Field (1994), it is not enough that a caregiver is physically available, they must be emotionally available as well; the absence of the primary caregiver, whether physical or emotional, results in disturbances in an infant’s affective, motor, biochemical, and physiological function. If a caretaker’s responses are inadequate or the child’s interactions with that person are scarce or lacking, it is possible that the child’s emotional abilities will be negatively impacted due to what Schore referred to as a lack of suitable neural substrate on which to build, referring primarily to the possibility that, without the development of fundamental neurological structures and socio-emotional abilities meant to arise naturally out of the interplay between a child and caregiver within
the bonds of a secure attachment relationship, the necessary foundation for later emotional developments would be compromised. With each description of a developmental feat, Schore’s work further called attention to the importance of a strong attachment to a caregiver. He emphasized that it is these experiences with caregivers that give a child raw material for building an internal working model of his or her self in order to begin to figure out how he or she fits in with the surroundings. As described by Karen (1998), a primary caregiver (generally the mother) serves as a lattice on which much of a child’s mental organization develops, scaffolding his or her own growth and learning on the examples provided by the caregiver. He posits that, inasmuch as it affects the infant’s quality of care, an anxiety-prone caregiver may result in attachment being compromised as a result of his or her emotional unavailability. This unavailability has often been categorized as parental behaviour that is either frightening to or connected to fright of the infant for which the caregiver (usually the mother) is responsible. Main and Hesse (1990) hypothesized that disorganized attachment is related to parental fear that has been transmitted to an infant and frightening behaviour in particular has been implicated in the development of disorganized attachment (David & Lyons-Ruth, 2005; Out, Bakermans-Kranenburg & van IJzendoorn, 2009; Schuengel, Bakermans-Kranenburg, & van IJzendoorn, 1999; Schuengel, van IJzendoorn, Bakermans-Kranenburg, & Blohm, 1998). Whether externalized in a frightening or a withdrawing way, the interaction of an anxious mother and her infant shapes the patterns of communication between that dyad at the same time as the attachment relationship is negotiated, with each influencing the other. Bowlby (1969/1982) stated that an individual’s sense of security in himself/herself as a person is derived from early experiences with an accessible and responsive caregiver; these early patterns of interaction
are then perpetually re-enacted in other close relationships as children learn how to apply the patterns originally learned from parents in new and unfamiliar situations. As posited by Main and Hesse (1990), interactions with a caregiver that are frequently marked by frightened or frightening behaviours from that caregiver may prevent children from ever learning a predictable pattern of attachment through which they might learn to relate to their caregivers as “they cannot find a solution to the paradox of fearing the figure whom they must approach for comfort in times of stress” (Lyons-Ruth & Jacobvitz, 2008, p. 675), a potentially disorganizing experience for children that may be reflected in their attachments.

**Infant-caregiver communication.** A substantial body of research exists linking the quality of the infant/parent attachment relationship to lifelong adaptive abilities (Hill, Fonagy, Safier, & Sargent, 2003). In particular, maternal anxiety might negatively affect attachment-promoting behaviours such as those originally described by Bowlby (1969) who proposed that the internal working models that developed out of these first attachment relationships provided a prototype for all subsequent relationships. Indeed, when infants are required to cope with a parent’s chronic anxiety, they display distinctive behaviours in their attempts to develop and maintain the aforementioned closeness as was demonstrated in part by the famous “still face” experiment (Tronick, Als, Adamson, Wise, & Brazelton, 1978). The behaviours utilized by the six-month-olds as they attempted to connect with their unresponsive mothers during this experiment were found to be indicative of a persistent pattern of interaction. This persistence was demonstrated in 1991 by Cohn, Campbell, and Ross who noted that the methods used by the infant still face participants were predictive of those infants’ attachment styles when they were a year old.
More recently, atypical patterns of infant-caregiver communication have been noted by a variety of researchers investigating the interactions between anxious mothers and their babies. In their review of the literature exploring the possible effects of maternal anxiety (a review during which they admitted to extrapolating in part from the more plentiful body of depression research), Kaitz and Maytal (2005) suggested that infants with anxious mothers are likely to be less involved and more distressed during mother-infant interactions. Kaitz and Maytal (2005) noted that the effects of maternal anxiety are not uniform across samples and conditions and posited that the infants’ distress could be a reaction to a history of insensitive and emotionally-withdrawn care from the mother, a situation leading to dysregulation of the child as a result of being left to his/her own coping devices without a dependable external regulator. When Schmucker et al. (2005) examined a sample of 79 preterm and 35 full-term infant-mother pairs, they found that the more anxious a mother was, the less facially responsive to her was her infant child. More recently, Beebe et al. (2011) observed 119 mother-infant pairs and found that those mothers who self-reported significant levels of anxiety on the STAI assessment (the trait anxiety scale of which was also used for this research), demonstrated atypical patterns of mother-infant interaction. While watching them interact with their infants while under observation, the researchers characterized the general demeanour of the mothers with anxiety symptoms as “over-aroused/fearful, leading to vigilance, but dealing with their fear through emotional distancing” (p. 174). While attachment was not explicitly quantified, it was noted that the mother-infant dyads’ patterns of interaction generated what the researchers termed a “mutual ambivalence” towards each other; it is possible that this mutual ambivalence might then be an early indication of a disordered style of attachment. In particular, this
observation could partially explain Manassis, Bradley, Goldberg, Hood, and Swinson's (1994) finding that 13 out of a sample of 20 children with anxiety-disordered mothers were classified as having a disordered style of attachment. All things considered, it now appears to almost be a foregone conclusion that infants are negatively impacted by their parents' inability to effectively regulate their own emotional affect, the mechanisms behind this influence, however, are still very much under investigation. Whatever the pathway, it is likely that parental mentalization capability and sensitivity, as indicated by those caregivers' abilities to reflect on their infants' internal experiences and respond to them, is involved (Fonagy, 2001).

Mentalization. The interference of a parent's anxiety in his/her communication and relationship with his/her children is supported by the work of Arietta Slade (Slade, 2005; Slade, 2007) who has researched the places of mentalization and reflection in parenting. This work is based on that of Peter Fonagy who has examined the importance of mentalization in the development of human consciousness (Fonagy, Gergely, Jurist, & Target, 2002) and its applicability to psychotherapy in particular (Fonagy, 2001). Mentalization is the ability to "read" other peoples' minds in order to predict what their perceptions or experiences of a given situation might be and make their behaviours meaningful and predictable (Fonagy et al., 2002). In their work on parental reflective functioning, Slade and her colleagues described and quantified the effects that an emotionally-unavailable or non-reflective mother can have on her children (Grienenberger, Kelly, & Slade, 2005; Slade, 2005; Slade, Grienenberger, Bernbach, Levy, & Locker, 2005). By examining the capacity of a parent (typically the mother) to speculate on the mental state of her child and, just as importantly, to hold that conjectured state in her own
mind when working out how to act, these same researchers found that the more that the parent was able to envision mental states in herself or the child, the greater the sensitivity of the resultant parenting and the greater the likelihood that the child was securely attached (Slade et al., 2005). Slade (2005) stated that the mother that is able to "hold in her own mind a representation of her child as having feelings, desires, and intentions allows the child to discover his own internal experience via his mother's representation of it" (p. 271), and thus provides a partial mechanism for the child's learning of affect regulation. This mechanism builds somewhat on the work of Siegel and Hartzell (2003), who recognized that self-awareness on the part of a parent provided that parent with the ability to choose a greater range of responses when reacting to a child's behaviour and was an important factor in the maintenance of connections and open, respectful communication within families.

In their review of the research on mentalization, Fonagy, Gergely, and Target (2007) suggested that maltreatment, such as that which might occur, however, unintentionally due to anxiety, "deprives children of the attuned mutual engagement focused around internal states that may be critical for the development of mentalization, leading to developmentally critical delay" (p. 306) that could affect those children's abilities to negotiate social interactions. It is feasible that this impaired ability would then also be indicative of lowered EI. Based on their research, Fonagy and his colleagues (2007) suggested that the mechanism for this connection is related to a reduction of open, reflective communication between the child and parent; a reduction by which the parent's credibility in linking internal states and actions is compromised.

Caregiver attunement and sensitivity. While not specific to caregiver anxiety, there is evidence that too much or too little interaction between an infant and his or her caregiver...
leads to a disordered style of attachment (Belsky, 2005). Investigating what he termed the "ecology" of attachment, Belsky postulated that "contextual stresses and supports affect the sensitivity of maternal care, which affects emotional and temperamental development, which affects whether or not the child develops a secure attachment" (p. 89). Consistent with a developmental view of attachment used by others such as Fonagy (2003) and Slade (2007), Belsky suggested that the development of one attachment style over another occurs in response to information about the prevailing contextual conditions of a child’s social world; information acquired from parents based on the type and quality of care they provide the developing child. Without any mitigation of or control for his/her anxiety, an anxious parent’s perception and interpretation of the world would likely be affected, as would the resultant interpretation of that world for the developing child. It is possible that an anxious parent then might also provide a different standard of care for his/her child and, in doing so, could affect the type or quality of that child’s attachment relationship with that anxious parent.

In a more recent work, Belsky and Fearon (2008) cited six separate studies that implicated the role of either an intrusive, excessively stimulating, controlling parenting style or an unresponsive, under-involved style in the development of disordered attachment (see Belsky, Rovine, & Taylor, 1984; Isabella, Belsky, & von Eye, 1989; Lewis & Fiering, 1989; Malatesta, Grigoryev, Albin, & Culver, 1986; Vondra, Shaw, & Kevinides, 1995 as cited in Belsky & Fearon, 2008). This finding was supported by van IJzendoorn and Bakermans-Kranenburg’s 2004 meta-analysis wherein they concluded that “the causal role of maternal sensitivity in the formation of the infant-mother attachment relationship is a strongly corroborated finding” (p. 208). Based on these collective observations, it seems
likely that it is in negotiating the level of interaction as well as in the quality of interaction
that parental anxiety may have a negative effect on attachment, a possibility supported by
Karen (1998) and Goleman (2006) who posited that mothers who are anxious tend to be less
attuned to their children’s needs, leading some children to then become more anxious and
clingy themselves and less able to attune to others in the future. The observation that
anxiety-disordered parents interact less frequently with their children than non-anxious
controls may also negatively influence the attachment relationship with their children
(Woodruff-Borden et al., 2002).

Of special interest to this study examining the possibility of a link between parental
trait anxiety and the development of EI in children was the prospect that high levels of EI
are positively related to secure attachment. Grossmann, Grossmann, Kindler, and
Zimmerman (2008) suggested that secure attachment leading to secure exploration
empowers children to enjoy challenges, better tolerate frustration, and more readily develop
appropriate social skills, all aspects of EI as measured by the EQ-i:YV (Bar-On & Parker,
2000). The possibility of a connection between attachment and EI was also suggested and
observed by Hamarta, Deniz, and Saltali (2009) and Kafetsios (2004) and makes
attachment’s role doubly important to the results of this research as it appears to be
complicit in both the observed effects of parental anxiety on children and the development
of EI in children. Perhaps Zeidner et al. (2003) summed it up best when they stated that
“[while] biology predisposes individual differences in emotional behaviours, the nature of
these behaviours, the situations that elicit them, and their modes of expression, remain
largely dependent on an elaborate set of social and environmental factors” (p. 78). This
union of biology and personal experience, mediated for the youngest children especially
through the bonds of attachment, interact in as-yet unknown ways to produce emotionally-intelligent behaviours, leaning increasingly towards the socially-influenced attributes rather than the biological the older the child gets (Zeidner et al., 2003).

**Parenting Practices**

Besides providing a secure base from which to explore, a sensitive and attuned caregiver also provides guidance and support for a child’s developing sense of self (Fonagy, 2001; Hart, 2011; Hughes, 2009). This supportive role is also accomplished through various parenting practices (referred to as such regardless of the actual relationship of the caregiver to the child) that have been studied and identified as negatively impacted by a caregiver’s anxiety. Woodruff-Borden et al. (2002) posited that, as a result of having had little assistance in learning to cope with stressors, children of anxious parents would be less prepared to effectively deal with stressful situations. To reach this conclusion, the team assessed 57 parent-child dyads using both surveys and observational techniques wherein the pairs had to complete two tasks together. Of this group, 25 of the participating parents met criteria for an anxiety disorder. The parents in this group differed significantly from those in the non-anxious control group on three particular behaviours: they agreed less with their children, they praised their children less, and they ignored their children more. Overall, the clinical parents were observed to be significantly less productively engaged and significantly more withdrawn than those without a diagnosis during the completion of specific tasks with their child, essentially leaving the child without a strong, positive role model to emulate.

Rutherford’s (2003) research supported the idea that anxious parents may hamper the ability of their children to develop a sense of mastery and capability, key aspects in
learning to cope with stress as well as in the acquisition and measurement of EI. Interestingly, no differences in levels of control were found between the two groups of parents in the study done by Woodruff-Borden et al.; participants in both were observed to take charge if the child displayed negative emotion. As is the case with many of the studies on parental anxiety reviewed in the commission of this literature review, small sample size was a limitation with both Rutherford’s and Woodruff-Borden et al.’s research. In the case of the latter study in particular, the small sample size prevented the exploration of meaningful differences in interactions of parents with differing anxiety disorders.

**Parental expectations.** One aspect of parent-child interaction that was not examined by either Woodruff-Borden or Rutherford was the influence of parental cognitions and/or expectations during the activities they were asked to try with the children. Parental expectations regarding their children’s temperament and/or mood have been observed to influence the subsequent amount of parental involvement in a shared task (Cresswell, O’Connor, & Brewin, 2008). Presumably, those children perceived by their parents to be less anxious received less parental input under the assumption that they could capably handle whatever levels of frustration a task might engender, facilitating a reduction in parental anxiety in the process. Research like that of Wheatcroft and Cresswell (2007) suggested that parents who expect their children to be anxious have anxiety themselves because of these expectations, an observation that the researchers made after administering questionnaires to 104 parents of 3-5 year olds. By having the parents answer questions about their own anxiety, their children’s anxiety, and their cognitions around the level of control they had over their children’s behaviour and their children’s expected responses to distress, Wheatcroft and Cresswell determined that the parents’ perceptions of control and
expectations for their children arose more as a result of their own anxiety than that of their children, even though they characterized their children as anxious. Additionally, the parents in this study perceived that they had little to no control over their children’s anxiety, which also served to increase their own feelings of anxiety. This particular piece of research emphasizes the possible role of parental perceptions and cognitions in the development of childhood anxiety, although, as the children were not themselves assessed for anxiety, the influence of children’s temperaments cannot be known for these results.

Assuming that parental cognitions do contribute to childhood anxiety as proposed by Wheatcroft and Cresswell (2007), it may be possible to help mitigate some of the increased control that caregivers may try to exert out of feelings of powerlessness by working to deal with these beliefs on the part of the parent. As overcontrolling parental patterns have been found to be significantly associated with increased anxiety in children (Rapee, 1997; Wood, McLeod, Sigman, Hwang, & Chu, 2003), it is important to recognize and address these tendencies to help parents rear emotionally healthy children. The work related to the influence of parental anxiety on cognitions regarding their children supports the research done by Cobham, Dadds, and Spence (1999) who found that anxious mothers were more liable to expect their children to choose avoidant solutions when asked to work through ambiguous situations. Gallagher and Cartwright-Hatton (2009) also did research in this sphere and recently proposed that anxiety on the part of a parent causes them to perceive child-rearing cognitions that might otherwise be neutral as potentially distressing and to act in a more intrusive manner as a result. It is possible that these expectations serve to support the development of an anxious style of cognition on the part of the child, possibly setting
him or her up for a decreased capacity to cope with ambiguous situations and a commensurate lowering of EI.

**Interventions to reduce the effects of parental anxiety.** Just as it has been observed and recorded as influential in the emotional development of children, it has also been noted that parental anxiety can be mitigated somewhat if the parents are diligent or willing to take part in specific interventions, although those considering this latter option must be cautious. As emphasized by Grienenberger in his 2012 keynote address at the Early Years Conference in Vancouver, BC, parenting-practice models often fail to address deeper issues of the parent/child interaction and may rely on too many prescriptive techniques that can undermine parents' processes of finding their own way with their own children and so may derail the natural process of learning the best ways of interacting with their own children in their specific dyads. While investigating effects of parental anxiety with African-American parent-child dyads, Ginsburg et al. (2005) observed that, while there was no significant difference in the anxiety levels of children of anxiety-disordered parents in the first grade, this was no longer the case once the children had reached the seventh grade. This observed trend was the result of a six-year longitudinal study involving 25 anxiety-disordered mothers, 25 mothers without any psychiatric illness, and both groups' children. By initially having the mother-child dyads engage in a challenging task together while under observation and then having both the parents and children complete measures of anxiety when the children were in the first and then again in the seventh grade, Ginsburg et al. were able to measure a variety of statistically-significant correlations between various parenting behaviours and child outcomes, although they found no differences in parenting behaviours between anxious and non-anxious mothers during the shared task. This lack of
difference might have had to do with the young age of the children; all of the parents may have been more prone to increased directive behaviours as a result of their children’s youth and inexperience so that no one person’s or group’s increased tendency to be overly controlling stood out.

Other factors suggested by Ginsburg et al. as possibly limiting the differences in parenting behaviours were: the severity and chronicity of maternal illness (mental or otherwise), access to and use of psychiatric treatment, and family context. This particular study did not measure or control for any of these factors and, as such, they cannot be ruled out as unimportant. While the researchers found no differences between the anxious and non-anxious mothers in the utilization of specific parenting behaviours during the task that the mothers and first-graders performed together, observers did note important differences in patterns of parent-child interactions during the task. Specifically, it was noted that the anxious mothers reacted to their children’s displays of anxiety or uncertainty with higher levels of intrusiveness (control) and hostility and lower levels of affection and encouragement. Ginsburg et al. hypothesized that it was these patterns that led to the increased anxiety levels of some of the seventh graders in the follow-up assessments. Interestingly, the researchers in this study observed that if the anxious parents granted their children a reasonable level of autonomy, the likelihood of those children developing anxiety was reduced. Parents who allowed their children more leeway, even if they suffered from an anxiety disorder themselves, had children who reported lower levels of anxiety in the seventh grade than those whose parents were more restrictive, indicating that it is not necessarily parental anxiety that negatively influences children, but specific behaviours that arise as a result of that anxiety.
Effects of a controlling parenting style. This link between parental control and childhood anxiety where parental anxiety is not necessarily a factor has been observed and studied elsewhere. Alfie Kohn (2005) decried the tendency towards severely controlling one's children and suggested that an overly controlling style of parenting may lead children to develop self-esteem that is contingent on others’ approval. In 1991, Krohne and Hock found that anxious children had parents that were less likely to allow or reward autonomy. They suggested that the likely result of this was a lessening of those children’s self-confidence and willingness to accept and attempt new challenges due to a diminished sense of self-efficacy. Using observational methods and children’s self-reports, Siqueland, Kendall, and Steinberg (1996) investigated if parents of anxious children acted differently than those without an anxiety diagnosis when undertaking a shared task with their child. Based on observer ratings, parents of anxiety-disordered children were characterized as less granting of autonomy, a finding supported by the observational methods used by Hudson and Rapee (2001).

Other similar research supporting a link between children’s anxiety and a restrictive style of parenting includes that of Chorpita and Barlow (1998) and Moore et al. (2004). Mofrad, Abdullah, and Samah (2009) also reported comparable results in their work examining children’s self-reports of anxiety and memories of their upbringing, as did Reitmann and Asseff (2010) who studied the parental control/child anxiety connection with university undergraduates. Similar to the research conducted by Chorpita and Barlow (1998), Rapee (1997) also performed an extensive review of the literature and supported the observation that parental control is complicit in the development of childhood anxiety. Each cites a variety of sources that suggest that children’s early experiences with
diminished control over their day-to-day choices are likely contribute to later feelings of helplessness and powerlessness. Wilde & Rapee (2008) found that those children whose mothers were instructed to be more controlling during preparation of a practice speech were later prone to greater anxiety than those whose mothers were more minimally involved, even though neither group of mothers was characterized as being overly controlling outside of the study. The suggestion that even such minimal instances of superfluous control have the possibility to affect a child’s mental state makes it even more relevant to explore the anxiety that may underlie those situations where excessive control may be endemic.

As described by Reitmann and Asseff (2010), the link between parental 'overcontrol' and the development of anxiety disorders in children raised under such a regime is one that may not necessarily exist only in anxiety-disordered caregivers. Even those parents who are not clinically anxious may negatively influence their children’s developments by their parenting choices and attitudes. For example, Reitmann and Asseff (2010) found a stronger relationship between university students’ perceptions of maternal control and those students’ anxiety levels than between the actual measurements of parental anxiety and student anxiety. There is, however, a significant body of research that does point to the complicity of anxiety in the disordered emotional development of children. Lindhout et al. (2006) found significant differences in the child-rearing style of anxiety-disordered parents and non-disordered controls, including a significantly greater incidence of overprotection. This work is aligned with the findings of previous studies (see e.g. Barrett, Rapee, Dadds, & Ryan, 1996) in that the anxious parents were found to utilize a less warm (nurturing) and more controlling (restrictive) style of childrearing as determined by self-reports from the parents. As the non-control parents in this particular study were
outpatients of a psychiatric facility and were already undergoing treatment for their anxiety disorders, the researchers ventured that the degree to which their anxiety affected their parenting was possibly already underreported due to improvements resulting from their outpatient work. Whaley, Pinto, and Sigman (1999) used observational methods to examine mother-child interactions during a variety of shared cognitive tasks and noted that anxious mothers granted less autonomy than the control mothers. In this case it was also observed that the anxious mothers tended to be more critical, controlling, and prone to catastrophizing and less warm and positive in their interactions with their children. These reports of a parenting style that is less nurturing and more controlling echo the memories of anxious adults asked to recall their parents’ styles of childrearing as reported by Gerlsma, Emmelkamp, and Arrindell (1990) who performed a meta-analysis of the literature on perceived parenting practices in depressed and anxious patients.

The Bidirectional Influence of Temperament and Anxiety

Many researchers have acknowledged the possibility that a parent’s style of childrearing and possibly even his or her anxiety may be a result of the child’s temperament rather than a cause. In his 1982 work, Bowlby himself pointed out that “[by] the time the first birthday is reached, both mother and infant have commonly made so many adjustments in response to one another that the resulting pattern of interaction has already become highly characteristic” (p. 348). Moore et al. (2004) found that mothers in general tended to be less warm with and more overprotective of their anxious children, regardless of their own level of anxiety. The researchers determined this by having 68 mother-child dyads engage in three taped conversational tasks followed by diagnostic interviews after the final task. The dyads were a mixture of anxious mothers and non-anxious children, non-anxious
mothers and anxious children, and anxious mothers and anxious children. Upon reviewing the taped conversations, the observation was made that the mothers’ treatment of their children was reliant on the children’s anxiety diagnoses rather than the mothers’, leading the researchers to posit that an anxious child may lead a parent to adopt anxiety-maintaining behaviours such as overprotectiveness whether or not the parent is prone to anxiety him or herself.

Regardless of the precipitating events, there is a growing body of evidence that points to the existence of a reciprocal relationship between child temperament and parenting practices: one that may both influence and be influenced by the child’s emotional development (see e.g. Boutelle, Eisenberg, Gregory, & Neumark-Sztainer, 2009; Coplan, Reichel, & Rowan, 2009; Whaley et al., 1999). As summarized by Strelau and Zawadzki (2010), “[trait] anxiety and temperamental constructs similar to anxiety may be considered as predispositions favouring the development of emotional disorders, but also the opposite may occur – emotionality disorders may trigger changes in temperament” (p. 2). For example, in preschool and elementary-aged children, shyness on the part of the child has been linked to increased anxiety and overprotectiveness on the part of the mother (Coplan et al., 2009; Rubin & Burgess, 2002). Coplan et al. (2009) came to this conclusion by asking 285 mothers of young children to complete self-report assessments of personality and parenting style as well as reports of child temperament. Analysis of these surveys revealed that maternal neuroticism was more strongly associated with overprotective parenting practices for those mothers whose children had the highest reported levels of shyness. Based on this observation, it was hypothesized by Coplan et al. that the relationship between maternal anxiety and children’s shyness is a reciprocal one that takes the form of a
positive feedback loop. Knowledge of the child's temperament serves to elicit specific practices on the part of the parent that in turn serve to reinforce and increase the child's shyness and emotional dysregulation. While Coplan et al.'s research was limited in particular by the exclusive use of maternal self-reports, the suggestion of the interrelatedness of maternal factors and childhood temperament does support Chess and Thomas' (1999) characterization of the caregiver-infant relationship as an active interactional process. In that model, the caregiver learns how best to meet the child's needs at the same time as the child learns the most effective ways to have those needs recognized. According to Chess and Thomas, it is the goodness of fit between the parent's and the child's participation in this give and take relationship that help to determine how a child's innate temperament ultimately influences his or her personality. As defined by Kristal (2005), goodness of fit is "the compatibility between the characteristics of the individual and the demands and expectations of the environment" (pp. 16-17). According to her, it is possible to modify this relationship, either by manipulating children's environment or by changing the way an adult caregiver communicates with those same children. Children's optimal development is presumed to occur when "harmony exists between the individual and the environment" (Kristal, 2005, p. 43). As reactions to an environment will vary from child to child, the way that caregivers deal with both environmental cues and children's reactions to those cues can help to establish a good goodness of fit for a child in his/her environment as long as his/her behavioural style (temperament) is kept in mind and the caregivers' modelling fits the child's particular paradigm. As such, it is of value to further explore the bidirectionality of parenting practices and childhood temperament, particularly when a child's temperament is an inhibited one.
**Behavioural inhibition.** In the quest to delineate factors involved in the development of anxiety disorders, timid behaviour (shyness) has repeatedly been implicated as a possible precursor or predictor of an anxiety disorder later in life. Kagan and Snidman (1999) found that an inhibited temperament in children is predictive of an emotional disorder in adolescence while, in their research, Hayward, Killen, Kraemer, and Taylor (1998) measured social anxiety to be five times higher in the 15% of adolescents with the most inhibited temperaments as compared to those in the sample without a temperament characterized as inhibited.

A temperament characterized by behavioural inhibition may well be the mediating link between parental anxiety and EI. According to Kagan (1994), an inhibited temperament in childhood can potentially influence a person’s personality development well into adulthood. He determined this influence in part by testing and then periodically checking in with a cohort of 89 Caucasian children from their early months of life into early adulthood in order to examine the development of their personalities and note the major life choices that they made. Perhaps the most provocative discovery of this research was that the small group of children who had been the most fearful and inhibited during their first three years of life retained aspects of that fearfulness well into adulthood. As adults, these very inhibited children were more introverted, cautious and psychologically dependent on loved ones than the remainder of the sample. The link between behavioural inhibition and decreased social comfort and facility was supported somewhat by the work of Hayward et al. (1998) who examined behavioural inhibition and social anxiety in a population of adolescents and found that childhood inhibition increased the risk of social phobia in adolescence. Studies of this type are relevant to this particular research project because of
links between EI and social functioning (Goleman, 1995; Lopes et al., 2003). In particular, the EQ-i:YV test that was used in this study explicitly assessed interpersonal skills as one aspect of its assessment, thereby providing a new link to test between social functioning as a subset of EI and parental anxiety (Bar-On & Parker, 2000).

Factors influential in the development of behavioural inhibition and, subsequently, childhood anxiety provided another link between studies of social functioning and this particular piece of research. Muris et al. (2010) carried out a three-year, 261 participant longitudinal study examining a variety of factors implicated in increasing a vulnerability to childhood anxiety. When reviewing their data, not only did Muris et al. find a statistically-significant correlation between behavioural inhibition and the development of social anxiety in particular, they also found a number of other risk factors that made significant contributions to the development of anxiety. These additional factors included both insecure attachment and parental trait anxiety. Muris et al.'s findings support the idea that anxiety and/or overprotectiveness on the part of parents is complicit in the maintenance of behavioural inhibition in children and buttress Rapee’s (1997) findings that overzealous parenting may hinder the coping and social skills of their children, providing encouragement for an examination of at least some hyper-parenting practices.

**Hyper-parenting.** The phenomenon of hyper-parenting is in many ways connected to the significant association between childhood anxiety and parental control and/or overprotection described in this work. Depending on the circumstances and the ways in which control is exercised, the concept of overcontrol described by Reitmann and Asseff (2010) could also reasonably be considered “hyper-parenting”, a term that was first introduced by Rosenfeld and Wise (2000) who conjectured that parents could be so busy
trying to provide enrichment opportunities for their children that they failed to recognize and appreciate their children for who they already were. While Rosenfeld and Wise were drawing conclusions based more on their own observations and conjectures rather than on any specific pieces of research, there has been recent research into the phenomenon of hyper-parenting. One recent report in particular indicates that the phenomenon is mostly class-related and to a far-less extent than previously suspected (Nelson, 2010).

Although any negative effects of hyper-parenting are presumed to be limited to a very minor percentage of parent/child relationships, the effects of parental trait anxiety presumably are not. For this research, an interest in hyper-parenting provided the initial impetus to take on the task of research wherein its occurrence was presumed to be one result of a particular type of parental anxiety in those caregivers striving to raise a “perfect” child who is immune to failure. Allowing that hyper-parenting was one expression of parental anxiety, it was then inferred that the effects of hyper-parenting might be similarly negative to those of other described sources and types of anxiety and therefore also important to elucidate in order to help develop best practices for parents seeking to avoid the repercussions of unremitting (trait) anxiety.

The parent as role model. Besides parental expectations and parenting style, it was also necessary to consider the effect that the parent as an emotional role model might have upon the child, both in the transmission of anxiety and the development of EI. Saarni (1999) found that even children as young as 10 to 12 months old looked to their parents’ examples as a guide for their own emotional reactions when faced with an unfamiliar or ambiguous situation. Learning theory emphasizes the importance of modelling in the
Parental Trait Anxiety and Adolescent EI

learning of new social skills (Bandura, 1977), the learning of emotional responses could be expected to follow a similar pattern.

Without a suitable model for the demonstration of appropriate emotional reactions, it would not be inconceivable that a child might find it exceedingly difficult or even impossible to learn how to cope with distressing daily events (Zeidner et al., 2009). The recent discovery of “mirror neurons” highlights even more the importance of parents’ and other caregivers’ provision of consistent, positive models of appropriate mood and emotional expression regulation in order for the child’s brain to learn to operate in a similar fashion. These special nerve cells in the frontal cortex of the brain have been observed to fire both when a person is observing a task and also when that person is engaging in the task himself or herself and are suspected to be involved in the learning and development of empathy among other things (Cozolino, 2006). Fiori (2009) provided some support for this connection to the learning of social skills in her research on the place of automatic processes in emotional perception and processing. Based on her extensive review of the extant literature, she suggested that mimicry of emotions may be the result of automatic imitation of someone else’s expression which then leads to an induced emotional reaction resulting from feedback elicited by facial muscles. She posited that through this or a similar mechanism it is possible that “perceivers may not simply mimic expressions [but also] understand others’ feeling and experience the same emotion” (p. 28), putting forth the hypothesis that such automatic mimicry may be the underlying difference between individual EI capabilities. Collectively, the body of research investigating the influence of parents strongly suggests that it is not enough for a parent to “talk the talk”, they must also be sure to “walk the walk” should they truly want to influence their child’s developing
sense of self and help maximize their children’s eventual EI. The importance of positive role modelling by parents is further explored in relation to children’s development of EI in the following section.

The Development of Emotional Intelligence

Just as the development of anxiety disorders in children has been the subject of research and review, so have factors influential in developing EI. It has been suggested that it is a multi-step process wherein each step requires the development and mastery of specific, appropriate skills in order to transition to the next and that an assortment of biological, environmental and social skills are involved in varying levels at each increment (Zeidner et al., 2003). While Zeidner et al. (2009) admitted that the development of EI is not well understood, they proposed that it involves input from a variety of biological and social factors, including parental child-rearing style and practices.

Attachment

As mentioned earlier, high levels of EI have been found to be positively related to secure attachment (Hamarta et al., 2009; Kafetsios, 2004), indicating a possibility that “not only may biology affect emotional behaviours; [but that] emotion-related behaviours may also affect biology” (Zeidner et al., 2009, p. 148), by influencing the antecedents to secure attachment in particular. When Grossmann et al. (2008) speculated on the connection between attachment and EI, they pointed out that children’s attachment security to their mother is positively related to peer competence. The suspected importance of parents and parenting in the development of emotional competency was supported by Saarni (1999) who proposed that a responsive social network at home allows children to try out different coping strategies as practice for the future stressful encounters that they invariably will have
in daily life. She suggested that, in order to learn how to regulate and work effectively around emotion in the self and others, it is important to experience the emotion and have the opportunity to experiment with a variety of reactions in order to develop a skill set that enables a person to maintain his or her composure while under emotional duress. A securely-attached child expects that his/her emotional signals will be acknowledged and responded to sensitively and so is not apprehensive about freely displaying a wide range of emotions. The ensuing “affective communication” between the child and parent provides the child with a context within which subsequent affective experiences may be organized and understood (Cassidy, 1994; Saarni, 1999). Eventually, if the child can count on an ameliorative response from the parent(s) when beset by strong emotion, the experience of the emotion becomes less threatening and the child gradually gains the ability to self-regulate their affective responses. As Cassidy (1994) succinctly summarized, “[the] experience of security is based not on the denial of negative affect but on the ability to tolerate negative affects temporarily in order to achieve mastery over threatening or frustrating situations” (p. 233). This mastery is one aspect of emotional intelligence.

The Influence of the Home Environment

Gottman, Katz, and Hooven (1997) also highlighted the importance of the home environment in the development of EI. They suggested that emotional intelligence is the mediating link between emotion regulation abilities learned from parents at home and peer social competencies. Indeed, it may be the ability to competently maintain relationships with peers that best serves to highlight the potential importance of EI, particularly for those perpetually-socially-aware creatures, adolescents. According to Gottman et al., the children who are most effectively able to function in peer interactions are those in possession of “a
fundamental set of abilities that have to do with understanding one’s own emotions [and] being able to regulate them” (p. 102). There is mounting evidence that this set of abilities is learned at least in part through family interactions with the sharing of meals gaining especial prominence.

The importance of regular family mealtimes has been examined in relation to various measures of adolescent health in particular. A National Center on Addiction and Substance Abuse (CASA) survey and various other researchers have suggested that adolescent children from families that share more than three dinners a week together generally have lower incidences of alcohol, tobacco, and marijuana use; higher grade point averages; and fewer depressive symptoms (CASA, 2005; Eisenberg, Neumark-Sztainer, Fulkerson & Story, 2008; Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004; Fiese & Schwartz, 2008; Fulkerson et al., 2006; Neumark-Sztainer, Larson, Fulkerson, Eisenberg, & Story, 2010; Sen, 2010). These correlations held even when confounding factors such as family connectedness were accounted for, indicating that sharing family dinners is an important preventative measure for numerous aspects of adolescent health and development. The positive correlation between the frequency of shared family meals and better emotional health in adolescents was of particular relevance to the current research as it is possible that it may also be indicative of higher levels of adolescent EI. As such, a measurement of family meals was included as a part of the demographic survey used for this research so that the possibility of differences in adolescent EI could be tested based on the frequency of family mealtimes.
The Importance of Parent-Child Connectedness

Sharing meals together is one way parents can maintain close connections to their children. When teens feel closer to their parents and there is more parental involvement in their adolescent children's lives, those children are less likely to engage in problem or risky behaviours (US Council of Economic Advisors, 2000). For parents of teenagers, it may be of particular importance to explore the development and maintenance of attachment bonds between parents and their children as links have been found between parent-child connectedness and adolescent emotional functioning (Boutelle et al., 2009). By having a sample of 2516 male and female adolescents complete Eating Among Teens (EAT) surveys at two different times over a 5-year period, Boutelle et al.'s study measured parent-child connectedness, body satisfaction, self-esteem and depressive symptoms in adolescents. They found that not only did parent-child connectedness predict increased self esteem and decreased depressive symptoms in both males and females and more positive body image in females, but also that female self-esteem and depressive symptoms appeared to be predictive of parent-child connectedness. Those females with higher levels of self-esteem tended to have greater measures of parent-child connectedness. Those with increased depressive symptoms had lower measures of connectedness. In males, an association was found between body satisfaction and increased parent-child connectedness. Once again, this speaks to the importance of minimizing parental anxiety in order to best promote and preserve those attachment bonds well into the development of the parent-child relationship.

While Boutelle et al.'s study's strengths included its longitudinal nature and large racially, ethnically, and socioeconomically diverse sample, it did have a few notable limitations. Foremost among these was the reported difficulty in discerning whether the
adolescent self-reports were accurate or unduly reflective of low self-esteem and/or depressive symptoms. This is not considered to be a limitation in this current research as each parent participant completed a complementary (observer) EQ-i:YV form for his/her child, thereby offsetting the influence of factors such as those described by Boutelle et al. The other main limitations delineated by Boutelle et al. were the lack of assessments for psychiatric illnesses or parent emotional functioning and the lower response rates during the follow-up surveys. Of these limitations, only the first two are of relevance to the present study as follow-up surveys were not utilized for this work. While parents were be assessed for trait anxiety, neither they nor the adolescent participants were assessed for any clinical diagnoses, nor were the adolescent participants asked to report on their parents’ anxiety or parenting skills. As such, neither the existence of psychiatric disorders nor the possibility of inaccuracy in the parental self-reports was controlled for in the present study.

As connectedness has been implicated in the development of EI, various questions meant to elucidate the amount of time the parent and student participants spend together in a week were included on the demographic survey that accompanied this research’s main anxiety and EI assessments. The decision to include indications of time together as a proxy for parent/child connectedness was based in part on the work of Neufeld and Maté (2004) who repeatedly emphasized the need for parents to continually “collect” their children and spend time explicitly working on building attachment bonds with them in order to prevent them from becoming overly peer-oriented. According to Dr. Gordon Neufeld at a 2006 professional development seminar in Williams Lake, BC, a big part of preventing the tendency of children to focus on their peers to the exclusion of their parents’ influence is
spending as much time as possible together as a family engaged in positive pursuits (or, at the very least, not overly-negative pursuits).

**Teaching EI**

Although it is difficult to isolate the key factors that influence the development of EI in children, it appears that at least two of them are deliberate on the part of parents: the teaching about emotions and the modelling of appropriate skills in responding to and dealing with strong emotion (Gottman, 1997; Gottman et al., 1997; Zeidner et al., 2003). It is also possible that EI may be enhanced or increased through the use of educational programs tailored towards that purpose (Gore, 2000; Ulutaş & Ömerğlu, 2007) or even just the attainment of higher levels of education (Parker, Saklofske, Wood, Eastabrook, & Taylor, 2005).

Although there are over 300 social-emotional programs meant for educators to address emotional competencies in their classroom (Blankstein, 2003), empirical evidence supporting the use of educational programs to increase emotional fluency is still somewhat limited. By testing the effects of an EI program designed to “enable children to recognize, understand, and manage their emotions in accordance with the sections measured by the Emotional Intelligence Scale” (p. 1371) with a group of 120 preschoolers, Ulutaş and Ömerğlu found a significant difference in the pre- and post-test scores of the group of 40 students to whom the training was given. The enhancement of the specific aspects of EI addressed by the training was still perceptible in a permanence test given to the students one month after the end of the initial program, leading the researchers to conclude that an EI educational program is capable of increasing at least some aspects of EI. Nelis et al. (2009) also noted a persistent change in emotion identification and emotion management abilities.
after explicit training was given. For their research, they found that after they delivered
only four two and a half hour sessions on various EI related topics to their treatment group,
that group had significantly higher EI scores even six months later while the control group
had no changes. Although EI may be somewhat teachable, it is probable that learning
relevant skills in a program such as those discussed here would not entirely compensate for
the lost opportunities to develop those same skills in the more organic atmosphere of the
family. As with a second language, learning EI competencies naturally through daily,
integrated use in a family context likely allows those abilities to be seamlessly integrated
into one’s paradigm but, of course, this assumes that there is ample opportunity for said
skills to be observed and practiced in the family context.

The importance of emotion coaching. Regardless of the possibility that EI can be
raised through educational programs, it is the input and influence of parents or other early
childhood caregivers that are particularly influential (Karen, 1998; Siegel, 1999; Szalavitz
& Perry, 2010). Caregivers who take the time to talk about feelings and coach children in
working through their emotions are helping to confer many benefits upon their children
summarized, these children are generally more relaxed, more popular with teachers and
peers and better able to pay attention and even that, “[holding] IQ constant... five-year-olds
whose parents were good coaches had higher achievement scores in math and reading when
they reached third grade” (p. 192). Considering Goleman’s statement in concert with the
work of Parker, Creque, et al. (2004) wherein a significant correlation between EQ-i scores
and academic grades was measured, it appears very likely that it is of benefit to children for
parents to be emotionally aware and to work on passing those skills on to their children
through modelling and explicit explanation. By encouraging the appropriate expression of emotion by their children, parents are helping to increase those children’s emotion regulation skills (Gottman et al., 1997) and facilitating the development of valuable skills for their future endeavours.

The influence of parental EI. To be capable of successfully adapting to a variety of emotional states and situations, it is necessary to be able to tolerate strong emotion and remain functional while under its influence (Gottman et al., 1997; Saarni, 1999; Schore, 1994). To be able to do so requires that an emotional skill set be learned, in part through careful observation of how others deal with emotions and the opportunity to try out dealing with similar emotions in a safe context (Gottman et al., 1997). Without a secure relationship, emotions can be perceived as unimportant or even threatening (Denham et al., 2003 as cited in Zeidner et al., 2009). As asserted by Schore (1994), “[the] caregiver influences the trajectory of the child’s developing moral capacities by shaping the neurobiological structural system that mediates such functioning” (p. 354). This structural system is formed in large part by the caregiver’s emotional responsiveness towards the child wherein the child not only becomes attached to the caregiver but also learns to look to him or her for guidance in dealing with his or her own emotions. Schwalbe’s (1991) description of someone who is “resilient in the face of environmental perturbations, who has stable predispositions to act, and who can regulate the overt expression of these dispositions” (p. 279) is a succinct description of an emotionally intelligent person. What is significant about this particular description is that the image was meant as an exemplar of the aims of the socialization processes occurring in just the first two years of life.
Whether they do so explicitly or not, caregivers guide and shape the emotional development of their children. For example, when Rutherford (2003) supposed that children of anxious parents learned that displays of negative emotion are unacceptable and to be avoided by observing how their parents reacted to such displays, she postulated that this may result in a crippling of those children's comfort with that aspect of emotionality in childhood and beyond. Woodruff-Borden et al. (2002) proposed that a consistently strong and negative parental reaction to a child's display of negative emotion is a response that focuses on reducing the display rather than attending to the child’s needs, and that this further contributes to the child's discomfort and confusion in managing their emotions in the future. These are not new observations. As Schore (1994) pointed out, “Tomkins (1963) proposed that negative affect is reduced when parents continue to maintain affective engagement with the child who is experiencing negative affect, and when parents communicate tolerance of negative affect in self and child” (p. 345). By communicating their intolerance of and discomfort with negative displays of emotion, caregivers are missing an opportunity to teach appropriate coping mechanisms and aid in the development of children’s EI. As reiterated repeatedly by Hughes (2009), it is almost impossible for children to learn to regulate their emotions and overall affective state if their caregiver is unable to match their affective expressions of emotion (including those that are negative) and support the child’s learning through a gradual decrease in the frequency of co-regulation activities. By undergoing experiences of emotional regulation first through and then with an attuned parent, the child is enabled to gradually learn to self-regulate; emphasizing again the importance of an active, attuned caregiver as, without such a model, the child has no experience upon which to build his/her own self-regulation abilities. So,
while the importance of parents in the development of EI has now been explored at length, it is also of interest to explore why interest in EI is even warranted at all. EI: what is it good for?

**Importance of Emotional Intelligence**

EI is essentially a measure of how effectively a person is able to perceive emotion in the self and others (Zeidner et al., 2009). Even though EI is often conceptualized as a construct distinct from typical measures of intelligence such as IQ (Mayer et al., 2000a), the role of IQ in the understanding of emotional processes should not be discounted. Bar-On conceptualized general intelligence as being composed of both cognitive and emotional intelligence, the former measured by IQ and the latter by EQ (2000). Elsewhere, IQ has been implicated in assisting people’s abilities to manage their moods appropriately (Ciarrochi et al., 2000) and in the placement of appropriate emotional reactions into context (Fiori, 2009). However, for this research, no measurements of IQ were taken, nor were the adolescent student participants’ grades taken into consideration. For the purposes of this study, the only measurements of intelligence that were considered were the EQ-i:YV scores.

**Academic Outcomes Associated with EI**

EI has been linked to school success in a number of studies, some looking at academic success and some at social. Parker, Creque, and colleagues (2004) examined the relationship between academic performance and EI with 667 adolescent student participants and, based on their findings, estimated that 20% of the variance in academic performance is based on EI as measured by the EQ-i:YV. Eastabrook et al., (2005) used the EQ-i:YV to look at possible correlations between those scores and academic success in elementary
students and found that those students whose grades put them in the top third of their class scored significantly higher than those in the bottom third on both overall EI score and a number of the individual scales. Using discriminant function analysis, Eastabrook et al. (2005) were able to demonstrate that they were able to use the EQ-i: YV assessment scores to predict a given student’s academic standing with 84% accuracy. Other studies have found EI levels of students to be strongly associated with student motivation (Zins et al., 2007) as well as academic success in both high school (Parker, Creque et al., 2004), and university (Lam & Kirby, 2002; Parker, Austin, Hogan, Wood, & Bond, 2005; Parker, Summerfeldt, et al., 2004).

**Other Measures of Student Success**

EI has also been found to be predictive of retention of university students (Parker, Hogan, Eastabrook, Oke, & Wood, 2006; Qualter et al. 2009) and, as mentioned in an earlier section, may also be important in the prevention and alleviation of stress-related mental health issues. Ciarrochi et al. (2002) measured two particular aspects of EI, emotional perception and managing others’ emotions, as being significantly associated with specific effects of stress in university students, demonstrating that EI may be important in understanding the link between stress and mental health.

**Background on the Selected Assessments**

This study used two assessments for data collection: the State Trait Anxiety Inventory (STAI) and the Emotional Quotient Inventory: Youth Version (EQ-i:YV). The former was used with the parent participants only as a means to measure their levels of trait anxiety. The latter assessment, while primarily intended for completion by the secondary school participants to measure their levels of EI, also had a complementary form, the
Emotional Quotient Inventory: Youth Version – Observer (EQ-i:YV-O) form that each caregiver was asked to complete with their associated student participant in mind. Each assessment will now be explored in detail.

**The State-Trait Anxiety Inventory**

The STAI is a two-part self-report scale developed by Charles Spielberger for academic and clinical use. It consists of two separate assessments, each of which consists of 20 statements meant to evaluate a person's level of either state (fleeting) or trait (persistent) anxiety. For this research, only the T-Anxiety scale to assess trait anxiety was used. During the development of the STAI, standardization and validation was carried out with more than 6,000 high school and college students, roughly 600 neuropsychiatric and medical surgical patients and 200 prison inmates (Spielberger, 1983). After a factor analysis, many items with poorly defined distinctions between trait and state anxiety or an uncertain relationship to one of those two constructs were discarded and replaced with items that more closely reflected the aims of the assessment. Once development of the inventory was completed, the instrument was normed on a variety of groups: high school students, college students, military recruits, 19-39 year old working adults, 40-49 year old working adults, and 50-69 year old working adults (Spielberger, 1983). Norms for the working adults were developed based on a total of 1,838 employees of the Federal Aviation Administration who were heterogeneous with regards to age and education and held a variety of white-collar job descriptions ranging from clerical positions to upper management (Spielberger, 1983). The normative sample of college students consisted of 855 students enrolled in introductory psychology courses at the University of South Florida and the high school group consisted of 424 Grade 10 students. The largest norm group was
military recruits. Two samples were taken from this last group: 1,701 male Air Force recruits at Lackland Air Force Base, Texas; and 263 Navy recruits at the Navy Recruit Training Command, Orlando, Florida. Spielberger (1983) reported that, as a result of this norming process, T-Anxiety scores were found to differ slightly between working adults and the (generally younger) students and recruits, with the adults tending to have a lower mean score. Mean scores on this scale were not found to differ significantly between male and female working adults or high school students but did differ based on gender for the college students and military recruits. In both of these cases, the female respondents scored slightly higher than the male.

According to the inventory publisher’s website, Mind Garden (www.mindgarden.com), the STAI is the definitive instrument for measuring anxiety in adults. This sentiment was echoed by Kline (1993) who pronounced it to be “an excellent measure of both types of anxiety” (p. 270) in his review of that particular instrument. It has been widely used to measure anxiety levels in both research and clinical settings. Spielberger (1983) made reference to over 3,300 publications that have used the STAI to measure anxiety and a quick search using Google Scholar reveals that the instrument has been used and cited by 11,267 separate documents found by that site between the time that the tool was developed in 1968 and the first draft of this literature review in 2010. As the STAI is such a commonly used assessment, it has thus been widely validated. As noted by Kline (1993), the trait scale in particular has correlations of between .75 and .85 with two other anxiety scales: the IPAT anxiety Anxiety Scale and the Manifest Anxiety Scale. The validity of the STAI was part of the reason for its selection for use in this research.
The Emotional Quotient Inventory: Youth Version

The EQ-i:YV was developed as an adjunct to the EQ-i originally developed by Reuven Bar-On in the late 1990s. It was developed for use with respondents between the ages of 7 and 18 years and retained 25% of the items from the original adult assessment, modified another 25% of the original items and added a new set of items to bring the total number of questions to 96 (Bar-On, 2007). As related by Bar-On (2007), this preliminary version of the EQ-i:YV was then subjected to exploratory factor analysis with a group of 371 children and adolescents after which only 48 items were retained. After the addition of 33 new items, another series of factor analyses was carried out with a sample of 800 children and adolescents, followed by confirmatory factor analysis with a sample of 280 participants on the resulting 60 items that appear in the final version. This final version was then normed on a sample of 9172 children and adolescents in schools across Canada and the United States, excluding those students in special education classes and those with special needs (Bar-On, 2007).

A common criticism of the EQ-i is that it has too much overlap with existing assessments used to measures aspects of personality (Brackett & Mayer, 2003; Conte, 2005; Zeidner et al., 2009). Ultimately, the goal of this research was to further explore possible effects of parental anxiety on child development in order to promote positive child-rearing practices. Regardless of any concerns voiced, in measuring trait EI in adolescents the EQ-i:YV was a useful tool that had been shown to correlate with reduced psychopathology (Hemmati et al., 2004) and various measures of student success and, as such, provided support for the aims of this study.
As summarized by the famous paediatrician Dr. Sears (2002), "[how] we become who we are is rooted, to a large degree, in the parent-child relationship. The relationship you have with your child is the foundation on which all of his other relationships will be built. Even the way children understand themselves depends on their relationship with their parents" (p. 9). By exploring the effects of parental trait anxiety on one aspect of development, that of EI and its associated skills and behaviours, it is anticipated that the nature of this relationship between parents and their children will be just a little more understood so that potential sources of influence of each party on the other might be used in ways that are advantageous to the growth and developments of each.

In this review of the literature, connections were made between parent/child attachment and both parental anxiety and EI development. As such, the attachment relationship may perhaps be viewed as the ultimate mediating factor between these two constructs. By examining the ways that a parent’s anxiety might negatively impact the parent/child attachment relationship, it has been proposed that it is through a dearth of mentalization ability leading to reduced parental sensitivity and subsequent misattunement in the parent/infant communication that this occurs. Consequently, children’s EI development is negatively affected as they may develop a behaviourally inhibited style of interaction and also find themselves without appropriate models of parental affect regulation, leading eventually to lowered measures of EI as adolescents. For the aims of this research, exploring the possibility of a measurable connection between parental anxiety and EI, it is anticipated that the preceding review of the literature around anxiety and EI will have given the reader a sufficient grounding in the basic tenets of each construct so that the aims of the current research and the rationale behind it are better understood.
The next chapter, Research Methods, will provide a summary of the methods utilized over the course of this research – both what was planned and what was actually done. The Results chapter wherein the collected results that were significant to the research question at hand may be viewed will follow this. Chapter 5, the Discussion, will then examine and analyse those results in order to excise and consider the trends contained therein and their significance to the fields of parenting and EI research. The Conclusions chapter will then close this thesis by collecting and summarizing the collected research in terms of the questions under consideration.
Chapter 3 – Research Procedures

Chapter 1 introduced the possibility that parental trait anxiety and adolescent emotional intelligence (EI) might be connected. By outlining the reasons for this research and the hypotheses used, the researcher provided a clear indication of direction for the reader. Subsequently, Chapter 2 provided some background by summarizing the extant research on both parental anxiety and EI's development and importance. A section on the background of the assessments used for the current research was also included in the last chapter.

After first reviewing the purpose of this research, this chapter will describe the methodology and the population of interest that was introduced in the first chapter. Next, a recounting of the actual procedures used for data collection and data treatment will be given. This section will also include an account of the many changes that had to be made over the course of this research in order to effectively gather sufficient data to explore a relationship between anxiety and EI. Following a description of the procedures, the current chapter will build on the previously-provided assessment background by describing the validation of each of the two assessments and identifying the characteristics of each that marked them as suitable for use in the present study. These sections will be followed by explanations of the data treatment considerations and procedures and ethical considerations, after which this chapter will conclude with a brief summary of the aforementioned methods and procedures.

Purpose

The purpose of this study was to investigate the possibility of a relationship between parental anxiety and the EI of adolescents, specifically Grade 10 students attending school
in one of the three dedicated secondary schools in the local school district. By asking these Grade 10 students to complete an EI assessment and their primary caregivers, generally parents, to complete a trait anxiety assessment, a demographic questionnaire, and an Emotional Quotient Inventory: Youth Version (EQ-i:YV) form to complement the student forms, this study explored whether or not parental anxiety is statistically correlated with EI in adolescent children. Although the researcher intended to look at the effects of parental trait anxiety on adolescent EI, any parents that did present with an anxiety disorder were not excluded from the sample, primarily because they were not assessed for any specific disorders, nor were they asked about their specific psychopathologies during the scope of this research.

**Research Methodology and Population**

While the general aims of this research remained the same throughout, there were a number of changes made to the research procedures utilized in order to better sample the local population of parent/student pairs. As well as providing an outline of the methodology underlying the research procedures employed, this section will detail the steps undertaken by the researcher to collect a sample that was as representative as possible of the actual population.

**Methodology**

All results were evaluated using solely quantitative analysis methods. Data collection involved two questionnaires composed of Likert-type scales: the State-Trait Anxiety Inventory (STAI) and the EQ-i:YV, intended to measure trait anxiety and youth EI, respectively. Additionally, a demographic survey was employed to collect information on the participants’ backgrounds, family constellations, and parenting practices. This
information was intended to provide some possible suggestions as to mechanisms by which parental anxiety might impede the development of adolescent EI, should any significant relationships be found.

The research methodology employed for this research was based on the assumption that reasonably accurate measurements of both parental trait anxiety and adolescent EI could be gathered using self-report measures (Ciarrochi, Chan, & Bajgar, 2001). The reliability and validity of the EQ-i:YV and STAI, in particular, will be explored in detail in the Assessments Utilized section of this chapter. Additionally, it was presumed that the use of these Likert-type scales would provide normally-distributed data on which parametric tests such as Pearson's correlations, t-tests and ANOVA could be justifiably used (Hurlburt, 2006). Likert and Likert-type scales do not always result in the type of data that is suitable for statistical analysis through the use of parametric tests (Clason & Dormody, 1994); however, for both of the scales, the researcher assigned a numerical value to each choice and returned results as scores on a continuum originating at a minimum equivalent to the number of items answered. As the differences between these ultimate scale values are meaningful inasmuch as the varying magnitudes are indicative of varying levels of EI or trait anxiety, these results can be considered to be of an interval nature and so are appropriate for analysis with parametric statistical tests.

**The Research Population**

This subsection will describe the methods by which a sample of the research population was selected. Specifically, the various methods by which the sample's size and heterogeneity were increased will be described at some length.
**Participant recruitment.** Although it was not anticipated at the onset of this research, a number of different rounds or phases of data collection were necessary to assemble a sample that was proportionally representative of the local population, and as close as possible to the 85 participant pair minimum suggested by Cohen (1992) as the smallest sample size to yield a power of .80 at $\alpha = .05$ when effect size is assumed to be of a medium magnitude in the population. Each of these phases will now be described in terms of the desired characteristics and the research methods that were used for each and that now distinguish each from the others.

Before any forms were sent home, the researcher sought and was granted permission from the superintendent of the local school district and the local secondary schools' principals to do this research during students' Planning 10 classes. Permission was also granted from the UNBC Research Ethics Board. In order to gain support from district parents and to encourage their involvement, members of some of the local Parent Advisory Councils were apprised of the aims of this research and enlisted as supporters in persuading other local parents to take part. As a part of the permission-collection process, participants were apprised of their right to drop out of the study at any time. Any student/parent pairs that did return the permission slips were given one entry into a draw for a $25$ gift card. Students that completed the EQ-i:YV were given a second entry, and those who brought back the completed parent paperwork received a third.

**Phase 1.** Before testing began, permission forms were sent home with all Grade 10 students attending one of the three secondary schools in the local school district and enrolled in Planning 10 in the second (February to June) semester of the 2010/2011 school year. In order for the students to participate in the study, they were required to have their
parents or caregivers sign their permission forms and bring the forms back within two weeks of receiving them. Besides seeking permission for the students' participation, the forms also requested their caregivers' participation. Samples of these forms have been included as Appendix F.

As it was mandatory for all Grade 10 students to take the Planning 10 class in order to graduate, it provided the highest probability of including every such student registered in the three secondary schools as the majority of students do take this course at least once while in Grade 10. Planning 10 teachers each gave signed proof of their consent before any research activities began. The researcher provided this consent form and a sample of it is available for viewing in Appendix G. For what turned out to be the first of five distinct phases of data collection, a total of 32 student/caregiver pairs were identified as possible participants based on that number of signed permission forms returned to the schools for collection. As students in eight blocks of Planning 10 had been given forms seeking their and their parents' participation, this participation rate represented approximately 12.5% of the total local population of Planning 10 students at that time.

These students were the only participants to partake in the research as it was originally conceptualized: Once permission forms were collected and the sample of students and parents was identified according to who had returned their forms with permission granted for both, the EQ-i: YV tests were administered to all of the participating students during their Planning 10 class. It took participants about 20 minutes to complete the tests. Over the course of three, non-consecutive days, each school's Planning 10 classes were visited and all student participants were briefly pulled from class to complete the EQ-i:YV assessments and were given an additional assessment package to take home to their
parent(s) and/or caregiver(s). After the participating students had completed the EQ-i:YV assessments, all the students in the class were presented with a short lesson on EI as it related to the Planning 10 curriculum. The outline for this lesson can be viewed in Appendix H. Out of the 32 packages sent home, 13 were completed and brought back to the school for collection by the researcher. This return equalled a response rate of 40.6%, a percentage that is slightly over one standard deviation lower than the return rate of 56.7% (with a standard deviation of ±15.9%) that was reported to be the average return for surveys utilized with education-related participants, including students, in a meta-analysis by Baruch (1999). From this point on, this group of participants will be referred to as the Phase 1 group.

Phase 2. As the Phase 1 group number of respondents was so low, a second round of data collection was commenced in June of 2011, after the classroom delivery portion of the first attempt was completed. In order to recruit willing and eligible participants, an all-staff email was sent out to the employees of the local school district. This email requested assistance in finding Grade 10 students who might be willing and able to participate in the research project, along with those students’ parents and/or caregivers. It included a brief outline of the research goals and the tasks required of any volunteers, as well as a mention of the possibility of winning a $25 gift card. This $25 gift-card incentive was the same one offered to the Phase 1 group participants. As a result of this email and word of mouth advertising through colleagues, another 26 research participants were added to the sample and completed the packages containing the full set of surveys and assessments required for the data collection process. As 45 packages had been handed out during this phase, the response rate was an improvement over that of Phase 1 as its return rate was 58%, a marked
improvement over the previous phase’s 40.6% return, and a value that is well within a single standard deviation of the results reported by Baruch (1999).

**Phase 3.** As a large number of the Phase 2 student participants had parents who worked as teachers, or were those students identified by teachers as “good students” whose families would likely be willing to participate in a project of this nature, the sample at the end of Phase 2 was fairly homogeneous. In this case, the sample was heavily skewed towards white, middle-class families, even though there is a sizeable population of First Nations people in the local school district. According to British Columbia Statistics (BC Stats, 2009), in 2006, 16.3% of the residents in the local school district identified themselves as being aboriginal compared to only 4.8% in the province of British Columbia as a whole. In order for the sample collected for this research to be somewhat more representative of the local percentage, efforts were made to explicitly recruit more First Nations participants. These efforts consisted of contacting the principals of a number of rural and Band schools, where the majority of the populations were of First Nations descent, and also asking a First Nations support worker at one of the local secondary schools if she had any suitable candidates to suggest. Also, as the draw for the $25 gift card had already been held and that incentive had already been handed out, the incentive for participation was changed from draw entries to an automatic $5 gift card for participation. All told, this effort resulted in the addition of three more participant pairs, two of whom were of First Nations descent.

**Phase 4.** Over the summer months while school was not in session, posters advertising for research participants were distributed to a variety of local agencies including two tribal councils, a women’s center, an employment center, a health agency, and a family
resource agency. All agreed to have the posters in their lobbies. While looking for suitable venues, contact was made with one suitable participant pair through an agency employee. This one pair was the sole addition to the sample that resulted from this phase.

**Phase 5.** In September of 2011, at the onset of the new school year, permission from the local superintendent was again sought and granted for one final attempt at data collection in the two secondary schools located in the local school district's largest center. Contact was made with the teachers of each of the four blocks of Planning 10 being offered at that time to see if they would be willing to allow some time for recruitment of research participants. All of the teachers were amenable to the suggestion, so each class was visited and research packages were handed out to any student interested in participating in this study. A gift card for an undisclosed amount between $1 and $10 was offered as an incentive for every student that brought back the completed package within two days. While in the schools, various other teachers also volunteered their Grade 10 classes for recruitment purposes, as did a First Nations support worker. During this phase, packages were handed out to a total of 113 students. Of these, 43 completed packages were returned, three of which had to be discarded: one due to an uncompleted parent package and two due to the revelation that the participants had previously completed the assessments and were already included in the sample. This final phase was concluded on October 15, 2011 and marked the end of the data collection process. Over the entirety of the data collection process, 194 parent packages were sent home and, of these, 86 were completed and returned for inclusion in this sample. This represents an overall return rate of 44% for the data collection instruments used for this research. Again, this value is within one standard deviation of the mean return rate of 56.7% (with a standard deviation of ±15.9%) for
surveys utilized with education-related participants, as was reported in Baruch’s 1999 meta-analysis of response rates in academic studies.

**Population characteristics.** Once all research activities were concluded and the sample was identified, there were a total of 83 participant pairs that qualified for inclusion in this study. Of these, 16% were of First Nations descent, a proportion reflective of the reported actual fraction of the local population (BC Stats, 2009). Another 3.6% of the participants that were surveyed identified themselves as being of Southeast Asian descent. Again, this is roughly reflective of the local proportion of 2% Southeast Asian reported by BC Stats (2009). All participants were local residents of the largely rural school district, although no data were collected to identify the proportion of participants that lived in either of the two local communities in which the three secondary schools are located.

The majority of the study participants were female. This was true for both the adults (81.9%) and the students (73.5%). The mean age of the adult participants was 44.2 years (21 – 70, $SD = 8.13$) and that of the students was 15 years (14 – 17, $SD = 1$). Table 1 summarizes a number of other demographic characteristics specific to the sample used in this research.
Table 1

*Other Sample Characteristics*

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<tr>
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</table>

**Summary of the Research Methodology and Population**

This section provided a description of the current study's underlying methodology as well as a portrayal of the population from which the pertinent sample was drawn. By recounting the multi-phasic process by which the sample was obtained and explaining the reasons for each particular phase, it is anticipated that researchers will have an increased appreciation for the resultant sample.
Specific Procedures

The procedures used for facilitation of the data collection process that were partially discussed in the Participant Recruitment section of this chapter will be elaborated on in this section. Both the initially planned procedures and the various permutations of the original plan that were ultimately used will be explained here within.

Initially-Planned Procedures

Before any research activities had begun, it was anticipated that only an in-school collection of data would be required. According to this original plan (Phase 1), the researcher visited each block of Planning 10 first to drop off permission slips with each student. These permission slips may be viewed in Appendix G. After a two-week interval during which the classroom teachers collected forms, eligible participants were identified as all those who had brought back signed permission from their parents. The researcher returned to each Planning 10 class and administered the EQ-i:YV assessments with each of the participating students during the Planning 10 class time and the various assessments for the student participants' parents to complete were sent home with those students. That package was comprised of the complementary Emotional Quotient Inventory: Youth Version – Observer (EQ-i:YV-O) form, the STAI T-Anxiety scale trait anxiety assessment, and a demographic questionnaire. In addition to the various assessments, parents were provided with a handout informing them of counselling services in the local area in case they found the requested assessments too anxiety provoking. This handout also served to thank them for their participation; it is not included in the appendices to this work as its local agency references would have revealed the location(s) of this research.
Throughout the research process, parents and students were asked to identify themselves by only the last four digits of the parents' home telephone numbers. By using the parents' home telephone numbers, the researcher was able to match the various parent-child pairs while still preserving all subjects' anonymities.

Students were initially given two weeks to bring back the completed parent forms at which time they received a second bonus entry into the gift card draw, giving them a total of three entries for their participation: one for bringing back their signed permission slip, one for participating in the student data collection process, and one for returning their caregiver's completed survey package. When these handouts were collected and this original data collection process was concluded, the sample size was neither sizeable nor heterogeneous so changes were made to the original research plan in order to try and increase both the size and the variation of the sample. These changes will now be described.

**Unexpected Changes**

While attempting to collect the sample size prescribed to run a sufficiently-powerful correlation (Cohen, 1992), it was necessary to make a number of changes to the protocol. While these were cursorily described earlier in this chapter in the *Participant Recruitment* section, they will be collected in their entirety here. The previously described phases of research will once again be used in this section.

**Research protocol.** The most significant change was the change in protocol that took place between the first phase of data collection and the subsequent four phases. As noted above, the Phase 1 student participants were approached on three separate occasions:

1. To take home, fill out, and return permission slips to their classroom teacher.
2. To complete the EQ-i:YV assessments during the Planning 10 class attended by the researcher.

3. To return the completed parent package to the classroom teacher.

Since the students were responsible for remembering to complete three distinct tasks, there were three separate occasions for a necessary step of the data collection to be neglected, occasions that typically resulted in the loss of a possible participant. Rather than being collected within two weeks as anticipated, research paperwork from this first phase of research was collected somewhat more slowly so that one package in particular was only returned at the very end of the data collection in October, 2011, an additional unforeseen change to the data-collection process as it was originally envisioned. Not only did this first phase require three exchanges of materials, it also involved the delivery of a lesson on EI to the Planning 10 students.

Neither the multiple exchanges of paperwork nor the lesson on EI were features of the subsequent phases of data collection. Instead of passing out three discrete sets of paperwork, all the necessary forms and surveys were collated into parent and student handouts. One of each of these handouts was then put into a large envelope with instructions for completion and submission of the completed paperwork included. In this way, multiple packages could be handed out to potential parent participants with the intention that they would not only complete the paperwork themselves, but would also recruit appropriately-aged friends of their children to complete it. Although this method precluded the opportunity for the researcher to deliver a short lesson on EI to all student participants, and so did not afford them the opportunity to learn from their research participation, it did allow for a much more efficient dispersal of the research packages and
was likely the primary reason the researcher was able to increase her sample size so substantially.

**Incentives.** Besides the change in the protocol, there were also changes in the incentive offered for participation in this research. While participants in the first two phases were given entries into a draw for a $25 gift card to a local business of their choice, those participants who were recruited during Phases 3 and 4 missed the draw and so were each given a $5 gift card to a local business of their choice instead. Participants in Phase 5, the final phase, were also each given their own gift card. For this final phase, gift cards from various local businesses in amounts ranging from $1 to $10 were put into unmarked envelopes. Every participant that brought back a completed research package was allowed to pick one envelope. This summarizes the changes made to the methods utilized over the course of this research. Next, after a summary of this section, the specific instruments used will be described in the *Instrumentation* section.

**Summary of the Specific Procedures**

By comparing the procedures as they were originally conceptualized to the ways in which the data collection actually proceeded over the course of this research, it is predicted that the reader will now have a clear picture of the methods utilized. Although there were some substantial changes made to the data collection methods as they were employed, a reasonably representative sample of the local population was ultimately obtained. In truth, this was largely due to the flexibility offered by the change in protocol from the initial model to the latter model that provided participants with self-contained research packages; were this research to be executed again, it would likely use a variation of this latter method.
Instrumentation

Data collection for this research was accomplished through the use of Likert-scale-type assessments and a multiple-choice demographic survey. Sample items from the former may be viewed in Appendices A, B, and D, while the latter is available in its entirety in Appendix C. Both of the main assessments used, the EQ-i:YV and the STAI, will now be discussed at length.

The Emotional Quotient Inventory: Youth Version

To explore the connections between parent anxiety and EI in adolescent children, a two-step procedure starting with the administration of EI tests with the adolescent subjects was used. Researchers at the University of Trent, working with Reuven Bar-On, the developer of the original Emotional Quotient Inventory test (EQ-i), have developed a version of that test for use with youth, the EQ-i:YV, a scale consisting of 60 weighted, four-point Likert-type items. The items of this assessment are distributed across seven scales, one of which (Positive Image) is used solely for assessment of false positives in answering and so was not included in the statistical tests used for this research. Bar-On's model is meant to measure potential for emotionally-intelligent behaviour rather than the behaviours themselves (Bar-On & Parker, 2000). The EQ-i:YV measures this potential by investigating abilities grouped into five major dimensions (scales): Intrapersonal skills, Interpersonal skills, Adaptability, Stress Management, and General Mood. Sample items from this assessment may be viewed in Appendix A. The EQ-i:YV is written at a fourth grade reading level (Wood et al., 2009) and it was anticipated to take 30 – 40 minutes for students to complete, although those who completed it under supervision at their school generally completed it within 20 minutes.
According to Bar-On and Parker (2000), the EQ-i:YV is a valid assessment with both factorial and construct validity. As discussed earlier, its factorial validity was determined both through exploratory factor analysis and a look at the intercorrelation of the scales used, which confirmed the multidimensionality of the measure. The fact that the scales employed by the EQ-i:YV correlate well with other measures believed to assess similar constructs denotes construct validity. Bar-On and Parker (2000) reported correlations between .56 and .88 for the various scales of the EQ-i:YV and the congruent scales on the adult form when the tests were administered to one sample of 49 people with a week between administrations.

Bar-On and Parker also reported statistically-significant correlations between each of the scales of the EQ-i:YV and various combinations of the five scales of the NEO-Five Factor Inventory (NEO-FFI) personality test. Moderate negative correlations were measured between the Neuroticism scale of the NEO-FFI and the Adaptability, Stress Management, Total EQ and General Mood scales of the EQ-i:YV. Positive correlations of varying effect size were measured between each of the EQ-i:YV scales and the other, non-Neuroticism scales of the NEO-FFI (Extraversion, Openness to Experience, Agreeableness, and Conscientiousness).

Finally, Bar-On and Parker also cited moderate to very high negative correlations between scores on the EQ-i:YV and the depressive symptoms measured by the Children’s Depression Inventory (CDI), as well as the proclivity for problematic behaviours as measured by both the Conners Parent Rating Scale-Revised (CPRS-R) and the Conners-Wells Adolescent Self-Report scale (CASS). El Hassan and El Sader (2005) supported these assertions of validity with their administration of the translated Arabic version of the
EQ-i:YV to 433 students in Lebanon. The reported reliability and validity of the EQ-i-YV is further supported by Cosgrove’s (2007) work with adolescents attending school, in which she performed a psychometric evaluation of the test and found it to be well-suited for use with the target population.

Although the reliability and usefulness of the use of questionnaires, in general, and the EQ-i, in particular, has been questioned by some (Zeidner et al., 2009), for this study, the concerns voiced were not troubling as the researcher was confident that the reliability and validity of the EQ-i:YV had been sufficiently established. Besides the previously mentioned studies that have tested and confirmed the reliability and validity of the EQ-i on which the youth version is based, the youth version itself has undergone scrutiny. Cosgrove (2007) examined the reliability and validity of the EQ-i:YV in a sample of 1228 Irish adolescent school-children and found that, although the test-retest correlation scores were relatively low as all scales but one had a correlation coefficient of less than $r = .60$, the internal consistency of the scales when measured using Cronbach’s $\alpha$ was still sufficient as these values ranged from .77 to .88. Additionally, she tested the assessment’s validity by comparing participants’ results to the same participants’ results on the Birleson Depression Scale with the expectation that higher levels of EI would be negatively correlated with lower indications of depressive tendencies. All subscales of the EQ-i:YV except the Stress Management scale were found to be negatively correlated with scores on the Birleson with statistically-significant values for $r$ ranging from -.11 to -.25. On the basis of her Irish study, Cosgrove suggested that the EQ-i:YV is a reliable and valid measurement of trait EI. This supported the work of Ciarrochi et al. (2001), who tested the reliability of self-report EI assessments use in general with adolescents and also found them to be capable of
delivering reliable results. For this research, both EQ-i:YV tests and complementary EQ-i:YV-O observer forms were utilized; the former by the student participants and the latter by the adult parents/caregivers.

The State-Trait Anxiety Inventory

For the second part of the study, a trait anxiety assessment was administered to the parents/caregivers of the study’s student participants. The test selected for this purpose was the T-Anxiety scale of the STAI. The T-Anxiety scale, written at a sixth-grade reading level, consists of 20 four-point scale items and is intended to assess a person’s level of trait anxiety by asking them to evaluate how well various statements meant to assess a general level of anxiety apply to them as a person in general. The scores on the T-Anxiety Scale have been shown to be consistent with the trait anxiety construct, in that psychoneurotic and depressed patients generally have high scores (Spielberger, 1983). Sample items from this assessment may be viewed in Appendix B.

According to Spielberger (1983), test-retest correlation is .86 for the T-Anxiety scale of the STAI. Construct validity for this assessment was confirmed by its high level of agreement with other, similar assessments such as the Taylor Manifest Anxiety Scale (TMAS) and the IPAT Anxiety Scale with Spielberger (1983) reporting correlations between the T-Anxiety scale, the IPAT and the TMAS as ranging from .85 to .73. The sheer volume of research incorporating the T-Anxiety scale of the STAI since its development in 1970 also speaks to the reliability and validity of this instrument.

Summary of the Instrumentation

The instrumentation for this research relied on two empirically normed and validated measures: the EQ-i:YV and the T-Anxiety scale of the STAI. These measures
have repeatedly been confirmed as valid and reliable in the assessment of adolescent EI and
adult trait anxiety, respectively.

As this section has summarized the background of and justification for the two
major instruments used in this study, the EQ-i:YV and the STAI, it is now a natural
progression that the data collected through the use of these assessments and the
accompanying demographic survey should be explored. After this discussion we will take a
look at the findings that resulted from the dual application of the EQ-i:YV and the STAI in
the 83 local families that participated in this research.

Data Collection and Treatment

Once all research activities were concluded and survey packages were collected, the
resultant data were examined and prepared for analysis through the use of Excel and,
subsequently, Statistics Package for Social Sciences (SPSS). This section will describe the
considerations undertaken throughout the process of preparing the data and provide some
cursory explanation for the rationale behind the various treatments. A full justification for
the methods used can be found in the Discussion chapter of this work.

Standardization and Validation of the Collected Data

Before any correlations or comparisons of means were carried out using the EQ-i:YV and STAI results, the data were standardized to a mean of 100 and a standard
deviation of 15. The EQ-i:YV manual suggested this standardization because the various
scales of the EQ-i:YV did not all have the same number of items, so first these scores
required standardization before they could be compared directly. In addition to the
differing number of items, certain scales have also been noted to be prone to inflation
depending on the gender and age of the respondent (Bar-On & Parker, 2000). These
differences were accounted for by standardizing the data. Because the EQ-i:YV scores were all standardized to $M = 100$ and $SD = 15$, the STAI scores were similarly transformed in order to more directly compare the distributions for the two assessments' results.

To standardize the raw scores of the EQ-i:YV scales, the seven scales' scores calculated for each participant were each individually converted from a raw score to a standardized score using the specific gender and age category tables given in the EQ-i:YV manual. In this way, the participants' scores were converted to fit the aforementioned distribution based on the values given for their gender and age category, each of which had slightly different values for the various raw scores.

According to the manual for the EQ-i:YV, there are certain scores that are indicative of a need for caution when interpreting results (Bar-On & Parker, 2000). These are: any standardized score over 130 on the Positive Impression scale, any score of 10 or more on the Inconsistency Index, and any standardized score less than 80 on the General Mood scale. All participants with EQ-i:YV results that included one or more of these scores were removed from the sample so that the means of the scores without those results could be compared to the means of the total sample's scores. Independent t-tests with $\alpha = .05$ were used to test these two sets of results and did not find any statistically-significant differences between any of the pairs. As such, the removed participants were restored and have been included in the results of this research, necessitating the inclusion of a disclaimer advising that the results should be interpreted with some caution, as per that instruction given by the manual for the EQ-i:YV for this particular situation.
Once the data were satisfactorily validated and standardized, all results were entered into Excel before ultimately being exported into SPSS for analysis. This analysis, and the hypotheses behind it, will be summarized in the next section.

**Research Hypotheses**

When performing the necessary statistical tests on the data collected for this thesis, a confidence level of 95% (i.e. \( \alpha = .05 \)) was used in order to compromise between the possibility of Type I and Type II errors. At the .05 level, a statistically-significant finding is indicative of a high probability that there is a true relationship or difference between the factors tested as this particular level leaves only a small margin of error that the null hypothesis will be falsely rejected (i.e. Type I error). The risk of Type II error, wherein the null hypothesis is falsely accepted, was similarly controlled for by the use of an interval of .05 due to the intermediate level of risk accepted by this level of confidence.

**STAI and EQ-i:YV score correlations.** By administering EI tests to Grade 10 students and trait anxiety assessments with a demographic questionnaire to their parents, this research project proposed to elucidate a statistically-significant relationship between parental trait anxiety and an impaired development of EI in their children. Once data collection was complete, the existence of a statistically-significant correlation between parental trait anxiety and adolescent EI was tested using a one-tailed Pearson’s \( r \). For this test, \( H_0 \) was that parental trait anxiety has no effect or a positive effect on the development of children’s EI and \( H_1 \) was that parental trait anxiety had a negative effect on children’s EI development (i.e., high anxiety is related to low EI). For these correlations, all scores were standardized to \( M = 100 \) and \( SD = 15 \) before being entered into SPSS for analysis.
Pearson's was anticipated to be the most appropriate test for this research because of the interval-level nature of the data. Both assessments used in this research project involved Likert-type scales wherein a continuum of possible answers was provided for, each of which corresponded to a numerical value. By tallying up the values associated with the various answers, each study participant was assigned a total score, the magnitude of which corresponded to a specific level of trait anxiety or EI. Also, Pearson's correlation was an appropriate test since the scores included all whole number values between a minimum corresponding to the number of questions answered and a maximum equal to each test's respective maximum, and the data were thus defined as interval. As the data were tested and found to be skewed but normally distributed, the need for a Spearman's, non-parametric, correlation was precluded.

**Student and observer EQ-i:YV score correlations.** Besides testing for correlations between the parental STAI scores and student EQ-i:YV scores, correlations were also run between the student and observer, otherwise known as the caregiver, reports of student EI as measured by the main and observer forms of the EQ-i:YV. Once again, this was accomplished through the use of a one-tailed Pearson's. For these correlations, the null hypothesis was that there would be no relationship or a negative relationship between the student and observer reports of EI (i.e. as one report went up, the other would go down). The alternate hypothesis was that there would be a statistically-significant, positive relationship between the two measures wherein as one group's reported scores increased, so too did the other's.

**Significant demographic trends.** Demographic data were collected and subjected to statistical analysis as a part of this study. While students were only asked to identify
their gender and year of birth, parents were asked to complete a questionnaire in order to
reveal various aspects of their home and family circumstances (see Appendix C). This
questionnaire also included a number of questions to do with hyper-parenting practices,
taken from a quiz to identify helicopter parents found at
http://www.quintcareers.com/helicopter_parent_quiz.html. By using independent t-tests
and ANOVA, it was anticipated that it would be possible to measure test-score differences
between participants who identified themselves as belonging to disparate demographic
categories. In the case of the EQ-i:YV scores, gender differences were tested between both
the total scores and scores in each of the five categories. Based on previous research
results, it was anticipated that statistically-significant gender differences would be observed
in the Total EQ and Stress Management scales (Tannous & Matar, 2010). For the STAI,
differences tested included: gender, relationship to student participant (i.e., biological
parent, adoptive parent, non-parental biological relation, etc.), level of education, ethnic
background, number of children, and patterns of response on the helicopter parent questions
(i.e., did parents who answered in similar ways have similar levels of trait anxiety?).

Independent t-tests and ANOVA were used to measure differences in trait anxiety
levels between categories within various demographic groupings such as gender, age, and
education of the parent respondents. These same statistical tests were used to examine
trends in both overall EQ-i:YV scores (i.e., Total EQ) and discrete categorical scores such
as those on the Intrapersonal, Interpersonal, Stress Management, Adaptation, and General
Mood scales within the larger test according to the gender of the student respondents.

For groups with only two variables, two-tailed independent t-tests were used. For
each of these tests, the null hypothesis \( H_0 \) was that the mean level of EI or trait anxiety did
Parental Trait Anxiety and Adolescent EI

not differ between the groups within the demographic category and the alternate hypothesis ($H_1$) was that there was a statistically-significant difference between the means of the two groups being compared.

When there were more than two means to be compared, ANOVA was used to test for statistically-significant differences. For each ANOVA, $H_0$ was that the mean level of trait anxiety did not differ between the groups within the demographic category and $H_1$ was that mean trait anxiety levels were not the same for all groups within a given demographic category; that at least two of the means differed to a statistically-significant extent. In those cases where the ANOVA did indicate a statistically-significant difference between the means of at least two of the groups, a Least Significance Difference (LSD) post hoc test was used to pinpoint the exact location(s) of the difference(s). The LSD was selected based on its liberal parameters when performing pair-wise analyses of the groups within the ANOVA tests.

**Significant parenting trends.** A negative correlation between parental trait anxiety and adolescent EI was expected to be found. It was hypothesized that those students with the highest measures of EI would have parents that were not notably anxious. Conversely, parents who did display definite trait anxiety were expected to have children with lower measures of EI due to those children having had less opportunity to make decisions independent of their parents' influence or input, as is in line with current research into the effects of parental anxiety on parenting practices. While information on parenting practices was not requested in the research materials employed, information on the amount of time each parent/child dyad spent together weekly was, as was subscription to attitudes or specific actions that might be indicative of hyper-parenting tendencies.
When testing the relationship between the amount of time the caregivers and children spent together during the week and weekend, the number of meals the caregivers and children shared during the week and weekend, and the number of activities the caregivers and children shared during the week and weekend, ANOVA was used to test for differences in the scores on the various factors of the EQ-i:YV assessment and also for differences in the STAI scores. For each of these tests, \( H_0 \) was that the mean levels of EI and trait anxiety did not differ between the groups within the survey categories and \( H_1 \) was that the mean levels of EI and trait anxiety levels were not the same for all groups within a given survey category; that at least two of the means differed to a statistically-significant extent.

When the data were sorted according to which of three possible responses caregivers chose on the parenting attitude questions at the end of the demographic survey, the same hypotheses used for the indicators of time spent together were again used. \( H_0 \) was that the mean levels of EI and trait anxiety did not differ between the groups within the demographic categories and \( H_1 \) was that the mean levels of EI and trait anxiety levels were not the same for all groups within a given demographic category; that at least two of the means differed to a statistically-significant extent. Again these were meant to elucidate differences in those scores that might be related to the attitudes or beliefs in question.

**Summary of the Data Collection and Treatment**

In this section, the standardization and validation of the data collected was summarized in such a way that the value and necessity of each should now be evident. Once the accumulated data were checked, standardized, and validated, it was sorted according to the demographic information collected from the demographic survey and
analyzed using ANOVA and independent t-tests as were appropriate. A number of correlations were also run. The rationale for this study and hypotheses, along with descriptions of each of these assessments, were described in this section. The results of these various assessments will be revealed in the next chapter.

**Ethical Considerations**

Although they were not manifold, there were some ethical considerations for this research, primarily concerning the involvement of children as research subjects and the use of incentives to encourage participation. In order to carry out this research within the three secondary schools of the local school district, it was first necessary to meet with the district superintendent to apprise her of the research’s aims and gain her permission. Upon meeting with the superintendent, the researcher’s original plan was approved by the superintendent on the condition that the student participants gained something from the experience. This condition was satisfied by the inclusion of a lesson on EI for all student participants in the first round of data collection. The superintendent also approved the use of small incentives to encourage participation in the data collection process. Additionally, before the commencement of any research activities, the University of Northern British Columbia Research Ethics Board (UNBC REB) reviewed both the proposed research subjects and the use of incentives.

**Chapter Summary**

This study explored the relationship between caregiver (parental) anxiety and EI in children. By measuring EI in Grade 10 students and asking their primary caregivers to complete a trait anxiety assessment, it was predicted that a correlation between high levels of parent anxiety, as might be seen by those parents who are overly involved or “hyper”
parents, and lower measures of EI in adolescents would be observed. A significant
correlation provides support for the consideration of parenting interventions with the
intention to boost the emotional capabilities of children who may be at risk for the
development of mood disorders.

Whereas Chapters 1 and 2 summarized the research question and the background
information to that question, respectively, and Chapter 3 described the methods used to test
hypotheses around the aforementioned question, the next chapter will present findings.
Chapter 4 will present and summarize the results of the statistical tests carried out on the
data collected as described in the current chapter. Besides reviewing the results, the
following chapter will also draw the reader's attention to themes in the data as they relate
back to the research question at hand. These findings will then be discussed in Chapter 5,
the Discussion, which will be followed by the final chapter, Conclusions and
Recommendations wherein any significant findings will be summarized and used to help
formulate possible future directions for related research.
Chapter 4 – Findings

Chapter 1 summarized the aims of this research. Chapter 2 reviewed the literature on parental anxiety and EI and also gave a background of the assessments used. Chapter 3 encapsulated the methodology, research population, and data collection strategies utilized for this research. This chapter will provide a summary of the results of this research, starting with a data synopsis that supported the decision to include all of the 83 student respondents of the final sample even though some had notably high or low scores on particular scales and/or the Inconsistency Index. Only those results that were statistically-significant and related to the research question exploring the proposed link between parental trait anxiety and adolescent EI are included in this section. A full account of all the results wherein a statistically-significant result was noted can be viewed in Appendix I.

The main hypothesis of this research was that anxious parents would have less emotionally-intelligent children. This section begins by displaying the results of the Pearson’s correlation that was run between parental trait anxiety levels as measured by the State-Trait Anxiety Inventory (STAI) and adolescent EI levels as measured by the Emotional Quotient Inventory: Youth Version (EQ-i:YV). The correlations between the student self-reports and parent/caregiver observer reports of the student participants’ EI as assessed by the EQ-i:YV forms are also provided. Next, a comparison of the differences between the means of the student scores on the various EQ-i:YV scales and the parent/caregiver scores on the STAI assessment will be provided. These comparisons are in consideration of the demographic information collected on the parental demographic survey, and were accomplished through the use of independent t-tests and analysis of variance (ANOVA) tests, the latter of which were used in conjunction with appropriate post
hoc tests when a statistically-significant difference was indicated. Finally, the results of Pearson’s correlations run between specific pieces of information regarding the time the respondents spent together as a family and their EQ-i:YV and STAI scores are included as the final part of this chapter. All statistical tests were run in Statistical Package for the Social Sciences (SPSS).

Unless otherwise specified, all STAI and EQ-i:YV scores were standardized to $M = 100$ and $SD = 15$ as per the example set by the EQ-i:YV manual (Bar-On & Parker, 2000). For brevity, abbreviated versions of the EQ-i:YV scale names are used throughout this chapter. These abbreviations are: INTRA (Intrapersonal Scale), INTER (Interpersonal Scale), STRESS (Stress Management Scale), ADAPT (Adaptation Scale), MOOD (General Mood Scale), and TOTAL (Total EQ Scale).

**Tests to Determine Which Data Points to Include**

As noted in the Research Procedures, after the EQ-i:YV scores were standardized, the resulting standardized scores were scrutinized for values on the General Mood scale, Positive Impression scale, and Inconsistency Index that could be indicative of bias or random answering. Due to the small sample size ($N = 83$) and a desire to maximize the power of the tests based on that sample, it was desirable to include as many of the participants as possible in the final sample. As such, the data were analyzed without and then with the “questionable” values included in order to monitor how and to what extent the two sets differed. Where questions were missed on either the STAI or the EQ-i:YV, the average of the answered questions on the affected scale was taken and that value was used to replace the missing value(s). In total, there were five participants who missed items on the STAI and whose scores had to be averaged: three who missed a single item and two
who missed two items. On the EQ-i:YV, there were 11 participants who failed to answer all the items on the EQ-i:YV; one of whom missed two items, and 10 of whom each missed one. For this latter group, the missed items were as follows: one item from the Interpersonal scale, four items from the Intrapersonal scale, three items from the Stress Management scale, one item from the Adaptation scale, and two items from the General Mood scale. Of these last two, one was also one of the items used to calculate the Inconsistency Index. With the exception of the three survey packages that were excluded for being incomplete or doubles, all of the collected pairs of survey packages were included in the full sample group. The full sample group included all of the results and the partial sample excluded any participants with one or more of the following scores:

- less than 80 on the General Mood scale;
- greater than 120 on the Positive Impression scale; and/or
- 10 or greater on the Inconsistency Index.

**Measures Explored**

Descriptive statistics for each of these sample groupings were generated in SPSS and the means of the two samples were compared using an independent t-test due to the unequal sizes of the samples. The tests for each of the scales of the EQ-i:YV returned results that failed to reject $H_0$ for $\alpha = .05$, indicating that there were no statistically-significant differences between the mean of the sample with all the collected results and the mean of the sample with the questionable subset excluded, even though the means of the latter were slightly higher than those of the former. A summary of these test results and the descriptive statistics for each of the two outcomes can be found in Table 2.
Table 2

**Independent T-Test Results and Descriptive Statistics Comparing the Full (N = 83) and Partial (N = 68) Samples**

<table>
<thead>
<tr>
<th>EQ-i:YV Scale</th>
<th>INTRA</th>
<th>INTER</th>
<th>STRESS</th>
<th>ADAPT</th>
<th>MOOD</th>
<th>TOTAL</th>
<th>POSIM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>M</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full</td>
<td>92.13</td>
<td>100.37</td>
<td>100.67</td>
<td>94.10</td>
<td>97.59</td>
<td>96.76</td>
<td>98.40</td>
</tr>
<tr>
<td>Partial</td>
<td>94.13</td>
<td>102.09</td>
<td>102.62</td>
<td>95.57</td>
<td>101.47</td>
<td>99.41</td>
<td>99.41</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SEM</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full</td>
<td>2.002</td>
<td>1.492</td>
<td>1.558</td>
<td>1.767</td>
<td>1.600</td>
<td>1.821</td>
<td>1.909</td>
</tr>
<tr>
<td>Partial</td>
<td>2.165</td>
<td>1.471</td>
<td>1.611</td>
<td>1.878</td>
<td>1.328</td>
<td>1.840</td>
<td>2.022</td>
</tr>
<tr>
<td><strong>Skewness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full</td>
<td>-.006</td>
<td>-.455</td>
<td>-.377</td>
<td>-.031</td>
<td>-.478</td>
<td>-.309</td>
<td>-.197</td>
</tr>
<tr>
<td>Partial</td>
<td>-.097</td>
<td>-.374</td>
<td>-.294</td>
<td>-.173</td>
<td>.118</td>
<td>-.380</td>
<td>-.297</td>
</tr>
<tr>
<td><strong>Student’s t</strong></td>
<td>-.2329</td>
<td>-.4927</td>
<td>-.4376</td>
<td>-.1892</td>
<td>-1.4719</td>
<td>-.4582</td>
<td>.2390</td>
</tr>
</tbody>
</table>

*Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ.*

The Positive Image (POSIM) scale is included in Table 2 as it was one of the measures by which the sample was divided, the indication of possible bias being its raison d'être for inclusion on the EQ-i:YV.

In this sample, six respondents scored less than 80 on the General Mood scale.

According to Bar-On and Parker (2000), these scores are indicative of a need for caution when interpreting those participants’ collected results as scores in the lowest range of the General Mood scale may be indicative of tendencies towards underreporting on all the abilities measured by the EQ-i:YV. On the Positive Impression scale, six participants had scores above 120, and two of these had higher than average scores on all the rest of the scales, consistent with Bar-On and Parker’s (2000) observation that scores above 120 tend to be positively related to higher scores on the other scales of the EQ-i:YV where increases in the latter are commensurate with increases in the former. Of the remaining four
participants with scores above 120 on this scale, one participant in particular had lower than average scores on three out of the six scales even though her Positive Image score was 124. This particular participant also had an Inconsistency Index score of 10, which might partially explain these seemingly contradictory observations. According to a similar example given in the manual for the EQ-i:YV, a result such as this is indicative of scores that are higher than the individual’s actual levels of EI. Seven students had scores of 10 or more on the Inconsistency Index, the measure intended to be indicative of inconsistent answering on the various scales’ questions.

Although the standard deviations were smaller for every EQ-i:YV scale of the partial sample, the standard errors of the mean values were smaller for five of the seven scales in the full sample, indicating that these values were the best estimates of what the standard deviation among the sample means would be if it were possible to collect an infinite number of samples (Hurlburt, 2006; Motulsky, 2010). As the measures of skewness were evenly divided between the two sets of data, that measurement provided no additional incentive to regard either of the data sets as having stronger measures of central tendency than the other.

As can be seen from the results in Table 2, the means (M) were lower for all the EQ-i:YV scales in the full sample; the standard error of the mean (SEM) was smaller in five out of the seven scales in the full sample; the skew was closer to zero in half of the full sample scales; and the standard deviation (SD) was greater in each of the scales of the full sample. Essentially, the various measurements of central tendency were divided between the two groups of data, necessitating that a decision be made based on one or more of the provided pieces of information as there was not a clear-cut indication as to which of the two data sets
would be more representative. Further implications of these results will be explained in Chapter 5.

Summary of the Tests Used to Determine the Data Points to Include

As the collected results for this research included a number of scores that indicated a need for caution when interpreting the overall results, the full results and the results with the aforementioned scores excluded were compared to each other. No statistically-significant difference was found between the full and partial samples even though the means of each of the EQ-i:YV scales of the former were higher than the corresponding means of the latter’s scales. For all subsequent tests, the full set of sample results was used. The first test to be run using this data set was a Pearson’s \( r \) to test the research question: Is there a statistically-significant relationship between parental trait anxiety and adolescent EI?

Correlations between Measured Trait Anxiety and EI Levels

By administering EI tests to Grade 10 students and trait anxiety assessments to their parents, the research undertaken for this thesis proposed to elucidate a statistically-significant relationship between parental trait anxiety and an impaired development of EI in their children wherein higher levels of parental trait anxiety would be negatively correlated with the children’s EI scores. This relationship was tested through the use of a one-tailed Pearson’s correlation with \( \alpha = .05 \) where \( H_0 \) was that parental trait anxiety has no effect or a positive effect on the development of children’s EI (\( \rho \geq 0 \)) and \( H_1 \) was that parental trait anxiety negatively affects the EI of children (\( \rho < 0 \)).

The mean raw STAI scores of the parent participants in this study were 35.0 (SD = 9.0) for the women and 33.2 (SD = 9.3) for the men. These values were slightly lower than the means given in the manual for the STAI for working adults between the ages of 40 – 49,
the category into which the majority of the adult participants in this study fell. In the manual, the mean T-Anxiety score for women in the aforementioned category was 35.03 ($SD = 9.31$) and the mean score for men was 35.06 ($SD = 8.88$). As both of the mean results for this study's were so close to the norm group values given in the manual for the STAI, the use of the T-Anxiety scale with the current sample is further justified. The mean standardized STAI scores of the parent participants were 100.38 ($SD = 15.131$) for the women and 98.01 ($SD = 14.962$) for the men.

Means and standard deviations for the adolescent sample’s results on each of the scales of the EQ-i:YV may be viewed in Table 3. According to the manual for the EQ-i:YV, an average standardized score on any one of the scales is anything between 90 – 109, as such, the mean values measured here fall squarely within the mean values of the norm groups used to validate the measure.
Table 3

Means and Standard Deviations of Student EQ-i:YV Scores Stratified by Gender.

<table>
<thead>
<tr>
<th></th>
<th>Females (n = 61)</th>
<th></th>
<th>Males (n = 22)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>INTRA</td>
<td>92.10</td>
<td>17.986</td>
<td>92.23</td>
</tr>
<tr>
<td>INTER</td>
<td>101.92</td>
<td>13.276</td>
<td>96.09</td>
</tr>
<tr>
<td>STRESS</td>
<td>100.13</td>
<td>14.306</td>
<td>102.18</td>
</tr>
<tr>
<td>ADAPT</td>
<td>93.33</td>
<td>16.911</td>
<td>96.23</td>
</tr>
<tr>
<td>MOOD</td>
<td>98.80</td>
<td>13.380</td>
<td>94.23</td>
</tr>
<tr>
<td>TOTAL</td>
<td>96.59</td>
<td>16.763</td>
<td>97.23</td>
</tr>
<tr>
<td>POSIM</td>
<td>99.43</td>
<td>16.657</td>
<td>95.55</td>
</tr>
</tbody>
</table>

Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale.

Findings

As parents' levels of trait anxiety increased, the stress management abilities of their children decreased as evidenced by the observation that a modest negative correlation was calculated between higher scores on the STAI trait anxiety assessment and lower scores by those parents' children on the Stress Management scale of the EQ-i:YV, this correlation was the only statistically-significant relationship measured between the two assessments used for this research. As can be seen in Table 4, this correlation was $r = -.201, p = .034$. 
Table 4

Correlations Between Parental Trait Anxiety and Adolescent EI (N = 83)

<table>
<thead>
<tr>
<th>Student EQ-i:YV scale</th>
<th>INTRA</th>
<th>INTER</th>
<th>STRESS</th>
<th>ADAPT</th>
<th>MOOD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parent STAI</td>
<td>-0.096</td>
<td>0.060</td>
<td>-0.201*</td>
<td>-0.036</td>
<td>-0.110</td>
<td>-0.116</td>
</tr>
</tbody>
</table>

Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ.
*Significant at the .05 level

Summary of the Correlations between the Trait Anxiety and EI Levels

As noted, a correlation between levels of parental trait anxiety and adolescent EI was tested using a Pearson's correlation. Of the six EQ-i:YV scales tested, only one, the Stress Management scale, was found to be related to parental trait anxiety as measured by the STAI to a statistically-significant extent. Besides this correlation between the parental STAI scores and the student EQ-i:YV scores, the existence of a statistically-significant correlation between the student and observer EQ-i:YV scores was also tested.

Correlations between Student and Observer EQ-i:YV Reports

As parents were asked to complete EQ-i:YV Observer forms for their children, a correlation between the measures on each of these assessments was carried out, the results of which are summarized below. Unlike the rest of the EQ-i:YV data, these scores were not standardized before being correlated. Instead, the average response for each item on the student EQ-i:YV form was found and compared to the same average on the EQ-i:YV Observer form. A one-tailed Pearson's correlation was performed between the observer and the student EI measures wherein $H_0$ was that the parental reports of the students' EI and the student self-reports of EI were unrelated or related in a negative way so that as the student scores went up, the observer reports of those same scores went down ($\rho \leq 0$) and $H_1$ was that parents’ reports of their children’s EI and those children’s self-reports vary together so
that the observers’ reported scores increase in tandem with the students’ self-reported scores
($p > 0$) for $\alpha = .05$.

**Findings**

Parents’ evaluations of their children’s intrapersonal, interpersonal, stress
management, and adaptation abilities, as well as their general mood and total EI, were
found to be similar to those children’s own self-reports on those same aspects. Adolescents
that self-reported higher levels of EI on the EQ-i:YV were likely to have their caregivers
also report them as having higher levels of EI, as indicated by the measured correlations
that are indicative of the two groups’ reports varying together. For each of these
correlations, a statistically-significant positive relationship was measured between the
student and observer reports of the students’ EI as measured by the EQ-i:YV. Table 5
summarizes these correlations.

Table 5

**Correlations Between Observer and Student Scores on the EQ-i:YV (N = 83)**

<table>
<thead>
<tr>
<th>EQ-i:YV scale</th>
<th>INTRA</th>
<th>INTER</th>
<th>STRESS</th>
<th>ADAPT</th>
<th>MOOD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson’s $r$</td>
<td>.326*</td>
<td>.231*</td>
<td>.319*</td>
<td>.372*</td>
<td>.347*</td>
<td>.361*</td>
</tr>
</tbody>
</table>

*Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ.*

**Summary of the Correlations between Student and Observer EQ-i:YV Reports**

The EQ-i:YV assessment included an observer form whereby the parent participants
could report on their perceptions of the students’ EI. As such, two sets of student EI reports
were collected in order for the existence of a correlation between the student self-reports
and the observer reports on the same measures to be tested. Statistically-significant
correlations were measured for each of the scales. Besides this and the previous correlation,
a variety of demographic data were analyzed for their relatedness to the STAI and EQ-i:YV scores using a variety of tests.

**Relationships between Demographic Factors and STAI & EQ-i:YV Scores**

Using the information gathered from the demographic questionnaire, two-tailed independent t-tests and ANOVA tests were used to measure differences in parental trait anxiety and adolescent EI levels between categories within various demographic groupings such as gender, age, and education level of the parent respondents. While the principle of parsimony suggests that the number of statistical tests performed on any given set of data be limited in order to reduce the chance of Type 1 error (the likelihood of which increases with each test run as a result of chance), it was important to analyze this data based on the collected demographic information in order to identify any possible confounds. Although their various influences on the measured relationships between parental trait anxiety and adolescent EI will not be explicitly considered as a part of this particular work, each of the variables in this section for which statistically-significant differences were noted in the STAI and/or EQ-i:YV results must be considered potentially confounding as they were neither controlled nor eliminated in this work. To analyze differences in the gender and the parent education groups, which only had two variables, two-tailed independent t-tests were used. The null hypothesis ($H_0$) for these t-tests was that the mean level of EI or trait anxiety did not differ between the groups within the demographic category ($\mu_1 = \mu_2$). The alternate hypothesis ($H_1$) for the t-tests was that there was a statistically-significant difference between the means of the groups being compared ($\mu_1 \neq \mu_2$).

For each ANOVA, $H_0$ was that the mean level of trait anxiety or EI did not differ between the groups within the demographic category ($\mu_1 = \mu_2 = \ldots = \mu_n$) and $H_1$ was that
mean trait anxiety or EI levels were not the same for all groups; that at least two of the means differed to a statistically-significant extent. For each test, $\alpha = .05$. Although no statistically-significant correlations were found between the parental STAI scores and the scores on the majority of the scales of the EQ-i:YV, there were statistically-significant differences found between the means of the scores on the different EQ-i:YV scales when they were examined in terms of a variety of demographic factors, the majority of which are summarized in Table 6 in which each mean is followed by its standard deviation in parentheses. Not all of the data collected on the demographic survey was included for analysis in this first table. As much of the information collected on the survey was meant to give information on family interactions rather than demographic characteristics, only those categories that were actually of a demographic nature, such as gender, age, and education, were tested in this instance, the rest of the measures will be addressed in the next section.

**Gender**

Male students were found to have higher scores than their female counterparts on the Interpersonal scale of the EQ-i:YV, indicating that, as a group, they possessed greater ability in relating to other people. Using a two-tailed t-test for unequal variances, a statistically-significant difference was found between the male ($n = 22$) and female ($n = 61$) student respondents on the Interpersonal scale, $t = 1.712, p = .048$. The STAI results were also examined based on the respondents' genders, but, unlike the data sorted by student gender, this t-test neither required a test for unequal variances nor did it find a statistically-significant difference between the means of the male and female respondents' STAI scores.
Table 6

Differences in Mean Parental Anxiety and Adolescent EI Scores by Demographic Category

<table>
<thead>
<tr>
<th>Measure</th>
<th>STAI</th>
<th>INTRA</th>
<th>INTER</th>
<th>STRESS</th>
<th>ADAPT</th>
<th>MOOD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parent Employment Field</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education (n = 21)</td>
<td>96.0(16.38)</td>
<td>97.5(14.52)</td>
<td>102.7(12.65)</td>
<td>106.0(11.81)</td>
<td>99.7(13.8)</td>
<td>102.9(16.21)</td>
<td>103.9(14.12)</td>
</tr>
<tr>
<td>Other (n = 61)</td>
<td>101.5(14.47)</td>
<td>90.5(19.16)</td>
<td>99.7(14.00)</td>
<td>99.3(14.32)</td>
<td>92.5(16.41)</td>
<td>95.8(13.76)</td>
<td>94.7(16.59)</td>
</tr>
<tr>
<td><strong>Student's t</strong></td>
<td>-1.447</td>
<td>1.743*</td>
<td>0.884</td>
<td>1.934*</td>
<td>1.802*</td>
<td>1.961*</td>
<td>2.262*</td>
</tr>
<tr>
<td><strong>Student Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 (n = 11)</td>
<td>91.7(10.89)</td>
<td>92.2(13.32)</td>
<td>99.0(17.24)</td>
<td>98.4(15.43)</td>
<td>89.3(14.40)</td>
<td>101.2(13.97)</td>
<td>93.8(18.10)</td>
</tr>
<tr>
<td>15 (n = 44)</td>
<td>100.8(14.98)</td>
<td>93.7(18.60)</td>
<td>99.3(13.27)</td>
<td>101.0(14.78)</td>
<td>95.1(14.96)</td>
<td>95.5(14.64)</td>
<td>97.9(16.05)</td>
</tr>
<tr>
<td>16 (n = 24)</td>
<td>101.6(15.82)</td>
<td>91.8(18.50)</td>
<td>101.2(12.65)</td>
<td>101.3(13.74)</td>
<td>96.2(18.48)</td>
<td>102.6(12.89)</td>
<td>97.6(16.38)</td>
</tr>
<tr>
<td>17 (n = 4)</td>
<td>102.8(18.9)</td>
<td>77.0(24.00)</td>
<td>101.0(11.14)</td>
<td>99.8(10.63)</td>
<td>83.5(16.60)</td>
<td>80.5(10.60)</td>
<td>87.0(22.32)</td>
</tr>
<tr>
<td><strong>F ratio (3, 79)</strong></td>
<td>1.306</td>
<td>1.028</td>
<td>.974</td>
<td>.114</td>
<td>1.111</td>
<td>3.603*</td>
<td>.661</td>
</tr>
<tr>
<td><strong>Highest Level of Parent Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No dip. (n = 17)</td>
<td>102.7(19.28)</td>
<td>89.9(21.05)</td>
<td>96.0(14.36)</td>
<td>92.1(11.55)</td>
<td>82.4(16.58)</td>
<td>90.4(13.10)</td>
<td>87.1(16.21)</td>
</tr>
<tr>
<td>Gr. 12 dip. (n = 5)</td>
<td>94.5(15.88)</td>
<td>94.4(24.99)</td>
<td>92.4(13.72)</td>
<td>93.6(12.78)</td>
<td>89.0(3.00)</td>
<td>95.6(5.81)</td>
<td>91.0(13.38)</td>
</tr>
<tr>
<td>P. Sec. (n = 23)</td>
<td>102.6(15.14)</td>
<td>89.7(19.29)</td>
<td>101.2(13.63)</td>
<td>105.2(13.01)</td>
<td>98.8(13.24)</td>
<td>99.7(15.31)</td>
<td>99.3(15.51)</td>
</tr>
<tr>
<td>P. Sec. dip. (n = 38)</td>
<td>97.8(12.66)</td>
<td>94.3(15.66)</td>
<td>102.9(12.84)</td>
<td>102.7(14.61)</td>
<td>97.2(16.12)</td>
<td>99.8(14.89)</td>
<td>100.3(16.41)</td>
</tr>
<tr>
<td><strong>F ratio (3, 79)</strong></td>
<td>.895</td>
<td>.413</td>
<td>1.663</td>
<td>3.871*</td>
<td>4.915*</td>
<td>1.916</td>
<td>3.127*</td>
</tr>
</tbody>
</table>

Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ.

*Statistically-significant at the .05 level.

Employment

Those students whose caregivers indicated having an education-related job were found to have higher intrapersonal, stress management, and adaptive abilities than students whose caregivers did not work as educators. These educators’ children also had more positive general moods and higher overall measures of EI. As with the student gender data, the parent employment data were also examined using a two-tailed independent t-test. After initially sorting the data according to the fields indicated and testing with ANOVA, a Least Significant Difference (LSD) post-hoc indicated that any measurable differences
between the EQ-i:YV and STAI means were between the children of parents that identified themselves as working in education and a variety of other groups. Because of difficulties sorting the various categories into a smaller number of groups for comparison, using the education/non-education classification was one way to avoid the use of categories that included otherwise peripherally- or un-related fields. The category of education, in particular, was selected for this comparison as that field represented 26% of all the participant answers, by far the answer selected with the highest frequency. One caveat for this category: as the field of employment of any non-answering caregivers was not included in the data collection for this research, it is possible that some of the students in the non-educator-parent group should have actually been in the other group, were there any students whose non-participating parent happened to be an educator when the participating parent was not.

**Student Age**

Of all the student participants, the general moods of the 17-year-olds were notably more negative than any other of the four age categories. A tendency for the general moods of the 15-year-olds to be generally more negative than those of the 16-year-olds was also noted for this group. The student participants in this research all fell within a four-year span of ages. As such, the groups compared by this ANOVA were 14-, 15-, 16-, and 17-year-old students. As General Mood scale scores were identified as having differences between the means of at least two of the age groups, an LSD post hoc was carried out on the data. The LSD indicated that the differences between the groups were between the 14- and 17-year-olds (a mean difference of 20.682 points), the 15- and 16-year-olds (a mean difference of 7.061 points), the 15- and 17-year-olds (a mean difference of 15.023 points), and the 16-
and 17-year-olds (a mean difference of 22.083 points). In other words, when examining the differences in mood according to age, only the 14- and 15-year-old and the 14- and 16-year-old groups did not have a statistically-significant difference between them.

**Highest Level of Caregiver Education**

Caregiver education was explored in terms of the highest level completed. There were four categories: no high school diploma; high school diploma; some post-secondary, no credential; and post-secondary diploma. Those students whose parents had completed at least some post-secondary education, regardless of whether a credential was earned, were found to have better stress management and adaptive abilities and higher overall EI than students whose parents had not finished high school.

As the ANOVA indicated a statistically-significant difference between at least two of the groups’ Stress Management, Adaptation, and Total EQ scale scores, an LSD post hoc was carried out on the data. The LSD indicated that, for each of the three categories, the differences between the groups were between the caregivers who had not finished high school (Group 1) and those who had completed at least some post-secondary work (Group 3), and the caregivers who had not finished high school (Group 1) and those who had completed a post-secondary program (Group 4). In each case, the mean of the former’s children’s scores were lower than those of the latter’s. This is indicated by negative values for the mean differences as the scores of the second group were subtracted from those of the first. The mean differences for each of these comparisons can be viewed in Table 7.
Table 7

*Mean Differences in EQ-i:YV Scales by Highest Level of Caregiver Education*

<table>
<thead>
<tr>
<th></th>
<th>Mean Difference in Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Groups 1 &amp; 3</td>
</tr>
<tr>
<td>Stress Management</td>
<td>-13.056</td>
</tr>
<tr>
<td>Adaptation</td>
<td>-16.430</td>
</tr>
<tr>
<td>Total EQ</td>
<td>-12.246</td>
</tr>
</tbody>
</table>

**Caregiver Relationship to Child**

While it was included on the demographic survey and indicative of a possible statistically-significant relationship, the relationship of the answering caregiver to the student participant was not included in Table 5 as this demographic category was not specific enough to warrant drawing conclusions from its results. Out of the 83 adult participants that responded to this question, only 11 were not the student participants' biological parents. As no category precluded the possibility that a biological parent was a resident in the home but happened not to be the survey respondent, it is impossible to draw conclusions regarding children living with or away from their biological parent(s) as insufficient data were gathered for that purpose.

**Summary of the Relationships between Demographics and STAI & EQ-i:YV Scores**

As revealed in this section, there were some differences in mean scores on various of the EQ-i:YV scales when the sample data were sorted according to a variety of demographic categories. While no differences were found in the parent STAI scores upon comparing them across the demographic variables, all of the EQ-i:YV scales except the Interpersonal measured differences that were significant at the .05 level for area of parent employment. In addition to these results, there were also statistically-significant differences measured for the Mood scale of the EQ-i:YV based on student age, and statistically-
significant differences in students' Stress Management, Adaptation, and Total EQ scales based on the highest level of education attained by the parent or caregiver. Besides testing the demographic information for differences in the means of the EQ-i:YV scales, a group of data that will be collectively referred to as family togetherness indicators was also tested for differences in the mean EQ-i:YV and STAI scores, as well as for correlations between the two assessments' scores and the various indicators. These results will be summarized in the following section.

**Relationships between Family Togetherness and STAI & EQ-i:YV Scores**

Besides demographic factors, indicators of family togetherness, termed as such because they measured various examples of time spent together as parent and child, were also examined in terms of their relatedness to the collected STAI and EQ-i:YV scores. These indicators were: the approximate number of meals the student and parent shared per week, the approximate number of hours the student and caregiver spent together during the week, the approximate number of hours the student and caregiver spent together during the weekend, and the approximate number of activities shared by the student and parent. Two different tests were carried out on this set of data: ANOVA to examine possible differences between the means of the STAI and EQ-i:YV scale scores when grouped according to the various categories, and Pearson's $r$ in order to measure possible areas of relatedness between the indications of time spent together and the resulting STAI and EQ-i:YV scores.

**Examining Possible Differences in Means**

The results of the ANOVA tests are summarized in Table 8 where the mean for each assessment scale's result by category is followed by the standard deviation from that mean in parentheses. Using the information gathered from the demographic questionnaire,
Table 8

**Differences in Mean Parental Anxiety and Adolescent EI Scores by Family Togetherness Indicator**

<table>
<thead>
<tr>
<th>Measure</th>
<th>STAI</th>
<th>INTRA</th>
<th>INTER</th>
<th>STRESS</th>
<th>ADAPT</th>
<th>MOOD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shared Meals/Week</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 or fewer (n = 12)</td>
<td>111.4(20.59)</td>
<td>81.4(16.47)</td>
<td>96.7(15.6)</td>
<td>89.0(14.53)</td>
<td>87.3(21.01)</td>
<td>87.2(12.10)</td>
<td>83.4(15.72)</td>
</tr>
<tr>
<td>4 to 6 (n = 29)</td>
<td>99.6(13.67)</td>
<td>98.4(17.58)</td>
<td>98.8(14.80)</td>
<td>101.1(14.09)</td>
<td>93.0(13.57)</td>
<td>98.9(16.03)</td>
<td>99.3(17.78)</td>
</tr>
<tr>
<td>7 or more (n = 41)</td>
<td>96.3(12.37)</td>
<td>91.5(17.59)</td>
<td>102.5(12.11)</td>
<td>104.2(12.39)</td>
<td>97.5(15.27)</td>
<td>99.2(13.03)</td>
<td>99.6(13.53)</td>
</tr>
<tr>
<td><strong>F ratio (2, 79)</strong></td>
<td>5.226*</td>
<td>4.140*</td>
<td>1.161</td>
<td>6.065*</td>
<td>2.158</td>
<td>3.638*</td>
<td>5.543*</td>
</tr>
<tr>
<td><strong>Hours/Day Together (Week)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or fewer (n = 18)</td>
<td>105.4(12.81)</td>
<td>83.2(18.89)</td>
<td>102.7(13.16)</td>
<td>99.6(16.91)</td>
<td>89.5(14.83)</td>
<td>91.9(16.26)</td>
<td>91.5(18.01)</td>
</tr>
<tr>
<td>2.5 to 4 (n = 25)</td>
<td>97.6(18.09)</td>
<td>95.3(15.80)</td>
<td>94.9(12.30)</td>
<td>98.4(13.26)</td>
<td>92.2(16.74)</td>
<td>96.8(15.69)</td>
<td>95.5(15.29)</td>
</tr>
<tr>
<td>Over 4 (n = 39)</td>
<td>98.4(13.32)</td>
<td>95.0(18.12)</td>
<td>102.7(14.06)</td>
<td>103.1(13.29)</td>
<td>98.2(15.24)</td>
<td>100.2(12.33)</td>
<td>100.8(15.60)</td>
</tr>
<tr>
<td><strong>F ratio (2, 79)</strong></td>
<td>1.734</td>
<td>3.212*</td>
<td>2.943</td>
<td>.939</td>
<td>2.248</td>
<td>2.095</td>
<td>2.268</td>
</tr>
<tr>
<td><strong>Hours/Day Together (Weekend)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or fewer (n = 5)</td>
<td>108.9(8.54)</td>
<td>85.0(22.63)</td>
<td>106.4(18.94)</td>
<td>81.2(12.42)</td>
<td>78.0(19.75)</td>
<td>90.5(15.20)</td>
<td>76.2(19.87)</td>
</tr>
<tr>
<td>2.5 to 4 (n = 12)</td>
<td>101.4(19.78)</td>
<td>84.4(16.66)</td>
<td>99.1(11.99)</td>
<td>104.7(14.57)</td>
<td>88.7(16.78)</td>
<td>86.1(14.38)</td>
<td>94.8(14.55)</td>
</tr>
<tr>
<td>Over 4 (n = 51)</td>
<td>98.4(12.70)</td>
<td>94.5(17.90)</td>
<td>100.8(13.96)</td>
<td>101.8(13.23)</td>
<td>98.0(15.15)</td>
<td>100.1(13.84)</td>
<td>99.5(16.00)</td>
</tr>
<tr>
<td><strong>F ratio (3, 78)</strong></td>
<td>.606</td>
<td>1.501</td>
<td>.141</td>
<td>3.097*</td>
<td>3.368*</td>
<td>4.131*</td>
<td>2.748*</td>
</tr>
<tr>
<td><strong>Shared Activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 5 (n = 18)</td>
<td>105.6(16.98)</td>
<td>92.4(20.00)</td>
<td>97.9(12.70)</td>
<td>93.4(14.11)</td>
<td>84.6(20.88)</td>
<td>94.7(12.88)</td>
<td>90.1(17.57)</td>
</tr>
<tr>
<td>6 to 10 (n = 36)</td>
<td>98.9(15.87)</td>
<td>94.8(18.29)</td>
<td>102.3(14.95)</td>
<td>104.1(12.99)</td>
<td>95.6(12.45)</td>
<td>99.4(14.64)</td>
<td>100.4(15.32)</td>
</tr>
<tr>
<td>10 to 15 (n = 25)</td>
<td>96.9(11.73)</td>
<td>87.6(16.63)</td>
<td>98.0(12.72)</td>
<td>100.1(14.24)</td>
<td>98.4(14.20)</td>
<td>95.2(15.69)</td>
<td>95.2(15.17)</td>
</tr>
<tr>
<td>16 or more (n = 3)</td>
<td>97.2(11.44)</td>
<td>106.0(4.36)</td>
<td>110.0(3.00)</td>
<td>114.0(7.81)</td>
<td>107.0(5.20)</td>
<td>107.6(6.66)</td>
<td>116.7(3.79)</td>
</tr>
<tr>
<td><strong>F ratio (3, 78)</strong></td>
<td>1.302</td>
<td>1.387</td>
<td>1.191</td>
<td>3.452*</td>
<td>3.896*</td>
<td>1.138</td>
<td>3.472*</td>
</tr>
</tbody>
</table>

*Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ.

ANOVA was used to measure differences in parental trait anxiety and adolescent EI scores between groups within various categories meant to approximate the amount of time the student and parent participants typically spent together in a week. For each ANOVA, $H_0$ was that the mean level of trait anxiety or EI did not differ between the groups within the
given category ($\mu_1 = \mu_2 = \ldots = \mu_n$) and $H_1$ was that mean trait anxiety and EI levels were not the same for all groups; that at least two of the means differed to a statistically-significant extent. For each test, $\alpha = .05$. The various categories summarized in Table 8 are each explored individually in the following subsections.

**Shared meals per week.** Parents who shared more than three meals a week with their children had lower mean trait anxiety scores than those parents who shared fewer than three meals a week with their children. Also, children who shared more than three meals a week with their parent(s) had higher measures of intrapersonal and stress management ability, more positive general moods, and higher overall levels of EI. A comparison of the mean values for each of these measures can be seen in Table 8. To investigate the possibility that EQ-i:YV and STAI scores would differ depending on the number of meals per week shared by the student and his/her caregiver, three categories were used: *three or fewer meals per week; four to six meals per week; and seven or more meals per week*. For this first measure, statistically-significant differences within the Intrapersonal, Stress Management, General Mood, and Total EQ scale scores as well as the STAI scores were indicated by the ANOVA. Only the Interpersonal and Adaptation scales did not show a statistically-significant difference between the scores compared in this way. To elucidate the many differences that were noted by the ANOVA, an LSD post hoc test was carried out on the data and indicated that all the differences between the groups were between those who shared three or fewer meals per week (Group 1) and either those who shared four to six meals per week (Group 2) or those who shared seven or more meals per week (Group 3). The results of this post hoc are summarized in Table 9, in which a negative result indicates a lower score in the first group than the second.
Table 9

Mean Differences in EQ-i:YV Scales and STAI Scores by Number of Meals Shared Per Week.

<table>
<thead>
<tr>
<th></th>
<th>Mean Difference in Scores</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Groups 1 &amp; 2</td>
<td>Groups 1 &amp; 3</td>
<td></td>
</tr>
<tr>
<td>Intrapersonal</td>
<td>-16.963</td>
<td>-10.096</td>
<td></td>
</tr>
<tr>
<td>Stress Management</td>
<td>-12.138</td>
<td>-15.220</td>
<td></td>
</tr>
<tr>
<td>General Mood</td>
<td>-11.647</td>
<td>-11.970</td>
<td></td>
</tr>
<tr>
<td>Total EQ</td>
<td>-15.894</td>
<td>-16.217</td>
<td></td>
</tr>
<tr>
<td>STAI</td>
<td>11.839</td>
<td>15.110</td>
<td></td>
</tr>
</tbody>
</table>

**Hours per day spent together during the week.** Students who spent more than two hours a day together with their caregiver(s) during the week (i.e., Monday to Friday) had higher mean levels of intrapersonal ability than those students who spent two hours or less a day with their caregiver(s) during this same time, as may be viewed in Table 8.

Possible relationships between EQ-i:YV and STAI scores and the number of hours caregivers reported spending with the student respondents during the week used categories: *two hours or fewer; two and a half to four hours; and more than four hours per day*. The ANOVA in this case indicated a statistically-significant difference between at least two of the togetherness groups’ Intrapersonal scale scores. As such, an LSD post hoc was performed. This LSD indicated that the differences between the groups were between both those who spent two or fewer hours per day together during the week and those who spent two and a half to four hours per day together (a mean difference of -12.113) and those who spent two or fewer hours per day together during the week and those who spent more than four hours per day per week together (a mean difference of -11.782).

**Hours per day spent together during the weekend.** Students who spent more than two hours per day with their caregiver(s) during the weekend (i.e., Saturday and Sunday) had higher mean levels of stress management ability and total EI than those...
students who spent two hours or less with their caregiver(s) over the weekend. Students who spent more than six hours a day with their caregiver(s) on the weekend were also found to have higher mean levels of adaptive ability than those who spent two hours or less with their caregiver(s) during the weekend. Students who spent four and a half hours a day or more with their caregiver(s) during the weekend were found to have more positive general moods than those students that spent between two and a half to four hours a day with their caregiver(s) over the weekend, but not necessarily more than those student/caregiver dyads who spent two hours or less together as no comparable trend was measured for that group. Mean values for all of these measurements can be found in Table 8.

To investigate possible relationships between the EQ-i:YV and STAI scores and the number of hours caregivers reported spending with the student respondent during the weekend, the categories used were: two hours or fewer (Group 1 in the post hoc); two and a half to four hours (Group 2); four and a half to six hours (Group 3); and more than six hours per day (Group 4). As the existence of statistically-significant differences was noted between at least two of the groups’ Stress Management, Adaptation, General Mood, and Total EQ scale scores, an LSD post hoc was carried out on the data. As can be seen in Table 10, the LSD indicated that the differences between the groups were not consistent for each of the EQ-i:YV scales. A negative result in Table 10 indicates a higher score in the second group named.
Table 10

Mean Differences in EQ-i:YV Scales by Hours Per Day Spent Together During the Weekend

<table>
<thead>
<tr>
<th>Mean Difference in Scores</th>
<th>Groups 1 &amp; 2</th>
<th>Groups 1 &amp; 3</th>
<th>Groups 1 &amp; 4</th>
<th>Groups 2 &amp; 3</th>
<th>Groups 2 &amp; 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>-17.179</td>
<td>-20.054</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>-22.942</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptation</td>
<td></td>
<td></td>
<td>-20.020</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Mood</td>
<td></td>
<td></td>
<td></td>
<td>-14.709</td>
<td>-14.002</td>
</tr>
<tr>
<td>Total EQ</td>
<td>-18.596</td>
<td>-18.821</td>
<td>-23.240</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of shared activities. Caregiver respondents to the demographic survey were offered a selection of nine activities (eight specific and one general “other”) from which they were asked to select any and all that they shared with their child during first the week and then the weekend in two separate questions. For comparison of the possible differences between the EQ-i:YV and STAI scores based on the caregiver’s report of the number of activities that were typically shared between him/herself and the student, the results were grouped as follows: one to three activities; four to six activities; and seven to nine activities. As no survey was without at least one selection, zero was not included in the categories.

An examination of the individual activity categories was never the intended purpose of these questions. Rather, the participants were given specific categories in the two groups in order to help them to more accurately estimate the total number of activities the student and caregiver shared in a typical seven-day-week. As such, after compiling them as two separate categories, the total numbers of activities indicated as being shared between the caregiver and child during both the week and the weekend were added together for each participant pair. These sum totals were then grouped into categories for comparison of the EQ-i:YV and STAI scores with an ANOVA. For this comparison, the groups were: one to
five activities; six to ten activities; ten to fifteen activities; and more than fifteen activities.

As no survey was without at least one selection, zero was once again not included in the categories.

Students that shared between six and ten activities a week or more than fifteen activities a week with their caregiver(s) had higher mean stress management and adaptive abilities, and higher mean levels of total EI than those students that shared the fewest number of activities a week (i.e., five or fewer) with their caregiver(s). Students that shared between ten and fifteen activities a week with their caregiver(s) were found to only have greater adaptive abilities than the students from the group that shared five or fewer activities with their caregiver(s). In addition to the differences found between the group with the fewest shared activities and the other groups, the researcher also found that those students who shared more than fifteen activities a week with their caregiver(s) had higher mean measurements of overall EI than those students from the group that shared between ten and fifteen activities a week with their caregivers. The mean scores for all of these groups may be viewed in Table 8.

The ANOVA indicated a statistically-significant difference between at least two of the groups' Stress Management, Adaptation, and Total EQ scale scores. In order to elucidate these noted differences, an LSD post hoc test was carried out on the data. The LSD indicated that the differences between the groups were amongst a variety of category comparisons rather than being limited to one or two pairs as had generally been seen in the other post hoc analyses performed as part of this research.
Table 11

Mean Differences in EQ-i:YV Scales by Number of Activities Shared Per Week

<table>
<thead>
<tr>
<th></th>
<th>Groups 1 &amp; 2</th>
<th>Groups 1 &amp; 3</th>
<th>Groups 1 &amp; 4</th>
<th>Groups 3 &amp; 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress Management</td>
<td>-10.639</td>
<td></td>
<td>-20.556</td>
<td></td>
</tr>
<tr>
<td>Adaptation</td>
<td>-10.944</td>
<td>-13.829</td>
<td>-22.389</td>
<td></td>
</tr>
<tr>
<td>Total EQ</td>
<td>-10.389</td>
<td></td>
<td>-26.611</td>
<td>-21.507</td>
</tr>
</tbody>
</table>

The differences found between the various scales are summarized in Table 11 wherein the groups are: one to five activities (Group 1); six to ten activities (Group 2); ten to fifteen activities (Group 3); and more than fifteen activities (Group 4). In this table, a negative result indicates that the score of the first group is less than that of the second. The group with the fewest shared activities had significantly lower scores than each of the other groups on at least one of the three scales that returned statistically-significant differences. When compared just to the next lowest group (Group 2), differences were noted on each of those three scales, a result that will be discussed in Chapter 5.

Correlations between Time Together and EQ-i:YV/STAI Scores

After noting the variety of differences that were measured using ANOVA, the possibility of a correlation between the various measures of time spent together as a family and the EQ-i:YV and STAI scores was tested using Pearson’s $r$, the results of which can be seen in Table 12 for the following variables: (a) hours the student and caregiver spend together per day during the week, (b) hours the student and caregiver spend together per day during the weekend, (c) number of meals shared per week between the student and caregiver, and (d) number of activities shared between the student and caregiver during the week.
A one-tailed Pearson’s correlation was performed between each of the five named variables and both the student EI measures and the parental STAI measures. For the EI correlations, $H_0$ was that the amount of time spent together and the EQ-i:YV scores were unrelated or negatively related in such a way that the more time the parent and student spent together, the lower the student’s EQ-i:YV scores ($\rho \leq 0$). $H_1$ for the EI correlations was that the students’ EQ-i:YV scores would increase with an increase in time spent with the parent ($\rho > 0$) for $\alpha = .05$. The hypotheses for the STAI correlations were opposite those of the EI correlations. For the STAI correlations, $H_0$ was that the amount of time spent together and the STAI scores were unrelated or positively related in such a way that the higher the parent’s STAI scores, the more time the parent and student spent together ($\rho \geq 0$). $H_1$ for the STAI correlations was that an increase in time spent by the parent with the student would be related to decreasing parental STAI scores ($\rho < 0$) for $\alpha = .05$.

As the number of hours per day students and parents spent together increased, student intrapersonal and adaptive abilities as well as their overall EI also increased. Students’ general moods were also found to be more positive as the amount of time students and caregivers spent together increased, but only for those measures taken for the weekends. There was no relationship found between either the week or weekend measures and parental trait anxiety levels. As the numbers of meals shared by students and caregivers in a week increased, so did students’ stress management and adaptive abilities and overall EI abilities. Students’ general moods were also more positive when students shared more meals per week with their caregivers. Additionally, lower levels of parental trait anxiety were observed for those parents that shared a greater number of meals with their children.
Table 12
Correlations Between Student/Caregiver Time Spent Together and Student EQ-i:YV Scores/
Caregiver STAI Scores (N = 82)

<table>
<thead>
<tr>
<th></th>
<th>Hours/Day Together During</th>
<th>Hours/Day Together Weekend</th>
<th>Meals Shared/Week</th>
<th>Activities in a Week</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQ-i:YV Intrapersonal Scale results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson’s r</td>
<td>.226*</td>
<td>.204*</td>
<td>.088</td>
<td>-.034</td>
</tr>
<tr>
<td>p (one-tailed)</td>
<td>.021</td>
<td>.033</td>
<td>.216</td>
<td>.382</td>
</tr>
<tr>
<td>EQ-i:YV Interpersonal Scale results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson’s r</td>
<td>.058</td>
<td>-.026</td>
<td>.167</td>
<td>.048</td>
</tr>
<tr>
<td>p (one-tailed)</td>
<td>.302</td>
<td>.408</td>
<td>.067</td>
<td>.334</td>
</tr>
<tr>
<td>EQ-i:YV Stress Management Scale results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson’s r</td>
<td>.119</td>
<td>.136</td>
<td>.335*</td>
<td>.209*</td>
</tr>
<tr>
<td>p (one-tailed)</td>
<td>.143</td>
<td>.111</td>
<td>.001</td>
<td>.030</td>
</tr>
<tr>
<td>EQ-i:YV Adaptation Scale results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson’s r</td>
<td>.228*</td>
<td>.310*</td>
<td>.227*</td>
<td>.339*</td>
</tr>
<tr>
<td>p (one-tailed)</td>
<td>.020</td>
<td>.002</td>
<td>.020</td>
<td>.001</td>
</tr>
<tr>
<td>EQ-i:YV General Mood Scale results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson’s r</td>
<td>.223</td>
<td>.325*</td>
<td>.232*</td>
<td>.058</td>
</tr>
<tr>
<td>p (one-tailed)</td>
<td>.022</td>
<td>.001</td>
<td>.018</td>
<td>.301</td>
</tr>
<tr>
<td>EQ-i:YV Total EQ Scale results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson r</td>
<td>.232*</td>
<td>.238*</td>
<td>.278*</td>
<td>.183</td>
</tr>
<tr>
<td>p (one-tailed)</td>
<td>.018</td>
<td>.016</td>
<td>.006</td>
<td>.050</td>
</tr>
<tr>
<td>STAI results</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson’s r</td>
<td>-.157</td>
<td>-.149</td>
<td>-.317*</td>
<td>-.195*</td>
</tr>
<tr>
<td>p (one-tailed)</td>
<td>.079</td>
<td>.091</td>
<td>.002</td>
<td>.039</td>
</tr>
</tbody>
</table>

* Statistically-significant at the .05 level.

Lower levels of parental trait anxiety were also noted for those parents that shared greater numbers of activities in a week with their children. As weekly numbers of activities shared by students and caregivers increased, so did students’ stress management and adaptive abilities.

As can be seen in Table 12, the Adaptation scale of the EQ-i:YV was positively related to all of the measures of time spent between the student participants and their parents, a distinction very narrowly missed by the Total EQ scale as it had a value exactly
equal to that of the critical with $r = .183$ and $p = .050$ for the activities per week category, the only category in which it did not indicate a statistically-significant relationship. On the opposite end of the spectrum, the Interpersonal scale was unrelated to all these same measures. The Interpersonal and Intrapersonal scales were the only assessment scores found to be unrelated to the number of meals shared between the student and parent participants in a week, a relationship narrowly missing statistical significance by the former scale as its relatedness was measured as $r = .167, p = .067$ where the $r_{cv} = .1829$ and $\alpha = .05$ for the one-tailed test. This was the closest the Interpersonal scale came to achieving statistical significance with any of these correlations. The implications of these correlations will be explored in the following chapter, the Discussion.

**Summary of the Relatedness of Family Togetherness and STAI & EQ-i:YV Scores**

As can be seen by the results summarized in this section, there were many statistically-significant relationships noted between the various indicators of time spent together as a family and the subsequent STAI and EQ-i:YV scores. When the data were scrutinized for differences between the means of the two assessments’ scores according to the number of shared meals, amount of time spent together (during the week and during the weekend), and number of shared activities in a week, differences were indicated in each of those categories. The most differences were noted in the scores that were grouped by number of meals shared in a week; the STAI scores and the scores on all the scales of the EQ-i:YV except the Interpersonal and Adaptation scales all had at least one pair of groups with significantly different means in this category. This factor was the only one for which significant differences in the STAI scores were noted. The amount of time caregivers indicated they spent with the student participants during the weekend returned significant
results for the Stress Management, Adaptation, General Mood and Total EQ scales, while that same measure examined for during the week only indicated statistically-significant differences in the Intrapersonal scale's scores. The Interpersonal scale also had significant differences when organized according to the number of activities the student and caregiver shared in a full week, as did the Adaptation and Total EQ scales.

When correlations were performed to test the relatedness of the EQ-i:YV and STAI scores to the assorted indicators of family togetherness, all of the measures except the Interpersonal scale of the EQ-i:YV demonstrated at least one statistically-significant relationship between the amount of time and the resulting score or, in the case of the STAI, that assessment's score and the amount of time. These correlations will be interpreted in terms of their possible relatedness to the central research question of this work in the Discussion chapter that follows this chapter after a description of the information collected but not included in this work and a summary of the current chapter.

**Additional Factors Not Included in this Chapter**

In addition to the demographic characteristics already discussed, information on a number of other variables was also requested in that part of the caregiver assessment package. While ANOVA tests were run for each of them, no statistically-significant differences were found between the means of the EQ-i:YV scores when the data were compared based on the following factors: (a) parent age, (b) ethnicity, (c) marital status of the caregiver respondent, (d) number of children living in the home, (e) number of children in the home biologically related to the caregiver respondent, and (f) answers given to the parenting practice questions in the last section of the demographic survey.
Chapter Summary

As predicted, a statistically-significant relationship was found between parental trait anxiety as measured by the STAI and adolescent EI as measured by the EQ-i:YV. However, the relationship between the two constructs was not as significant as predicted as a statistically-significant correlation was only measured between the parental STAI scores and one scale of the EQ-i:YV, the Stress Management scale. This is in marked contrast to the initial prediction that overall measures of EI, as indicated by the Total EQ scale of the EQ-i:YV in particular, would be found to be related to parental anxiety. Besides this correlation, the degree to which the student and observer reports of the student participants’ EI were in agreement was also tested. Positive correlations were found between these two measures for each of the five EQ-i:YV scales assessed. A third correlation was carried out using information from the demographic survey. This third correlation will be discussed after the statistically-significant differences found between the groups within the various demographic categories are summarized.

Although there was not the predicted degree of relatedness between parental trait anxiety and adolescent EI as measured by the STAI and EQ-i:YV assessments, there were numerous other statistically-significant results measured for the data collected over the course of this research. For the demographic information, significant differences were measured between the grouped EQ-i:YV scores for students with parents who were employed in an educational field and those who were not; student age; and the highest level of education completed by the parents. When the data were grouped according to various indicators of time spent together by the student and caregiver participants, the EQ-i:YV scores were again found to differ in statistically-significant ways. The number of meals
shared by the student and caregiver respondents, the number of hours per day they spent together during the week and the weekend, and the number of activities the students and caregivers shared in a week each resulted in statistically-significant differences between the corresponding samples of EQ-i:YV means. The number of shared meals in particular was associated with a great number of significant differences, even in the STAI results.

Besides using t-tests and ANOVA to analyze differences between the means of the EQ-i:YV and STAI results when grouped according to the demographic and family togetherness variables, Pearson’s $r$ was also used to run one-way correlations between those variables and the EQ-i:YV and STAI results. For these correlations, it was predicted that those students with the highest measures of EI would be those that spent the most time with their parent(s). This predicted relationship was confirmed for the Intrapersonal, Stress Management, Adaptation, General Mood, and Total EQ scales for various arrangements of the family togetherness indicators. The relationship between the STAI scores and the time the caregiver and student spent together was predicted to be one wherein increasing scores on the STAI would be linked to commensurate decreases on the amount of time that parent then spent with his/her child. Again, this predicted result was confirmed for a particular subset of the family togetherness indicators, specifically the meals together measure. This was the final set of statistical tests performed on this data.

Building on the research question posed in Chapter 1 and the background information provided in Chapter 2, this chapter has outlined the findings of this research based on the data collected as per the methods outlined in Chapter 3. Chapter 5 will now discuss the significance and implication of the results provided in this chapter and, after the final chapter, Chapter 6, the references and the appendices will conclude this thesis.
Chapter 5 – Discussion

In the first chapter, the Introduction, the impetus behind and rationale for the current research question were explored. Besides a description of the research question, this first chapter provided definitions of key terms. The second chapter, the Literature Review, provided a thorough account of the research on both parental anxiety and emotional intelligence in order to provide the reader with information about what is known and what is suspected regarding the connections between those two constructs. Background information on the STAI and EQ-i:YV assessments was also presented in this second chapter. The Research Procedures, Chapter 3, described the assembling of the sample of student/caregiver pairs required for this research, including a detailed recounting of the actual sampling procedures employed. In addition to the description of the collection procedures used, the relation of this sample to the local population was explained and the research hypotheses and data treatments were divulged. Chapter 4 presented the findings of the current research, the significance of which will now be explored in the current chapter, the Discussion.

Analysis of the Data Preparation Process and Findings

This section will discuss the findings from the various analyses. First, the decision to keep all but three of the participants will be revealed in terms of the criteria for inclusion as set out by the manual for the EQ-i:YV. Following the discussion on data preparation, the findings relevant to the research question, “Is parental trait anxiety related to adolescent EI?” will be explored both in terms of a possible answer to the question itself and in terms of factors that may be influential in the development of any such relationship.
While participation bias was a concern early on in the data collection process when the majority of the population was educators, the increased variability was assumed to correct for this somewhat even though the total sample size remained small. Even so, some bias must be expected as it has been noted that those individuals that volunteer for research work such as in this study tend to more often than not share numerous characteristics (Holden et al., 1993; Johnson, Beaton, Murphy, & Pike, 2000; Rosnow & Rosenthal, 1976). The use of financial incentives may have also influenced the recruitment results (Tishler & Bartholomae, 2002). In order to attempt to maximize the effect sizes of this work’s results, the collected data were scrutinized in order to determine whether this maximization would best be done by retaining a larger sample size or by reducing the standard deviations of the sample scores.

**Rationale and Justification for the Data Preparation**

Before running the various tests for significance, the collected data were standardized, validated, and analyzed for normality. Standardization consisted of converting each of the individual scales’ total scores to a distribution with a mean of 100 and a standard deviation of 15. As described earlier in the Research Methods chapter, this was accomplished through the use of transformative tables given in the EQ-i:YV manual wherein participants’ scores were converted to fit the aforementioned distribution based on the values given for their gender and age category, each of which had slightly different values for the various raw scores. This process was important as the different scales each had a different number of items, making it difficult for the total scores to be compared directly.
The affected scales. A decision had to be made regarding the inclusion of 15 "questionable" EQ-i:YV data sets as defined by the manual to the EQ-i:YV. When scoring the EQ-i:YV, the General Mood and Positive Image scales and the Inconsistency Index serve to assess a respondent's general mood, his or her feelings of worth, and his or her tendency to answer the questions on the EQ-i:YV in a consistent way, respectively. As part of the norming process for the EQ-i:YV, the test developers noted that bias or a tendency to give random answers could be controlled for somewhat by watching for abnormally-low scores on the General Mood scale or abnormally-high scores on either the Positive Image scale or the Inconsistency Index (Bar-On & Parker, 2000). Each of these situations and their implications for the research data will be explained in this section with the final subsection describing how treatment of the current data set was affected by these three sets of measures.

The General Mood scale. In this particular sample, six of the student respondents received scores of 80 or lower on the General Mood scale. Of these six students, all but two had scores that were less than the average of 90 to 109 on the remainder of the scales. These notably low scores on the General Mood scale are important to keep in mind because they potentially resulted in lower mean scores on all the scales of the EQ-i:YV, not just the General Mood scale. This particular scale is important because general mood and EI have been found to be strongly related wherein those individuals with higher levels of EI are often found to be more optimistic than those with lower levels of EI (Bar-On, 2000; Bar-On & Parker, 2000). In line with this observation, people with higher scores on the General Mood scale of the EQ-i:YV tend to report more accurately their EI levels than those with a tendency towards dysphoria. The tendency for those respondents with more depressed
moods to underreport on those abilities purported to be measured by the EQ-i:YV, including the scores of respondents who scored below a standardized score of 80 on the General Mood scale of the EQ-i:YV, means that the collected results must then be interpreted with caution as the actual EI abilities of those respondents may be greater than those indicated by the EQ-i:YV assessment (Bar-On & Parker, 2000).

As two of the respondents with General Mood scale scores of less than 80 had otherwise average scores on the remaining scales, these participants’ low Mood scores were likely a reflection of their moods at the time they took the test rather than being indicative of a more persistent state of depressed affect that may have negatively influenced the participant’s results across the various scales. Alternatively, it is just as possible that their scores were reflective of their typical affect level and that their other EQ-i:YV scales’ scores could have been higher than average had those two students’ typical moods not been so low. Had it been possible to make adjustments as a result of these low General Mood scores in order to more accurately reflect each student participants’ EI abilities apart from their moods, it is possible that the resultant data set would have been one that returned even more correlations with the parental anxiety data. In fact, with the exclusion rather than the correction of the six notable Mood scores, the correlation between the students’ Stress Management scale results and the caregivers’ STAI scores was greater than that obtained with the inclusion of those six scores, even though that same exclusion did not lead to any other correlations being found. With no other correlations arising as a result of the exclusion of the six notably-low General Mood scale scores and with no way of adjusting the relevant students’ scores on the other scales to negate the possible effects of their dysphoria on those scales, the General Mood scale’s results did not provide a clear course
Parental Trait Anxiety and Adolescent EI

of action with regards to the inclusion or exclusion of the questionable data. As such, it was necessary to examine these results in concert with those of the other two scales that had warnings associated with scores beyond a particular value, as will be seen following the summaries of the Positive Impression scale and the Inconsistency Index data.

**The Positive Impression scale.** Of the sample of Grade 10 students surveyed, six participants had scores above 120 on the Positive Impression scale, the score above which cautious interpretation of results is advised. Of these six participants, two had higher than average scores on the rest of the scales, while the others had average scores or, in the case of one participant, scores that were lower than average on the remaining scales. As with the group of six students that had notably-low scores on the General Mood scale, the finding that six participants had notably-high scores on the Positive Impression scale is of note because of the potential effects that an artificially-inflated sense of self-worth might have on the remainder of the scales on the EQ-i:YV. In this case, the four students with notably high Positive Image scores but low-to-average scores on the other scales of the EQ-i:YV may have actually had low or very low abilities across those scales, while the two students with higher-than-average scores on the other EQ-i:YV scales may have actually only had average EI abilities.

In contrast to the General Mood scale, the Positive Impression scale presumes scores to be indicative of false positives rather than false negatives. In other words, for students with Positive Impression scores indicative of a need for cautious interpretation, the caution is that scores on the other scales of the EQ-i:YV may be artificially inflated, rather than unduly low. This scale was the only one to indicate a score beyond which results were deemed invalid (Bar-On & Parker, 2000) and, although none of the participants scored
above that mark of 130, the setting of such a level by the manual’s authors speaks to the magnitude of the potential effects indicated by this scale’s scores.

As the means of all the scales were lower in the full sample with all the Positive Impression scale scores included, this artificial inflation of scores was not a concern for this research. Interestingly, the median score of the Positive Impression results remained the same for both the full and the partial samples, indicating that, for this one measure at least, the scores removed to create the partial sample were fairly evenly removed from both the upper and lower ends of the distribution. It is possible that this was due at least in part to the observation that there were six participants with markedly low scores on the General Mood scale and six with markedly-high scores on the Positive Impression scale. As with the General Mood scale results, it was not possible to make a decision to include or discard the questionable data revealed by the Positive Image scale based solely on the results of that scale, the rationale for that decision follows the next subsection.

**The Inconsistency Index.** Seven students scored 10 or higher on the Inconsistency Index. Rather than a measurement of EI on a particular scale, the Inconsistency Index was a tool to measure respondents’ proclivity for random answering on the EQ-i:YV. To calculate this figure, the difference between the scores on ten specific pairs of questions on the EQ-i:YV were calculated and added together as absolute values. The EQ-i:YV scores of any respondent who scored 10 or higher on this Index are supposed to be interpreted with caution as the high Inconsistency Index score could be indicative of random answering.

The inclusion of data from those participants who tended to answer in inconsistent ways is a concern because it could affect the overall accuracy of the picture presented by the collected EQ-i:YV results. If a student participant answered randomly rather than in a
way that was reflective of his/her self-perception of personal EI abilities, it could have potentially negated any possible statistically-significant relationships measured in the resultant data. As such, the data were closely scrutinized and tested in order to try and elucidate the possible effects that the inclusion of these 'inconsistent' students' data might have. Only once it was clear that the overall results were not significantly affected by the presence of the data that were potentially random were these data accepted for inclusion.

There are a number of reasons that could have resulted in a student's receipt of an Inconsistency Index score of 10 or greater. While it is not unlikely that at least one or two of the seven students that scored 10 or above actually did answer at least somewhat randomly in order to complete their assessments and receive their incentives, it is also likely that other students may have missed a crucial qualifier (e.g., "not") and answered a question in the affirmative when it should have been negative, or vice versa. As the majority of students that completed the EQ-i:YV surveys during the first, in-school phase of data collection generally did so in under fifteen minutes, it would not be unthinkable that those students who joined the project in a later, unobserved phase of data collection might have completed the surveys even faster, particularly since they did not have the unintended incentive of staying out of class for as long as possible. With speed often comes inaccuracy and imprecision and this may have been the case for at least some of these seven participants.

While generally useful, this scale had at least one pair of items that were not obviously related. Whereas most of the question pairs used for the Inconsistency Index were clearly variations on the same question, one pair was not so recognizably related and so may have been responsible for certain participants' notably high scores. As such, it is
possible that, for this particular pair, a difference in scores would not necessarily be indicative of random answering. If a student had answered 4 on one of these questions and 1 on the other, they would have added three points to their Inconsistency Index score. For all but one of the seven students who had a score of 10 or more on the Index, these three points could have been the difference between results that indicated a need for cautious interpretation and those that just faded away into the background of the majority group of research participants. Because of this possibility, the inclusion of those scores marked by the Inconsistency Index as requiring caution when interpreting their results was not a concern for this research, especially in light of the statistical analyses that were performed with and then without the inclusion of the ‘inconsistent’ participants’ data, as will now be explained and justified.

**Special Treatment of the Data in Light of the Indications for Caution**

Because of the various situations that indicated the need for caution when interpreting the data, the extra step of comparing the sample means with and without the outlying scores was added to the data analysis process in order to preclude the possibility that the data set was compromised as a result of the various extreme scores. While the two sets did not differ in any way that was measurable through the use of an independent t-test, there were noticeable differences in the descriptive statistics of the two groups, as were summarized in Table 2 of the Findings chapter.

In the decision to keep all of the data rather than treat those for which caution was indicated as outliers, key among these findings were the standard error of the mean values. Even though the standard deviations were smaller for every EQ-i:YV scale of the partial sample, the standard error of the mean values were smaller for five of the seven scales in
the full sample. Only the Interpersonal and General Mood scales had higher standard errors of the mean for the full rather than the partial sample. As the standard error of the mean represents the standard deviation of the distribution of all the means of a given sample size, it is the best estimate of what the standard deviation among the sample means would be if it were possible to collect an infinite number of samples (Hurlburt, 2006; Motulsky, 2010). Because of these values and the earlier considerations offered in the discussion of each of the three measures by which the full and partial samples were determined, the decision was made to include all of the collected data and use the full sample rather than exclude any of the participants. The rest of this section will explore the possibility that parental trait anxiety and adolescent EI are related in statistically-significant ways, starting with a look at the initial correlation run between those two concepts.

Summary of the Preparation of the Data

This section was the first to be included in this Discussion chapter in order to explain and justify the way the collected data were sorted for analysis. The main decision that had to be made was whether or not to include those values that were too low on the General Mood scale or too high on the Positive Image scale or Inconsistency Index. After examining the descriptive statistics with and without those values and testing the means of the full and partial samples with an independent t-test to see if they differed in a statistically-significant way, the decision was made to use the full sample of 83 participant pairs. The next section will now consider how this sample was used to test the research question and then explore the connections between that question and the collected demographic information.
Analysis of the Main Correlational Findings

This section will examine the findings from the correlational analyses meant to answer the main research question directly. The findings relevant to the research question, "Is parental trait anxiety related to adolescent EI?" will be explored in terms of a possible answer to the question in order to set the stage for the subsequent sections wherein factors that may be influential in the development of any such relationship will be considered.

Is Parental Trait Anxiety Related to Adolescent EI?

As the data analysis in the Findings chapter revealed, the initial correlation was not the most productive of the avenues explored over the course of this research in terms of the number of statistically-significant results returned. While a correlation was measured between the parental STAI scores and the Stress Management scale of the EQ-i:YV, this correlation was the only statistically-significant relationship directly measured between the two constructs. Even so, there were a number of other statistically-significant findings suggesting mechanisms by which parents might influence the development of their children’s EI. These secondary findings will be explored in later sections.

Correlations between the STAI and EQ-i:YV scores. There was a statistically-significant correlation measured between the parental STAI scores and the scores on the Stress Management scale of the adolescent students’ EQ-i:YV assessments indicating that, as parental trait anxiety increases, children’s ability to manage stress is reduced. As suggested by the professional literature, this connection is perhaps not a surprising one; however, there were a few factors that may have been influential in the research process that must be kept in mind when considering why only this one correlation was measured.
Parental Trait Anxiety and Adolescent EI

First, while it was anticipated that the adolescent self-reports would be fairly accurate and not unduly reflective of low self-esteem and/or depressive symptoms for this research and that the possibility of low scores would be offset by the complementary (observer) EQ-i:YV-O forms completed by the caregivers, this offsetting was not actually the case. The observer scores were not used to adjust the self-reports in any way so, even though the observer reports were used as a sort of check measure for the student reports, it is possible that the adolescent self-reports are still unduly reflective of low self-esteem and/or depressive symptoms as was noted by Boutelle et al. (2009) in the limitations of their study looking at family correlates of adolescents with disordered eating. Specific to this research, there was a stronger correlation between the STAI and Stress Management results when participants with scores under 80 on the General Mood scale were excluded from the sample.

Besides the failure of the EQ-i:YV-O assessments to facilitate any adjustments of the adolescents' assessment scores, it is also possible that particular aspects of adolescent personality or disposition were not sufficiently controlled for in the data collection process. Although there were not any more statistically-significant correlations measured with the partial than the full sample, if certain of the EQ-i:YV self-reports were completed by students who were dysphoric but not to an extent that it was picked up by the General Mood scale, this dysphoria could be partially responsible for the lack of correlations between the EQ-i:YV scales other than the Stress Management and the STAI scores. Both this possibility that the EQ-i:YV respondents tended to answer in ways that were unduly reflective of low self-esteem and/or depressive symptoms, and outlying results in many of
the EQ-i:YV scales are conceivably contributory factors to the lack of observed correlations and the small magnitude of the one correlation that was discovered.

Factors that may be relevant in the connection of parental trait anxiety to adolescent EI, and stress management ability in particular, will be considered after first providing some background on the Stress Management scale of the EQ-i:YV. This background will include an explanation of that scale’s significance with regards to both EI and adolescent functioning. After this one, subsequent sections will include explorations of the demographic and family togetherness factors in terms of their association with the central research question.

**Significance of the Stress Management scale.** The Stress Management scale is one of the three scales that were observed to have significantly higher scores in high school students classified as the most successful based on their GPA levels, the other two scales being the Interpersonal and Adaptability (Parker, Creque, et al., 2004). According to the manual for the EQ-i:YV, individuals with high scores on the Stress Management scale “are generally calm and work well under pressure...are rarely impulsive and can usually respond to a stressful event without an emotional outburst” (Bar-On & Parker, 2009, p. 19). Wood et al. (2009) described the Stress Management scale as having two components: impulse control and stress tolerance, representing emotion regulation abilities involved in controlling and managing strong emotion. Bearing in mind this description and the literature on parental modelling especially, it seems unlikely that there would not have been a statistically-significant correlation between parental trait anxiety and student stress management ability, supporting the finding of this research and making it worthwhile to start an exploration of that connection by revisiting the literature on parental modelling.
Parental modelling to teach stress management. Modelling has been established as an important factor in the teaching of EI skills to children. The 2002 work of Woodruff-Borden et al. in particular demonstrated the possible impact of parental anxiety on the stress management ability of children. Proposing that children of anxious parents would be less prepared to effectively deal with stressful situations as a result of having had a poor role model of effective coping mechanisms, Woodruff-Borden and her colleagues observed anxious mothers to be more withdrawn and less productively engaged with their children than non-anxious mothers during a shared parent/child task. They suggested that these anxious mothers’ increased tendency to withdraw from interactions with their children left the children without a strong role model for effective coping skills when the shared task became stressful. It is possible that it is this noted tendency for more anxious mothers to withdraw from interactions with their children is a direct link between the two constructs under exploration in this work. This possibility is supported by the correlation between parental trait anxiety and adolescent stress management ability measured in this study as well as by the noted connections between time spent together by the parent and child and various measures of EI. Rutherford’s (2003) suggestion that children’s development of a sense of mastery over their emotions was negatively affected by having an anxiety-prone mother could also be interpreted as being supported by this work’s finding as the development of this sense of mastery is a key aspect in learning to cope with stress.

Without opportunities to watch and learn how to manage stress in acceptable ways, children may find themselves overwhelmed and prone to shutting down when buffeted by difficult emotions in stressful situations. As highlighted by the work of Gottman and his colleagues (1997), an ability to adapt in emotional (read stressful) situations necessitates a
Parental Trait Anxiety and Adolescent EI

certain initial level of comfort with one’s emotions; developing this comfort level requires practice being exposed to and coping with strong emotions to develop a familiarity with them, particularly, as indicated by Saarni (2009), in the home environment. As per Vygotsky’s (1978) social constructivist theory, “learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers” (p. 90). In other words, children do not learn in a vacuum, they do so in reaction to the prevailing conditions in their environment. As such, having a parent that models avoidant rather than coping mechanisms in the face of stressful situations may preclude the possibility that children will gradually increase their comfort dealing with their own stresses and concurrent strong emotions as, while they have been provided with models from which to learn, those models have not been of any effective coping models (Gottman et al., 1997; Saarni, 1999). In light of this current work’s correlational finding suggesting that increased parental anxiety is related to decreased stress management abilities in children, it seems more likely than ever that it is necessary for parents to learn to manage their own anxieties in order to support their children’s efforts to do the same.

This supposition is again supported by the work of Rutherford (2003) and Woodruff-Borden et al. (2002) who both suggested that having a parent model acceptance of both negative and positive emotions rather than just the latter is an important demonstration for children to develop their own methods of coping and management. Both of these sets of researchers found that anxious mothers were less comfortable with their children’s negative emotion and so were more intent on stopping them than assisting the children with working through them. Although it is possible that the anxious mothers were
just more self-conscious about these displays in the laboratory situation in which these observations were noted, the finding of a correlation between parental anxiety and stress management abilities using self-report measures outside of any type of unusual and possibly particularly stressful environment suggests that anxious parents do indeed act in ways that impair their children’s eventual coping mechanisms. Contributing to the development of an inhibited temperament in their children is one way that this impairment might be accomplished.

The connection to behavioural inhibition. An impaired ability to manage stress on a physiological level has been linked to children’s possession of a behaviourally inhibited temperament (Kagan & Snidman, 1999). As described by Nichols, Gergely, and Fonagy (2001), behaviourally inhibited children are physiologically more stress reactive in general due in part to this temperamental predisposition. As illustrated in the literature review, behavioural inhibition is likely a mediating factor between a parent’s anxiety and the subsequent impairment of children’s EI. Parental trait anxiety has been linked to the development of behavioural inhibition in children as well as to the maintenance of that inhibition (Muris et al., 2010) and behavioural inhibition in turn has been implicated in an increased tendency for the development of emotional disorders in adolescence (Kagan & Snidman, 1999). Given that it has been noted that parental anxiety can lead to behavioural inhibition and a behaviourally inhibited personality may compromise children’s ability to manage stress in effective ways, it appears very likely that this pathway may at least partially explain the correlation measured in this research.

Behavioural inhibition was not directly measured in this research; the closest measure to approach a quantification of student timidity would likely be the scores on the
Interpersonal scale of the EQ-i:YV. A fruitful direction for future researchers using the EQ-i:YV with an adolescent population might be item analysis to explore associations between participant answers on those two scales to see if there are patterns in the answers given on the two. Indeed, although not reported in the Results, the correlation between answers on the Interpersonal and Stress Management scales was measured to be $r = .332$ at $p = .001$, indicating that answers on the two measures are related to each other.

**Connections to attachment security.** Secure attachment, demonstrated to be related to children’s enhanced ability at interpreting mixed emotions at six years of age (Steele, Steele, Croft, & Fonagy, 1999), has been implicated in children’s ability to better tolerate frustration (Grossmann et al., 2008). For adolescent children in particular, secure attachment and connection to a parent has been found to be a protective factor in the development of emotional functioning where higher EI abilities have been found to be positively related to the connectedness between the child and the parent (Boutelle et al., 2009). This ability is likely related to the children’s inner working models that facilitate the autonomous regulation of arousal states and affect (Cassidy, 1994; Schore, 1994). In general, higher levels of EI have been found to be related to secure parent/child attachment (Hamarta et al., 2009; Kafetsios, 2004) and parental anxiety has been observed to negatively impact the formation of attachment bonds, possibly due to impaired mentalization and attunement abilities (Fonagy, 2003; Slade, 2007; van Ijzendoorn & Bakermans-Kranenburg, 2004) as well as just the amount of interaction between an infant and a caregiver (Belsky, 2005). According to Belsky and Fearon (2008), too much or too little parental guidance and control can both be linked to disordered attachment. In part, this observation may account for at least some of the differences in EI noted when the
collected data for this thesis were grouped according to measures of time spent between the parent and student participants, a finding that will be explored in depth in a later subsection.

It may also help to at least partially explain the finding that increased parental anxiety is negatively correlated with adolescent stress management ability. Just as infants develop particular styles of attachment in response to cues from their parents’ behaviours (Karen, 1994), so might the students found to have the compromised stress management abilities have developed their particular coping mechanisms in response to parental cues. Whereas the development of attachment-seeking behaviours in infants is related to whatever behaviours work best to find or maintain proximity with a caregiver, so too might children’s stress management abilities be influenced by attempts to perpetuate those behaviours that are found to provoke the most satisfactory response from a caregiver. For example, if a child were given the most attention and support from his/her anxious primary caregiver when reacting to a stressful situation in a way that was over-the-top, he or she might learn that hysterics is an appropriate response to a stressor. In this way, it might be that the development of stress management abilities could follow a trajectory similar to that responsible for the development of attachment patterns and also be just as responsive to the effects of an anxious caregiver. Indeed, it is this latter possibility that is most supported by this work’s correlational finding between elevated parental trait anxiety and reduced adolescent stress management abilities.

Without the time and example of a good enough mother or other emotionally confident caregiver, children may be missing out on vital guidance for how to deal with their own emotions in ways that are palliating and conducive to continued function (Schore, 1994). As explained by Saarni (1999), securely attached children expect to have their needs
Parental Trait Anxiety and Adolescent EI

and emotions to be met with sensitivity on the part of their caregiver in order to gradually
learn to self-regulate based on the caregiver's example. By learning to tolerate negative
emotion especially, it then becomes possible for the experience of the affects associated
with those emotions to be successfully controlled so that the situation causing the emotion
may be attended to and addressed rather than the emotion itself. In this way, mastery over
frustrating situations might be accomplished and stress management ability is developed.
Cassidy (1994) proposed that this ability to tolerate negative affect was one hallmark of a
secure attachment relationship. As such, a lack of such tolerance capability as indicated by
lower scores on the Stress Management scale may be indicative of a less-than-secure
attachment relationship between the caregiver and student participants. Attachment status
was not assessed for this particular piece of research so it is impossible to ascertain whether
the student participants with higher scores on the EQ-i:YV scales were more likely to be
securely attached than those that had lower scores but, based on the research cited here and
in Chapter 2, it seems that this trend would be a likely possibility. The lack of attachment
information in particular makes it difficult to draw a direct line from the anxiety to the EI
data although a tentative mechanism by which the former impacts the latter may be
somewhat inferred from the extant literature on factors influential in the development of
attachment bonds, the effects of parental anxiety on children's development, and features
that may be important in the development of EI.

Summary of the Main Correlational Findings

The testing of a correlation between the parental STAI scores and the scores on the
six scales of the student EQ-i:YV assessments returned only a single statistically-significant
relationship. This sole significant connection was measured between the STAI results and
the Stress Management scale of the EQ-i:YV where it was noted that adolescent stress management abilities appear to wane somewhat as parental trait anxiety increases. After revealing the importance of the Stress Management scale, the possible influence of parental modelling, behavioural inhibition, and attachment security was surmised. Although a few possibly significant factors such as attachment status were not assessed for this work, many other aspects of the participants' personas and relationships to each other were. The first of these features will now be explored as the relevance of the demographic findings to this research is considered.

Analysis of the Demographic Findings

Along with measuring the strength of the relationship between parental trait anxiety and adolescent EI using Pearson’s $r$, the collected demographic information was also analyzed in terms of its possible relationship to the two sets of test scores collected. Each variable was examined using a test meant to elucidate statistically-significant differences between the means of the groups being compared: an independent t-test for those groups with only two categories, and ANOVA for those groups with more than two categories. When differences were found with the ANOVA tests, the location(s) of these differences was explicated using an LSD post hoc test. All of the secondary tests relating to the demographic questions will now be individually explored in terms of their relatedness to the central research question exploring the connection between parental trait anxiety and adolescent EI.

Gender

Using a two-tailed t-test for unequal variances, the means of the student respondents’ Interpersonal scale scores were found to be statistically-significantly different
when analyzed by gender. At a standardized score of 101.92, the female respondents’ mean Interpersonal score was 6.03 points higher than that of the male students. This finding was in line with the manual for the EQ-i: YV where females were noted to have significantly higher mean scores on the Interpersonal, Intrapersonal and Total EQ scales and males had higher mean scores on the Adaptability scale (Bar-On & Parker, 2000). For this research, only the Interpersonal scale revealed the anticipated difference, this finding was likely due mainly to the small sample size and, in particular, the ratio of only 22 male student participants to 61 female.

The adult participants’ STAI T-Anxiety scale scores were also tested using an independent t-test but did not turn up any differences between the scores of the male and female adult respondents. As there was no difference found between the two groups’ T-Anxiety scale scores, the decision not to explore the possible effects of anxiety by gender was justified, validating the decision to leave all the participants in a single sample.

**Adult Employment**

When the data were compared based on groups of students with and without parents who worked in education, a statistically-significant difference was found between the means of all of the EQ-i: YV scores except those on the Interpersonal scale. These educator/non-educator results could account for much of the skew previously noted in this sample as such a substantial portion of the sample of student/caregiver pairs saw the parent employed in the field of education in some capacity. Looking at the means and the positive sign of the t-values, these two-tailed t-tests indicated that those children with teacher parents have higher levels of EI than those with non-educator parents. Personal experience as both the child of two teachers and the teacher mother of two children would suggest that being a
teacher's kid involves spending a lot of time around schools and school teachers even when it is outside of regular school hours. Frequently, this time in schools involves a lot of interaction with other adult educators, which might provide increased opportunity for the development of EI in the children thus exposed. This increase in EI may occur in part through the parents' and other educators' modelling of a particular skill set that likely contributed to their choice of career as people who are unwilling to get up and interact with other people are generally not the ones that choose to become teachers. It would not be inconceivable that this observation could be partially responsible for the observed differences in the EI of educators' children and that of children with parents who worked in a field unrelated to the formal education system. As will be considered shortly, the noted differences could also be related to the amount and possibly even the type of education completed by those who eventually end up working as educators. The influence of higher education on parenting practices will be covered in the subsection after the next; however, it is possible that the type of education received by those who work as educators could also be a contributing factor to the differences noted here. As learning about child psychology and ways in which children learn best are parts of most, if not all, undergraduate Education programs, perhaps these skills are also influential in some teachers' parenting practices and so at least partially responsible for the subsequent differences in adolescent EI observed here.

Age

Although no differences were found for the data when grouped according to parental age brackets sorted by ten-year intervals, there was one difference found in the Mood scale of the EQ-i:YV scores when sorted by student age. The differences between the 14- and
Parental Trait Anxiety and Adolescent EI

17-year-olds (a mean difference of 20.682 points), the 15- and 16-year-olds (a mean difference of -7.061 points), the 15- and 17-year-olds (a mean difference of 15.023 points), and the 16- and 17-year-olds (a mean difference of 22.083 points) were all greater than any indicated in the norming categories for the EQ-i:YV where effects were only measured for that scale when combined with gender. Again, this observation likely goes back to the small size and relative homogeneity of the sample used for this research. The lack of differences in the STAI scores are in line with the findings given in the norming data of the manual for that measure as, in that work, it was noted that the mean T-Anxiety scores for males between the ages of 25 and 69 and females between the ages of 30 and 49 were remarkably consistent (Spielberger, 1983).

**Highest Level of Caregiver Education**

According to Singh, Thind, and Jaswal (2007), the parent-child relationship is highly related to the education level of the woman in the family, in India at least. Singh et al. (2007) found that the more educated the woman, the more positive her and her husband's parenting style. They posited that this phenomenon was in direct relation to the more educated women's increased exposure and access to the world, leading to increased abilities to identify and cope with their problems due to a broader experience base from which to draw. Also in India, Kang and Jaswal (2006) discovered that the higher the level of education completed, the higher parents scored on positive dimensions of parenting practice such as acceptance and independence and the lower their scores on measures of negative practices such as autocracy and conservatism.

The relationship between maternal education and parenting practices has been tested and found to be significant in other parts of the world as well. In the U.S.A., Kelley, Power,
and Wimbush (1992) found that mothers with higher levels of education were more responsive to and accepting of their children's needs and tended to use inductive reasoning when disciplining their children more than those parents with lower levels of educational attainment. Nelson (2010) also looked at American parents for her work on parenting differences by social class although where Kelley et al. had a sample of low-income mothers, Nelson's sample was drawn from the more affluent working and middle classes.

While it has been observed that higher levels of education may be associated with parenting practices that are distinct from those of parents with lower levels of academic achievement, it is arguable whether certain of these practices are conducive to the raising of children with higher levels of EI. In her 2010 work on modern professional middle-class parenting trends, Nelson (2010) used education to define class status as she noted that using indicators such as socio-economic status or occupational position may miss out on those people who choose to work a lower paying or lower status job for social or cultural reasons. Nelson's three categories – working class, middle class, and professional middle class – are roughly equivalent to this work's two categories of higher education, although where Nelson distinguishes between a Bachelor's and a graduate degree in her two categories of middle class, no distinction is made even between a technical diploma and a graduate degree in the fourth group of this current work. Also, 23 of this thesis research's 61 participants who indicated some level of post-secondary education did not have any credential, a category not distinguished by Nelson. Although the differences found in this work were found between those parents that had not finished high school and the two groups that had completed at least some post-secondary, Nelson's 2010 work is relevant to
this thesis as it again suggests that higher education has implications for individuals’
parenting practices.

In many cases, low levels of educational attainment are associated with low
socioeconomic status. It has been suggested that economic disadvantage is negatively
correlated with a variety of children’s socialization and social contexts (Dodge, Pettit, &
Bates, 1994). In the 84% majority of the lowest socioeconomic status households explored
by Dodge et al. (1994), there was a (usually single) parent who was a high school dropout.
This finding suggests that it is not just between the middle and upper middle classes that
differences in parenting practices may be found. It also provides support for the findings in
this current work wherein the parents with the lowest levels of education had the children
with the significantly lowest mean scores on certain of the EQ-i:YV scales, but why this
finding might be has yet to be discussed.

Singh-Manoux, Fonagy, and Marmot (2006) found that parental expectations are
more strongly related than either warmth or strictness to children’s achievement as adults.
While not a measurement of achievement per se, the Stress Management, Adaptability, and
Total EQ scales were each noted to have statistically-significant differences between the
mean scores of those participants whose parents had not finished high school and those who
had parents who had finished either a partial or a full post-secondary program. As such,
this result could support the observation that higher levels of parental education may be
related to children’s achievement and posit a possible mechanism for the influence of
parental education on adult children’s success, namely, by positively influencing the EI of
those children as adolescents. It is possible that educated parents’ higher expectations stem
directly from their own educational achievements. While it is likely that less educated
parents hope that their children go on to further their education as they were unable or unwilling to do, they may not have the full force of parental expectation behind them as they understand first-hand the difficulties that they themselves were unable to overcome. As suggested by Singh et al. (2007), the educational level of parents may also affect their feelings of competency and adequacy in their parental role. These feelings would likely positively influence their confidence as parents and would allow them to provide positive models for stress management and adaptive ability in particular as these are skills that often require a degree of innovation and inventiveness and those parents would have a wide variety of experiences and exposures from which to draw. It may also be the case that those parents with higher levels of education allow their children more freedom to experiment with their own EI abilities and so offer them increased opportunity to practice those skills. Any combination of these factors could have resulted in the higher stress management, adaptive, and overall EI abilities that were measured in those students whose parents had completed at least some post-secondary schooling compared to the students whose parents had not completed high school.

**Summary of the Collected Demographic Findings**

There were many significant results found for certain of the demographic categories used to collect data as part of this research. The greatest number of statistically-significant differences between the scores of the adolescent participants’ EQ-i:YV assessments were found when the scores were grouped according to whether or not the parents were employed in an education-related field, although it is likely that these differences were as much a function of the amount and type of post-secondary education that teachers typically complete rather than a reflection of the field of parental employment alone. The differences
that were found when the data were sorted according to the parents’ highest level of completed education, in concert with the justification for those differences taken from the extant literature, provide some support for this observation. Many of the demographic results were not obviously connected to the correlation between parental trait anxiety and adolescent stress management ability. This lack of obvious relatedness was not the case for the family togetherness data where the differences and correlations noted generally had connections to the literature make themselves apparent almost effortlessly. These various results will now be explored at length.

**Analysis of the Family Togetherness Findings**

Parent-child connectedness has been repeatedly associated in the development of EI in children (Cassidy, 1994; Goleman, 1995; Gottman, 1997; Gottman et al., 1997; Hughes, 2009; Karen, 1998; Saarni, 1999; Siegel, 1999; Szalavitz & Perry, 2010). As such, a number of questions meant to expose possible trends in the amount of time parents and children spent together during the week were conceived of as a proxy for measurements of connectedness. This delegation of time measures was based in part on information from Dr. Gordon Neufeld’s 2006 professional development seminar in Williams Lake, BC, and Neufeld and Maté’s (2004) suggestions that it is in spending time with their children that parents are able to maintain connections with them throughout the difficult years of adolescence in particular. Based on these observations and the observations that meals shared as a family have a protective effect on adolescent health and EI in terms of decisions around risky behaviours (CASA, 2005; Eisenberg et al., 2008; Eisenberg et al., 2004; Fiese & Schwartz, 2008; Fulkerson et al., 2006; Neumark-Sztainer et al., 2010; Sen, 2010), it
seemed likely that looking at student/caregiver time together during mealtimes and at other
times would be a fruitful avenue in the quest to connect parental anxiety and adolescent EI.

According to a 2000 report commissioned by the US Council of Economic
Advisors, the greater the extent to which parents are involved in their children’s lives and
the closer teens feel to their parents, the less likely those teens are to engage in problem or
risky behaviours. As such, parental involvement in and connectedness to their children’s
lives may be viewed as conducive to the development of adolescent EI abilities. Besides
the correlation between parental trait anxiety and adolescent stress management, a variety of
other correlations were measured between aspects of family togetherness and the anxiety
and EI scores. These will now be explored in two subsections as the first measure, shared
family meals, had the greatest number of significant results and nearly the same number as
the other three measures combined (as they are here). It should be noted that the concept of
good enough parenting, based on Winnicott’s (1965) conceptualization of the good enough
mother, is implicit (and occasionally explicit) in this section as this concept is taken to be a
sort of baseline for parental competence and ability.

Significant Differences Based on Frequency of Family Meals

As previously noted, family meals have been noted to be important to the emotional
health of adolescents (CASA, 2005; Eisenberg et al., 2008; Eisenberg et al., 2004; Fiese &
Schwartz, 2008; Fulkerson et al., 2006; Neumark-Sztainer et al., 2010; Sen, 2010). When
organized by frequency of family meals, the differences measured between the means of the
EQ-i:YV scale’s scores for this research were more plentiful than for any of the other
family togetherness indices.
As determined by the 2005 CASA survey, adolescent children from families that share more than three dinners a week together generally have lower incidences of alcohol, tobacco, and marijuana use; higher grade point averages; and fewer depressive symptoms. This current study’s finding adds to that list of benefits. As it was found that children of parents who shared three or fewer meals a week with them had significantly lower scores on the Intrapersonal, Stress Management, General Mood, and Total EQ scales of the EQ-i:YV than those who shared either four to six or seven or more meals per week, the cut-off of three meals a week for the conference of benefits to children was supported. The particular scales affected are in themselves significant as they are those that have more to do with introspective aspects of emotional functioning rather than the social. While it might seem to make more sense that spending greater amounts of time over meals with one’s parent(s) would have the most noticeable effect on abilities associated with relational abilities such as those purported to be measured by the Interpersonal scale in particular, it is actually very reasonable that shared mealtimes would positively influence those scales that measure children’s comfort and facility with their emotions. Reasons for this influence will now be explored in light of the literature on the importance of family meals.

Sharp, Fonagy, and Goodyer (2006) suggested that the entire family plays a role in the development of children’s socio-emotional mentalization abilities. In their paper examining the ability of mothers to predict their children’s responses when those children were asked to use their own mentalization capabilities with peers in distressing situations, Sharp and his colleagues noted that mothers who had the highest levels of correct predictions had children with the lowest measures of child psychopathology. They proposed that an important factor in the development of this maternal accuracy was
increased levels of mentalization within the context of the family and the amount of mental-state conversation in the family. As mealtimes are a prime opportunity to talk about feelings, this time together could be part of the reason that higher numbers of shared meals result in higher levels of EI in children, particularly for the Intrapersonal scale as this scale is meant to be indicative of an ability to recognize and name emotions.

It could also be possible that an increased opportunity for interaction with siblings at the dinner table helps explain the higher mean EI scores for those participants that shared four or more meals a week with their family. Gass, Jenkins, and Dunn (2007) found that positive sibling relationships are an important source of support for children, especially those children who are experiencing stressful events. As children who experience stressful events are more likely to develop emotional difficulties (Swearington & Cohen, 1985), a strong support system could help somewhat prevent this eventuality. With respect to the positive influence of family meals on intrapersonal and stress management abilities in particular, it is likely that anyone with a sibling has found them aggravating at one time or another so it is possible that having to work on emotion regulation and stress management skills in order to have peaceful mealtimes might be partially responsible for these skills being strengthened. Information on the total number of family members participating in the family meals was not collected as part of this research, as such it was not possible to test the possibility that the presence of siblings at the table was positively related to adolescent EI. There was, however, information collected on the number of children in the home and the number of those that were related to the caregiver, neither of which returned any statistically-significant differences between the EQ-i:YV scores of the student participants. Regardless of the influence of siblings at the table, meals shared between parents and their
Parental Trait Anxiety and Adolescent EI

children have been indicated to be important to higher levels of adolescent EI, as have certain other indicators of time spent between the children and caregivers.

Significant Differences Based on Other Measures of Family Togetherness

Besides meals together, measurements of the approximate number of hours the student and caregiver spent together during the week and the weekend and the number of activities shared by the student and caregiver were also shown to be suggestive of statistically-significant differences in the means of some of the EQ-i: YV and STAI scores. As with the shared meals, it is likely that the more time a parent spends with his/her children, the more those children are able to try out a variety of coping strategies as they experience various emotions in the supportive home atmosphere. In this way, those children will eventually be able to tolerate and moderate their emotions to the extent that they are able to work effectively through their own strong emotion as well as others’ (Gottman et al., 1997; Saarni, 1999).

By maintaining the close connections so espoused by Neufeld and Mate in particular (2004), parents are able to positively influence the development of their children’s EI, particularly for those skills related to self-regulation as once again, the Interpersonal scale of the EQ-i: YV did not return any statistically-significant results. This single scale was the only one not to have any statistically-significant differences between the means of its groups when organized according to one of the family togetherness measures. As hypothesized for those scales that were found to have significant differences based on shared meals, it is plausible that abilities related to identifying, managing and regulating one’s own emotions would be those that are most influenced by time spent with family. In a family situation characterized by good enough mothering anyhow, the home environment
should be one where children feel safe enough to be themselves and make mistakes so that they may learn appropriate self-regulatory skills from their present and supportive parent(s).

A particularly interesting finding was that there were four scales for which a statistically-significant difference was found for the measure of time spent together during the weekend and only one scale for which this difference was found for the time during the week. Even more curiously, the scale that did achieve significance for the measure of time spent between the parents and students during the week was not one of the four that did so for the weekend measure. In terms of the number of significant differences noted for the week compared to the weekend, this observation could be related to the sample composition. As a substantial portion of the sample was employed in the field of education and teachers do not work weekends, it is possible that this trend could somewhat account for the noticed differences in the amount of time spent on weekends as those caregivers that worked in a school setting would be more available to spend the time with their children than parents who had to work weekends.

The observation that the development of intrapersonal abilities seems to be more reliant on time spent together during the work week while stress management, adaptability, mood regulation and total EI skills are more affected by time spent between the parents and students on the weekend may be related to the types of activities that are generally scheduled for those times, regardless of caregivers' occupations. Whereas much of the day during the week is often spent apart from one's family as work or school tends to dominate much of both adults' and children's lives, the weekend offers many people a chance to reconnect with their family at times other than during the evening meal (for those that share that habit). While additional information would need to be collected, it is possible that the
development of skills related to the Intrapersonal scale of the EQ-i:YV such as recognizing and communicating one's own feelings is more readily accomplished in an atmosphere that allows for children to have some one-on-one attention from parents such as they might have at the dinner table or while catching up before bed.

There is a caveat for the interpretation of these results. For those EQ-i:YV scales that demonstrated statistically-significant results for both the shared meals and one or more of the other family togetherness measures, it is possible that the weekly and weekend measures of time together were measuring the time spent together at meals as this time was not excluded from those categories. This possibility is also true for the shared activities measures as, while eating was not included as one of the activities in that category, at least one participant did include that as a shared activity under the Other category of this part of the survey. As there were no controls for the possible confound that the inclusion of time spent together during meals was the most significant part of any of the other measures, further research is required in order to more finely delineate the extent to which it is purely time spent with the caregiver or specifically time spent at meals that most strongly influences the development of EI.

One difference between the shared meals results and those for the other three measures of time spent together was the finding of a statistically-significant difference between the means of the weekend hours' and shared activities' Adaptability scale scores. While no differences were found between the means of the Adaptability results based on shared meals, there does appear to be a connection between the two as a statistically-significant correlation was measured between the two, a finding that will be deliberated in the next section.
The Adaptability scale is meant to be indicative of individuals' flexibility, realism, and effectiveness in managing change and finding flexible ways to deal with everyday problems (Bar-On & Parker, 2000). Being that the dinner table may not be as variable of an environment as those that might conceivably be visited over a weekend or shared during an activity such as a sport or an outdoor recreational pursuit, it makes sense that children would have more opportunities to acquire skills that bolster their adaptive abilities outside of the family mealtime.

Summary of the Collected Family Togetherness Findings

Analysis of the EQ-i:YV and STAI scores according to assorted indicators of time spent together between the caregivers and children returned numerous statistically-significant results. As was predictable based on the amount of literature addressing the phenomenon, family meals were found to have a substantial observed effect on the measurements of adolescent EI. This effect was indicated by the unearthing of statistically-significant differences between two pairs of groups in four of the six scales of the EQ-i:YV. Also, the meals comparison had differences found between the same groups’ STAI scores, the only category to do so. The weekend hours per day category returned differences in the same number of scales as the meals per day category, but whereas family meals were found to have eight significant differences between the same two pairs of groups, the nine significant weekend results were dispersed among a variety of comparisons. Fewer statistically-significant results were found between the scores when grouped by hours together per day during the week (one difference) and shared activities (three differences). As so many of the measures of family togetherness resulted in statistically-significant differences between the EQ-i:YV scales’ means, it was decided that it might be worthwhile
to explore these measures a bit further by testing to see if any of them were significantly correlated with the STAI T-Anxiety and EQ-i:YV scales. These correlations will be reviewed and discussed in the next section.

**Analysis of the Family Togetherness Correlations.**

After examining the family togetherness data in terms of the differences between the means of the EQ-i:YV and STAI scores, a correlation between the measures of time and the sets of scores was tested using Pearson's $r$. The hypotheses for the EQ-i:YV and STAI scores were opposite each other where it was predicted that increased time spent together would be related to higher EQ-i:YV scores and that lower STAI scores would be related to decreased time spent between the students and caregivers. Each of these scenarios will now be considered in depth with the rationale behind these hypotheses being explained in terms of the clues that led to their formulation. As possible relationships between the collected measures of family togetherness and the EQ-i:YV results have already been discussed at some length in the previous section, this section will concentrate on justifying these rationales and providing support for arguments that have yet to be well-documented rather than repeating the details that have already been deliberated.

**Correlations between Family Togetherness and EI**

As was presented in this chapter's section summarizing the relevance of the family togetherness findings in terms of differences in the means of the EQ-i:YV scores, there is a growing body of research that suggests that family time has measurable positive results on EI development. In particular, the 2005 CASA and 2000 US Council of Economic Advisors reports led to the development of the hypothesis that EQ-i:YV scores and time with family would be positively correlated. Both of these reports highlighted the
importance of parental involvement in mitigating poor or risky choices in children's lives, evoking a link to various EI abilities. As such, it seemed logical that the greater the amount of time parents indicated spending with their children, the greater those children's EI as indicated by their EQ-i:YV scores, ergo the given hypotheses for the six scales of the EQ-i:YV.

All of the EQ-i:YV scales except the Interpersonal were found to be significantly positively correlated with two or more of the family togetherness measures. The Interpersonal scale was not found to be significantly correlated with any of the measures, although it narrowly missed achieving significance at $\alpha = .05$ when grouped according to shared meals as the $r$ value for this relationship was assessed as being .167 for $p = .067$.

For each of the family togetherness measures, it was hypothesized that the students' EI would increase with the amount of time spent between those students and their parents. As the direction of the relationship was predicted for each case, these were one-tailed tests.

Where no significant results were measured for the Interpersonal scale, the Adaptability scale returned statistically-significant correlations between it and every single one of the family togetherness indicators, with the strongest relationship being measured for the number of activities shared per week. As conjectured in the previous section wherein the differences in means were explored in terms of the family togetherness measures, it is reasonable that children's adaptive abilities would be influenced by spending time with people who were older and more experienced in coping with the vicissitudes of everyday life. The transmission of adaptive abilities would likely be accomplished largely through some combination of parental modelling and supportive conversation along the lines of "what would you do" scenarios as these phenomena are some that have been linked to the
development of children’s resiliency, a construct that shares many commonalities with Bar-On and Parker’s (2000) defining characteristics of the Adaptability scale: flexibility, realism, and effective skills at managing change. According to the psychologist Julius Segal (as cited in Brooks & Goldstein, 2001), children who have even just a single “charismatic adult” who they can emulate and from whom they can “gather strength” are more likely to be able to rise above adversity and meet significant challenges without falling prey to resignation borne of defeatism. In other words, they are able to adapt to their situation and find ways to cope with their circumstances until they are able to overcome them. It is possible that this concept of the “charismatic adult” underlies all of the correlations observed in this research as skills relevant to many, if not all, of the EQ-i:YV scales could conceivably be learned and/or improved with the influence of one positive adult role model, whether or not that person was a biological relative.

Besides adaptive ability, it appears that overall EI may also be related to time spent with a parent as the Total EQ scale returned significant results for all of the indicators except shared activities, a near miss with a \( p \) value that exactly equalled the given \( \alpha \) of .05 and so missed achieving significance by the narrowest of margins. Bar-On and Parker (2000) described individuals with high scores on the Total EQ scale as “generally effective in dealing with daily demands and... typically happy” (p. 19). As will be investigated further in the upcoming section looking at the relatedness of parental anxiety to time spent together, it is possible that this observation that overall measures of EI increase as time spent with parents increases is due at least in part to the previously described bidirectionality of influence between children’s temperament and parenting practices (Chess & Thomas, 1999; Coplan et al., 2009). If children are happier and easier to get along with,
Parental Trait Anxiety and Adolescent EI

it may be that parents are more likely to spend time with them and, in the process, reinforce some of the EI abilities that enable those children to regulate their affective responses in the first place. Again, this possibility will be deliberated in more depth in the following section.

**Correlations between Parental Anxiety and Family Togetherness**

The hypothesized relationship between parental trait anxiety as measured by the T-Anxiety scale of the STAI and the various indicators of time spent between the parents and their adolescent children was based largely on the hyper-parenting literature. Nelson argued that the parenting practices of the professional middle-class are focused on working to shape their children’s abilities in almost every way conceivable out of “a deep conviction that children can be ‘modified’ to conform to parental expectations” (p. 133), largely through extracurricular activities and classes. This observation was in marked contrast to the other two groups of parents in her sample, the groups that are likely to more closely correspond to the parent participants of this current work as the members of Nelson’s professional middle-class group consisted largely of professions where a Master’s degree was the minimum qualification for membership, and there were very few or no participants meeting that minimum criterion in this sample.

The hyper-parenting literature offered a similar caution against overly overscheduling one’s children in the name of optimizing their ‘potential’ (Honore, 2009; Rosenfeld & Wise, 2000). It is imaginable that fixating on one’s children and their achievements might be at least somewhat borne of parental anxiety around their children’s eventual chances for ‘success’ so it made sense that increased levels of parental trait anxiety would lead to greater numbers of children’s activities outside the home and less time spent
Parental Trait Anxiety and Adolescent EI

with the parents. Referring again also to the work of Woodruff-Borden et al. (2002), if anxious parents are more likely to be withdrawn with their children, this observation could also lead one to anticipate that more anxious parents would spend less time with their children and help explain the measured correlation between higher STAI scores and lower measures of time spent together between the student and caregiver.

While neither hours per day measure achieved significance based on the STAI T-Anxiety scores, there was a moderately strong correlation measured between lower parental anxiety and increased frequency of meals those parents shared with their children. Brooks and Goldstein (2001) posited that children who have parents that are unable or unwilling to accept them for who they are rather than who their parents hoped or anticipated they would be are primed for defeatist patterns of behaviour. It is conceivable that this predisposition might be related to parental anxiety, particularly if parents felt their aspirations for their children were being intentionally frustrated. Although no indications of children’s temperaments were collected for this research, it could be that a mismatched fit such as that described by Chess and Thomas (1999) contributes to parental anxiety which then leads to those parents avoiding intimate interactions during which they are faced with their frustration and/or disappointment in their children such as might happen when sitting down together to eat. This pattern might be one way by which a reciprocal relationship between children’s temperament and parenting practices might be enacted with older children and continue to influence those children’s emotional development as predicted by researchers such as Boutelle et al. (2009), Coplan et al. (2009), and Whaley et al. (1999).

The work of Coplan et al. (2009) may be especially relevant here as she and her colleagues hypothesized the existence of a positive feedback loop between maternal anxiety
and children's shyness in particular where the existence of such a loop would involve the mutual maintenance of each construct by the other. Specifically, they conjectured that parents' perceptions of their children and those children's temperaments served to elicit particular parenting practices. These practices then functioned as reinforcing mechanisms for those children's temperament and, ultimately, their personality as temperament has been linked to both personality (Chess & Thomas, 1999) and development of EI (Kagan & Snidman, 1999). As such, it is possible that parents trying to cope with their anxiety do not make the effort to sit down and eat with their children more than three times a week and, in not doing so, do not provide their children with sufficient modelling of or opportunity to talk about skills that would then lead to those children's increased EI skills such as stress management and adaptability.

As parental trait anxiety was also negatively correlated with the number of activities parents shared with their children, it is likely that a similar mechanism is at work behind that observation. Just as anxious parents may be less likely to partake of meals with their children, so might they be less likely to participate in shared activities. This correlation was not as strong as that between parental anxiety and shared meals, perhaps indicating that it is easier for anxious parents to spend time with their children in a setting where they are able to focus their attention on an external activity rather than on each other over a shared meal. More work would need to be done to truly elucidate the nature of any differences that might characterize time spent over meals or activities. With the number of statistically-significant correlations noted for this work alone, it is anticipated that there could be a lot more to explore in terms of relationships between time together and both parents' and children's personality characteristics.
Summary of the Collected Family Togetherness Correlations

Overall, there were 13 statistically-significant one-tailed correlations measured between the family togetherness indicators and the EQ-i:YV scales and two measured with the STAI T-Anxiety results. Those measured for the EQ-i:YV results were all positive, indicating that adolescent EI likely increases as the amount of time those adolescents spend with their parent or parents increases. The two STAI correlations were negative, suggesting that as parental anxiety increases, the amount of time parents spend with their children decreases. These observations are in line with the results that were predicted based on the literature reviewed and also with the stated theoretical orientation of this work as Vygotsky (1978) recognized the importance of speech and speaking in solidifying learning, as would likely occur during time spent together by the parents and their children as indicated in this section. By talking about factors related to EI, it is possible that the act of speaking in itself is helping to cement some of the children’s facility with their EI abilities.

Additional Findings

Besides the findings related to the possibility that parental trait anxiety might be connected to and/or influence children’s development of EI, correlations between the student and observer measures of EI as assessed by the EQ-i:YV were also tested. This section will focus on those findings but will also provide a brief look at how the STAI scores measured for this research compare to those of the norming group.

Correlations between the Student and Observer EQ-i:YV Reports

For each scale of the EQ-i:YV, a statistically-significant positive relationship was measured between the student and observer reports of the students’ EI as measured by the EQ-i:YV and EQ-i:YV-O. These correlations are in line with those reported by preliminary
validation studies for the Observer form as described by the developers of the measure. Wood and her colleagues (2009) have obtained reports of correlations between the self-report and parent-reported EI for a small (N=169) sample of gifted students to be between .29 for the Adaptability scale and .39 for the Stress Management scale (Schwean, Saklofske, Widdifield-Konkin, Parker, & Kloosterman, 2006 as cited in Wood et al., 2009) and between .35 for the Intrapersonal scale and .48 for the Stress Management and Total EQ scales for a larger (N = 755) sample of children from a more representative community-based sample (Keefer, Wood, & Parker, 2009 as cited in Wood et al., 2009). The correlations between the student self-report and parent observer ratings for this research ranged between .231 for the Interpersonal scale to .372 for the Adaptability scale, a slightly lower range of values than either of those noted in the two validation studies.

The small sample size utilized for this research makes it difficult to generalize this work’s findings to other situations and also may not be truly reflective of the local population even though a concerted attempt was made to maximize the sample’s variability to avoid an overly homogeneous group; specifically, a group of white, middle-class professionals and their children. It is possible that the lower correlations noted between the student and observer EQ-i:YV forms for this particular piece of work may be one residual result of the still largely homogeneous sample as it is conceivable that a similar portion of the norming group for the EQ-i:YV was responsible for “bulking up” the lower range of that sample’s correlational results but to a lesser effect than has been noted here due to the larger samples and variability of both Schwean et al.’s (2006) and Keefer et al.’s (2009) studies (as cited in Wood et al., 2009). Besides the lower correlations between the EQ-i:YV
and EQ-i:YV-O measures, it is possible that the STAI T-Anxiety scores were also influential in this work's overall findings.

As was reported in the Findings chapter, the means of the raw STAI scores for this research was 35.0 for females and 33.2 for men. These values are slightly lower than the means reported for males (35.06) and females (35.03) in the 40-49 year-old category of the T-Anxiety norm groups, the age bracket to which 59% of the current sample belonged. This lower mean level of anxiety may have affected the observed number and magnitude of the correlations measured during this research. Hampered again by the small sample size, had there been more participants, there may have been a higher mean level of parental trait anxiety measured and a more precise (and arguably more accurate) representation of the effects of parental anxiety on the development and expression of EI in adolescent children. As the measured anxiety levels were slightly less than the norm, perhaps the noted effects were less than would have otherwise been measured as well.

Summary of the Additional Findings

As has been revealed in the preceding section, the use of the EQ-i:YV-O form in concert with the EQ-i:YV form returned confirmation of statistically-significant correlations between those two measures, even though these correlations were of a lesser extent than others that have previously been measured. The magnitude of the mean of the parental STAI T-Anxiety scale scores was also slightly lower than the mean reported by Spielberger (1983) in the manual for that tool. As has been noted previously, it is possible that both of these measurements would have corresponded more closely to those previously reported had the sample size used for this work's data collection been larger.
Limitations and Delimiters

In this section, factors over which it was not possible to have control will be described as either major or minor limitations to the completion of this research work. In addition to this exploration of those factors that were unable to be controlled, factors that were intentionally left without any attempts at control will also be explained, this time under the heading of delimiters.

Major Limitations

For the commission of this research, access was granted to the entire sample of students taking Planning 10 during both semesters of the 2010/2011 and first semester of the 2011/2012 school years in the local school district. Permission was granted to commence research activities during the first semester of the 2010/2011 school year and Planning 10 classes were visited during the second semester of that year and the first semester of the next. Although approximately 240 students were approached in their May, 2011 Planning 10 classes and 120 more during the Planning 10 classes being run in September, 2011, only 29 completed, usable research packages were returned. With the assistance of local teachers and support staff, that number was increased to a total eventual sample size of 83 student/parent participant pairs. As such, small sample size was a limitation of this study.

Out of those participants that did choose to return their completed parent and student surveys, the majority was female, supporting the greater tendency for women to volunteer for research (Holden et al., 1993; Rosnow & Rosenthal, 1976). Although neither student nor parent age showed much variability, this was to be expected as only a specific age of student was recruited for inclusion in this research. There was no such selection for gender.
Even without specific recruitment, however, substantial majorities of both the student and parent respondents' samples were female. Unlike the majority percentage of Caucasian respondents (that corresponded roughly to the local demographic profile and so could be viewed as proportional representation), this gender ratio is in no way representative, and so represents another limitation of this research. The offer of an incentive for participating in the research may also be a limitation as it has been suggested that unpaid volunteers may differ from paid, although not generally so much when the payment is more of a token of appreciation as was done in the case of this research (Dicker & Grady, 1999 cited in Grady, 2005). It has also been suggested that volunteers in general are more likely to demonstrate higher incidences of positive personality characteristics such as extraversion and agreeableness (Carlo, Okun, Knight, & de Guzman, 2005). This is yet one more limitation of this research as the EI and anxiety reports collected may be reflective of a greater proportion of prosocial participants and ultimately inaccurate as a result.

**Minor Limitations**

Other limitations of this research include the self-report nature of the data collected, the obvious nature of what the EI survey was questioning, the inability to determine who completed the parent assessments, the lack of interview measures for depression or other psychiatric illnesses and the absence of information that was collected regarding parenting practices. As parenting tends to be an issue fraught with emotion and social expectation, it is also expected that the data may be somewhat skewed due to underreporting of those attitudes or practices perceived as objectionable in favour of those that are socially desirable. Some bias is also expected to be observed as, while parents were asked to assess their children's EI on a form complementary to that of their children (see Appendix D),
children were not asked to assess their parents' anxiety so these reports are solely based on
the parents' perspectives. Also, no information was collected investigating how long parent
or guardian had known and/or lived with the child, nor were parents/guardians asked how
many children are in family (just how many currently lived in the household). Finally, the
position of the researcher as a white, female outsider to the school may have influenced
certain participants in unknowable ways. As no information was collected to judge the
potential impact of the researcher's identity upon participants' answers or their willingness
to participate, this too must be included as a limitation to this research.

Delimiters

The existence of previous knowledge of EI may have affected the answers given by
the adolescent respondents on the BarOn Emotional Quotient Inventory: Youth Version
(EQ-i:YV) assessments. Additionally, there may be students that answered in ways that
they perceived to be the way that they should answer the questions rather than in a manner
that reflected their actual feelings and/or perceptions, a manifestation of a phenomenon
referred to as demand characteristics. Although it is possible that some students had
knowledge of EI before participating in this research, they were not be apprised of the EQ-
i:YV's specific purposes before taking it. Rather than making direct reference to EI,
permission slips and pre-test explanations describing the research referred to the assessment
aims as measuring emotional fluency or, more specifically, coping skills, adaptability and
well-being, the skill set described by Bar-On and Parker (2000). In this way and by not
intentionally teaching the participants anything about EI or discussing anticipated outcomes
before administering the assessments, it was anticipated that connections between EI and
the current assessments were minimized. Subsequently, so too was the manifestation of
demand characteristics diminished. Even so, the possibility that at least some of the student participants did have previous knowledge of EI was neither tested nor controlled. The possibility that certain student participants did have knowledge of EI and the aims of this study was particularly probable for those students that joined the study after the initial classroom visits as they could have been party to the lesson on EI that was presented to that original group of participants.

With regard to the anxiety assessment employed, the Spielberger State-Trait Anxiety Inventory (STAI), the measure's manual suggested that demand characteristics could be avoided somewhat by avoiding the use of the term “anxiety” during the administration of the inventory (Spielberger, 1983). In order to best accomplish this avoidance of demand characteristics, the target of the parent assessment used for this research was described as evaluating aspects of parental personality or general disposition in order to avoid having participants answer in socially-desirable ways. Additionally, the test form was titled the *Self-Evaluation Questionnaire* to further avoid the manifestation of demand characteristics with the parent group. The STAI manual does suggest that “in research settings, subjects generally respond more objectively and accurately if they are informed that their responses will be kept confidential, and especially, if they are promised feedback about their test results” (p. 9). As such, all participants were reminded of their right to both confidentiality and information. Also, instructions as to how to access the study results were given in a letter accompanying both the permission slips and the parent assessments (see Appendix E). Even with such precautions being taken, it is still possible that parent participants were aware that they were being assessed for anxiety. This awareness may have arisen as a result of the types of questions that were asked on the STAI or it may have predated the
assessment as, due to the need for many rounds of research to assemble a suitable sample, it is possible that parent participants were apprised of the aims of the research before they themselves agreed to participate. As it is unknown which parents may have known about the goals of the research, it is impossible to tell whether the controls implemented with the intent to diminish demand characteristics were sufficient.

As the students that filled out the surveys at school are accustomed to writing tests under conditions similar to those proposed for the administration of this assessment, it was predicted that they would answer the same way that they would were they to be sequestered individually to write the same test. The presence of observers is one of the standard protocols observed during the writing of tests. As invigilators other than the regular classroom teacher are regularly enlisted to help during exam weeks, the presence of an observer other than the classroom teacher was not expected to unduly influence the participants' answers. However, as there were so few participants from any given class, the classroom teachers did not assist in the invigilation of the EI assessments. Because of the small number of participants, the sole observer for the assessments completed during the initial in-school collection was the researcher: an adult from outside the school who was previously unknown to the students, and acting in a role that was likely unfamiliar to them. As this was such a novel situation, it is possible that the students' answers were influenced somewhat by the presence of the observer and that they fell prey to the Hawthorne Effect.

For those participants that completed their assessments in the privacy of their own homes, the Hawthorne Effect was likely negligible. All the adult participants were given at least two days to complete their assessments in their own homes, free from monitoring by any observers other than whoever else might be present in the home. Unless these
participants answers were modified in consideration of or deference to someone reading over their shoulders, no permutation of the Hawthorne Effect was expected to be relevant for these participants. By this same logic, neither should have the answers of those student participants that joined the study after the initial classroom visits been influenced by the Hawthorne Effect as these students also completed their surveys at home where they were, presumably, unobserved. The inability to unequivocally determine whether or not any given participant was either observed or unduly influenced by his/her perception of being observed requires that the potential influence of the Hawthorne Effect remain as a delimiter of this research. Additionally, the fact that all participants knew that they were part of a study may have influenced their answers in some way but this possibility again is unknowable and so must be included as a delimiter.

The fact that all student participants were asked to identify themselves only by the last four digits of their parents’ phone numbers was anticipated to additionally increase their comfort with answering in an honest and straightforward way as it further distanced them from their responses. This anonymity was also meant to encourage parent participants to answer their assessment questions in a manner reflective of their actual feelings. In order to further provide a feeling of anonymity for both the student and parent participants, all assessments were collected in identical, unmarked manila envelopes. By removing the threat that another upon handing in an assessment might see a participant’s answers, it was anticipated that honesty and candour would be further encouraged. However, given that it was impossible to allow participants to remain truly anonymous and still be able to ensure that student and parent data could be matched up and that participants did not take part in the research collection process more than once, it is necessary to include the potential effect
that a perceived lack of anonymity may have had on this study’s results and include that possibility as a delimiter.

This study excluded any students who had taken Planning 10 in a school year other than the 2010/2011 or 2011/2012. Initially, to control somewhat for the possible differences in test scores due to age, it was anticipated that those students who were taking Planning 10 while enrolled in a grade other than Grade 10 would also be excluded but, given the difficulty finding willing participants, exclusion of participants based on age was not considered for this research, as long as each participant was between the ages of 14 and 17. Even if those particular subjects had been excluded, the variation in age typically seen in any given grade year was not controlled. Although the participants’ ages were requested on the EQ-i:YV forms, birth dates were not recorded. As such, student participants’ ages ranged from 14 to 17 even though only students taking Planning 10 in one of two school calendar years were assessed. The fact that there were not any controls for variation in age within those two years is a further delimiter of this research.

An additional delimiter involved the type of assessments that were used for EI. The measurements of EI were not of operational EI as is purported to be measured by instruments such as Mayer, Caruso, and Salovey’s (2000b) assessment, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), but rather of mainly trait EI as is assessed by the EQ-i:YV, a mixed model measurement. As such, this research was not testing student abilities inasmuch as it assessed awareness as measured by the self-reports. The use of self-reports has been defended at length by Wood, Parker, and Keefer (2009) who argued that they are valid with appropriate controls for such potentially confounding variables as grade level and student status (i.e., full or part-time). As both of these variables, in
particular, were controlled for in this study, the measurements of student EI with the EQ-i:YV are not expected to be compromised; however, it was still primarily a measurement of self-awareness rather than ability.

Specific reasons explaining the choice of the EQ-i:YV over other measurements of EI will be reported at length in the Research Procedures chapter of this work. Suffice it to say at this point that the assessment in question was deemed suitable in part because it did not require that extensive arrangements be made for student participants to complete elaborate activities, but only to answer questions on a survey utilizing nothing more sophisticated than a pencil and paper. The logistics in arranging for the use of an ability-based assessment of EI such as the MSCEIT for this research were much more detailed than those required for administration of the EQ-i:YV. As such, this consideration of logistical requirements was in itself a limitation of this research as the decision to go with the EQ-i:YV was partly due to its ease of administration.

O'Connor and Little (2003) tested correlations between EI factors as assessed by the EQ-i and the MSCEIT and ultimately proposed that the two assessments actually measure distinctly different constructs, namely trait and ability EI wherein the EQ-i measures the former and the MSCEIT the latter. EQ-i total scores have been found to be positively correlated with measures of emotional health (Bar-On & Parker, 2000) and emotional stability (Dawda & Hart, 2000). As such, it was an appropriate measure to assess the effects of parental anxiety on the development of EI, even given its most obvious limitation: the self-report nature of the data. The bias introduced through the use of an assessment that relies on self-awareness of emotionally intelligent behaviours and attitudes was tempered somewhat by the parents' evaluations of their adolescents' EIs. Unfortunately, the STAI
had no complementary form comparable to that accompanying the EQ-i:YV and so relied entirely on self-reported perceptions of anxiety.

A final delimiter of this research was the lack of information regarding participants’ reading abilities. Although the proposal for this research included a provision that any student participant that needed assistance with reading would receive said assistance from a teaching assistant that was known to the student, the reality of the data collection process precluded such a possibility for the majority of the participants. As the bulk of the assessments were completed outside the school environment, it was incumbent upon most of the student participants and all of the parent participants to figure out what was being asked of them and which answer best suited them. No learning support was offered for participants who joined the study after the initial school collection and, of those students who did participate in the initial collection, no students admitted to desiring extra help. As all of the assessment tools used for this research required that participants be able to read, yet no indications of reading ability were collected or included, this represents a final delimiter for this research.

Chapter Summary

The preceding chapter has highlighted the relevance of this research’s results and connected them both to each other and to the extant literature. The answer to the central research question of this work was not found to be as significant as predicted, but there were numerous results that supported the existence of a connection between parental trait anxiety and adolescent EI. Each of the three areas explored in terms of their relevance to the central research question will now be summarized individually in order to provide a
comprehensive picture of the significant findings of this research and their relationships to the extant literature.

The measurement of a correlation between parental trait anxiety as assessed by the T-Anxiety scale of the STAI, and adolescent stress management ability as assessed by that scale of the EQ-i:YV was the only statistically-significant finding from this first foray into this work’s data analysis. Even though only the one connection was quantified, it was one that made a great deal of sense based on the literature connecting the effects of parental anxiety to the development of EI via compromised attachment and behavioural inhibition.

Based on the demographic information collected as part of the parental survey package, a number of statistically-significant differences were measured between the means of certain of the EQ-i:YV scales. The EQ-i:YV data were found to have differences when grouped according to student gender, student age, whether or not the parent was an educator, and the highest level of education completed by the parent. Whereas student age and student gender only returned indications of a statistically-significant difference in one of the EQ-i:YV scales when grouped according to that variable, parental employment and education had differences in five and three of the scales, respectively.

The four indicators used to estimate the amount of time the student/caregiver dyads spent together in a week returned a variety of statistically-significant results. The greatest number of statistically-significant differences (five) was found when the EQ-i:YV data were organized according to the number of meals caregivers and students shared in a week. Time together on weekends was a close second with four scales indicating significant differences. When grouped according to number of shared activities there were three scales with statistically-significant differences between the means and there was but a single scale
with such an indication when the data were sorted by amount of time spent together during the week.

The next chapter will conclude this thesis by summarizing all of the findings and conclusions of the preceding chapters. This concluding chapter will integrate the suppositions put forward in the Discussion based on the findings in Chapter 4 and the techniques described in Chapter 3 that were proposed as a result of the background provided in the Literature Review that shored up the possibility of a relationship between parental trait anxiety and adolescent EI as was proposed in Chapter 1. As such, this last chapter, Conclusions and Recommendations, will tie this work together and make suggestions for further research based on its findings.
Chapter 6 – Conclusions and Recommendations

This thesis commenced with a description of the conditions that led to the research question under consideration in this work: Is there a statistically-significant correlation between parental trait anxiety and the EI of those parents’ adolescent children? Chapter 1 provided an overview of the research question: its genesis, its guiding theoretical framework, and key terms. Chapter 2 summarized pertinent research exploring relevant aspects of both anxiety and EI and connected the two terms to each other through their respective relationships to attachment bonds between parents and their children. Based on the work encapsulated in that chapter, a plan to test the existence of a relationship between parental trait anxiety and adolescent EI was developed and described in Chapter 3, the Methodology. This third chapter also included a description of the ways in which demographic and family information would be collected and utilized. The findings that resulted from the research methods described in Chapter 3 were presented in Chapter 4 and were dissected in consideration of the literature in Chapter 5. This sixth and final chapter will now synopsise the conclusions that may be drawn from this work and consider potential impacts and future directions of those conclusions.

Conclusion to the Research Question

This research was centred on a single question: Is there a statistically-significant relationship between parental trait anxiety and adolescent EI? As a correlation of \( r = -0.201 \) was measured between parental anxiety and stress management ability, the answer to this question appears to be in the affirmative. Although there was a statistically-significant finding, the small sample size limits the generalizability of this finding. This does not mean that it is unlikely that children’s EI is related to parental anxiety, only that the current
sample may have been insufficient to satisfactorily measure the actual relationship for certain of the variables. It is also possible that, for at least some of the relationships assessed, the actual relationship as measured by effect size is to a lesser extent than was predicted at the onset of this research and would require a much larger sample to effectively measure. Regardless of the measured finding, there is support for the existence of a relationship between parental anxiety and children's development of EI.

A variety of factors could be responsible for the observed relationship between parental anxiety and adolescent stress management ability. Parental modelling of stress management is very likely foremost among these factors as it has been implicated in the development of children's stress management abilities (Gottman, 1997; Gottman et al., 1997; Rutherford, 2003; Saarni, 1999; Woodruff-Borden et al., 2002). By watching how their parents cope with and manage stressful situations, children may learn how to deal with stress in their own lives and incorporate their parents' coping methods into their own repertoire of affective responses. This type of learning would be largely implicit although it would likely be even more effective were explicit instruction on the part of parents also given to the children (Gottman, 1997; Gottman et al., 1997). It is possible that a dearth of both this implicit and explicit instruction by anxiety-prone parents may be at least partly responsible for the noted decrease in adolescent stress management ability as parental trait anxiety increases.

Having an anxious parent may result in children's behavioural inhibition (Muris et al., 2010), which in turn may impair those children's abilities to manage stress (Kagan & Snidman, 1999; Nichols et al., 2001). This connection could be conceivable as it is mediated by the quality of attachment between parents and children as secure attachment
Parental Trait Anxiety and Adolescent EI

has been found to be positively related to higher levels of EI in children (Boutelle et al., 2009; Hamarta et al., 2009; Kafetsios, 2004) and has been noted to be negatively impacted by parental anxiety (Fonagy, 2003; Slade, 2007; van IJzendoorn & Bakermans-Kranenburg, 2004). More information is needed to truly trace the influence of parental anxiety on the development of EI, particularly in terms of attachment history and past psychological diagnoses of the study participants.

While the answer to this primary research question appears to be in the affirmative, it must be recalled that the measured magnitude of the relationship was to a lesser extent than was predicted. Even so, it may actually be more significant than was measured by this thesis’ central statistical test as there is a substantial body of research that suggests the importance of parents and parenting in children’s personality. While only one of the six EQ-i:YV scales was found to be significantly correlated with parental anxiety as measured by the STAI T-Anxiety assessment, the findings based on the demographic and family togetherness measures that were assessed using the demographic survey suggest that the two constructs may be more related than the single correlation suggests. This possibility will be précised in the following section.

Other Conclusions, Study Impact, and Further Research

Besides testing a correlation between the STAI and EQ-i:YV scores, the collected results of each of these assessments were also analyzed based on a number of demographic and family togetherness measures. These results will now be summarized, after which the impact of this study and potential future directions will be explored.
Other Conclusions

Along with measuring the parental trait anxiety and adolescent EI of the study participants using the STAI T-Anxiety and EQ-i:YV assessments, a demographic survey was also used as part of the data collection process for this research. This survey was divided into three parts: demographic information about the parent participant and the household, indications of family togetherness, and parenting trends. This third part, parenting trends, did not return any statistically-significant results and so was excluded from the rest of this work.

Conclusions based on the demographic information. The demographic information collected over the course of this research was analyzed based on the grouping of the adolescent EQ-i:YV scores and parental STAI scores according to the various categories. Based on the statistically-significant findings noted in this part of the research, it appears likely that EI might be influenced by a variety of factors. Differences between groups of students’ EQ-i:YV scores were found based on some but not all of the demographics included in this section of the survey, the most numerous of these being based on parents’ educations and fields of employment. This finding is likely another indication that further research is warranted in order to determine what it is about education in particular that would lead to such measurable differences.

As parental education has been found to affect parenting practices in a variety of ways (Kang & Jaswal, 2006; Kelley et al., 1992; Nelson, 2010; Singh et al., 2007), further information about the mechanisms by which this influence occurs may be beneficial in order to determine whether it is a result of the educational attainment or some common characteristic of those people who choose to strive for that attainment. If it were possible to
provide the parenting-related benefits of higher education to those people who were unable or unwilling to complete programs that might bring about those benefits organically, it could be worthwhile to understand the particulars involved in the conference of such benefits. It might also be beneficial to test any additional information collected on parents’ level of education for correlations between both those parents’ anxiety levels and those parents’ children’s EI as correlations were noted for a variety of other measures that had statistically-significant differences noted when the mean STAI and EQ-i:YV scores were compared based on groupings from the demographic survey.

Conclusions based on the family togetherness indicators. It is possible that this category was the most fruitful avenue explored during this research. By collecting information based on four different indicators of time spent together by the parents and children, it was possible to assess that information both for differences in the means of the adolescent EI and parental anxiety levels when grouped according to those differences, and also for correlations between those measures and the indicators.

As predicted by the literature exploring the importance of meals shared between parents and children, there were numerous effects noted based on the frequency of meals parent participants indicated as sharing with their children. These effects included both differences between means and correlations between the measures of time and the two main assessments. The greatest number of statistically-significant relationships was found when the data were stratified by number of meals shared per week. Looking at the ANOVA, those families reporting three or fewer shared meals a week reported significantly higher parental STAI scores and significantly lower mean adolescent EQ-i:YV scores on four of the six scales. This finding was in line with the 2005 CASA survey that found that
adolescent children from families that share more than three dinners a week generally have lower incidences of alcohol, tobacco, and marijuana use; higher grade point averages; and fewer depressive symptoms. It is reasonable that these results might also be indicative of students with higher levels of EI and positive, non-anxious parental role models, however more research would need to be done to connect these directly.

When the same shared meals data were assessed using a Pearson's correlation, both the STAI and four of the six EQ-i:YV scales again returned a statistically-significant result, although there was a one scale difference between the two statistical tests as the ANOVA indicated significantly different means on the Intrapersonal scale but not the Adaptation whereas a correlation was found for the Adaptation scale but not the Intrapersonal. Based on this result, it is possible that the differences between the means of the meals' Intrapersonal scores were reflective more of the fact that the shared meals increased the amount of time the parents and children were spending together rather than due to any inherent characteristic of the meals themselves. An inability to excise the amount of time in the non-meal measures that might actually have been spent sharing meals is one limitation of this work that might conceivably be addressed in subsequent research along these same lines. This inability might be of particular importance as there is already a considerable volume of research supporting the importance of shared family meals and not so much that is as readily accessed on other, non-mealtime measures of time spent together in families.

While there does not appear to be the same volume of research investigating the impact of time spent by parents with their children outside of mealtimes, it appears likely that productive conclusions might be drawn out of further exploration of those phenomena. It is more than likely that these conclusions would be in support of the shared family meal
Parental Trait Anxiety and Adolescent EI

literature as, being that there were numerous significant findings for each of the measures of
time spent together, it is possible that part of the reason shared meals are so important is
because it offers an opportunity for shared time. Whether it is significant that a parent and
child are engaged in some kind of shared activity or just spending time together but possibly
differently occupied is an area that would likely benefit from further research in order to
help isolate those family togetherness factors that are most influential. Regardless of the
questions yet unanswered, this research’s results have suggested at least a couple of
possible impacts.

Study Impact

The main impact of this research is the suggestion that parental trait anxiety may be
related to adolescent EI, at least in the embodiment in which it was measured by the EQ-
i:YV in the adolescent participants. Outside of the anxiety and EI research communities,
this finding is likely most significant for the development of and encouragement for new
aspects of parenting programs, although it would be beneficial to first try and more
precisely identify the mechanism(s) by which parenting influences EI in order to tailor
parenting programs to address likely concerns. As it has been proposed that early
intervention programs in particular are successful to the degree to which they are able to
successfully enhance parental reflective functioning (Slade, 2006), it might be that
mentalization ability would be a valuable first avenue to explore. It is plausible that this
ability would influence EI by helping to optimize attachment relationships between parents
and their children since, as summarized in Lieberman and Van Horn’s (2008) book on
psychotherapy with young children, it is in working to build and maintain the attachment
bonds between parents and their children, particularly young children, that one can help
Parents learn ways in which they can restore children's developmental momentum in risk situations. At her March 2012 training on attachment and caregiver behaviours associated with disorganized attachment in Kamloops, BC, Diane Benoit repeatedly asserted that disorganized attachment relationships are at the root of much emotional and social impairment. By working with parents and children from an attachment-restoring or attachment-preserving perspective, practitioners might help parents minimize many of the behaviours that Benoit revealed to be disorganizing for children while also helping to support those behaviours that help to maintain or support the development of EI as were revealed in this research.

It is not just to young children that these parenting interventions could be targeted. While examining the possibility that changes in child personality are related to adjustment problems for children during their transition to adolescence, Van den Akker, Deković, and Prinzie (2010) found that over-reactive parenting is related to externalizing problems. They suggested that, even though adjustment problems were found to be more closely related to changes in personality than to over-reactive parenting, interventions meant to address over-reactive parenting practices might help defray externalizing behaviours as children move into adolescence.

Regardless of a child's age, it is necessary to acknowledge that there is still much to be determined regarding the influences parents have on their children. As Grienenberger (2007) said, "when parents encounter a supposed expert in child development who can acknowledge that there are no simple answers when it comes to parenting, it frees them from the belief that they should always immediately know what to do. Thus, parents are less likely to respond in reflexive, concrete or misattuned ways" (p. 672). As such, this
research has further impact in its findings that it may be in the simplest of interventions that parents can act to support their children’s development of EI. As parents and children spending time together and sharing meals in particular were indicated as being likely factors in children’s development of higher levels of EI, and as these would likely be relatively easy things for parents to implement in their families, knowing that just spending some quality time with their kids could be beneficial for both the kids and the family might help take some pressure off parents. This knowledge might also help them reduce their anxiety somewhat if they are able to spend greater amounts of time with their children as they could then somewhat relax their expectations regarding what might be necessary to raise capable and resilient children.

**Further Research**

A number of possible directions have already been mentioned, particularly in terms of further research into the possibility that attachment security may have been particularly influential in this work’s findings. In particular, some kind of indication of attachment status between the parents and students would have especially been useful in order to more precisely describe the sample that was collected. Such an indication would have been of particular pertinence to the research question at hand as it appears from the literature that this status may have notable effects on the parent-child relationship even well into adolescence. In particular, attachment has been implicated in the transmission of parental anxiety and as a negative influence on children’s achievement of certain EI skills and so could have possibly assisted in linking the two directly.

There were other factors that would have strengthened the returned results of this research’s data analysis. First, if it had been possible to increase the sample size even more
than was achieved through the addition of the four extra rounds of participant recruitment, this change would likely have had considerable ramifications for the results. The small sample size was probably the greatest limitation of this work, however the collection of additional information likely would have also made meaningful contributions to this work.

With regards to the fact that there were a number of participants whose scores on one or more of the General Mood scale, Positive Image scale, and/or Inconsistency Index indicated a need for caution when interpreting results, more information would have been helpful. Again, a larger and more diverse sample size, in particular, could have helped solidify the picture of the relatedness of parental anxiety and adolescent EI as it would have at least reduced the influence of the few outlying results on the results as a whole.

Additional information that could have possibly helped to pinpoint the source of the differences and relationships noted include: assessments for or information on clinical diagnoses of the participants (e.g. for anxiety or depressive disorders); information to conclusively determine whether a biological parent lived in the home in those cases where he/she was not the one answering the parental portion of the survey package; and, knowledge of time spent with family members other than the parent respondent.

In addition to those that have already been noted, future directions for research in this area could include scrutiny of the hyper-parenting construct as there does not, as yet, appear to be much peer-reviewed research on the subject. By studying, delineating, and describing practices that might be indicative of a hyper-parenting style, it would be possible to confirm or deny both the existence of such a phenomenon and also begin to look at how parenting practices so informed may impact both children and parents over the long term. In order to establish or discard it as a legitimate parenting model, there are many aspects of
the hyper-parenting construct that would benefit from close examination. To accomplish this legitimacy, or lack thereof, research into hyper-parenting could include:

- Development of explicit descriptions of parenting practices that may be indicative of hyper-parenting in order to identify those practices that are common to the hyper-parent phenotype. Essentially, this would involve developing a sort of taxonomy of parenting practices with the aim that all future researchers would have a means to reliably code parents as either 'hyper' or not. Additionally, it would provide a new tool for parents to self-assess and self-monitor their own practices.

- Comparisons of anxiety levels in parents identified as utilizing hyper-parenting practices and those who do not. By assessing anxiety in parents prone to hyper-parenting, it may be possible to determine whether that parenting style is one that may be indicative of anxiety. Should there be indications to support such a connection, it would also be justifiable to begin to consider clinical interventions that might help parents to adopt a more relaxed style of parenting in order to avoid anxiety-related health issues.

- Measurements to compare the effects of hyper-parenting practices to those not characterized as such in order to determine to what extent, if any, hyper-parenting practices may be implicated in various measures of children's success and outcomes as adults. This could include measurements of social, academic, and emotional facility among others.

It would likely also be of value to look specifically at parental anxiety that is expressed in other specific ways such as avoidance or neglect as this type of consequence is likely ultimately more damaging to a developing child than a parent who is too involved.
Ideally, this research will have provided a first step in further exploration into the effects of parental trait anxiety and EI development.

**Chapter Summary**

Of all the information that was collected and collated in the course of this thesis research, there were four findings that stood out: the correlation between increasing parental trait anxiety and decreasing adolescent stress management ability; the many differences found between the means of the EQ-i:YV scores when the data were compared based on the parents' field of employment and level of education; and the multitude of statistically-significant results that were returned based on the family together indices.

The first result was notable because it confirmed that there is a strong likelihood that parental trait anxiety affects children's EI, the possibility of which incited this work. That the connection between parental anxiety and adolescent EI was measured as being mediated by those children's stress management abilities was noteworthy in and of itself as this connection was one that was strongly supported by the extant literature. Further work to explore and explain the nature of this connection might benefit from the inclusion of measures to quantify the attachment status of the participant dyads.

The other results stood out for their abundance of statistically-significant outcomes, their strong connections to the extant literature, and the rich fodder they provided for future research. The parental education and family togetherness measures in particular were strongly supported by the literature while the differences found between the mean EQ-i:YV results of those children who had educator parents and those who did not might suggest a novel angle for future research. While the educator parents/non-educator parents finding was not one that necessarily has a lot of previous work from which to draw, it did suggest...
that there might be some value in future researchers considering factors that may have led to this finding. At the very least, trying to determine what about being an educator might be responsible for the observed result could provide interesting directions that future researchers could consider when undertaking research of a similar nature.

This summary of the Conclusion chapter completes this research. While this thesis research did find a number of interesting and statistically-significant relationships between the EQ-i:YV and STAI assessments and the various categories of demographic and family togetherness information, further research with larger sample sizes is advised in order to more directly measure the extent to which the observed relationships might actually be reflective of "real life" given that only some of the effect sizes are of at least a medium magnitude as was presumed. Following the References, sample items from the assessments, a presentation of the full set of significant results, and various other pieces of paperwork used in the commission of this research may be found in the Appendices.
References


Main, M., & Hesse, E. (1990). Parents’ unresolved traumatic experiences are related to infant disorganized attachment status: Is frightened and/or frightening parental behavior the linking mechanism? In M. Greenberg, D. Cicchetti, & E.M. Cummings (Eds.), *Attachment in the preschool years: Theory, research and intervention* (pp. 161-184). Chicago, IL: University of Chicago Press.


Appendix A

Sample Items from the EQ-i:YV

The EQ-i:YV consists of 60 items that assess respondents’ potential for emotionally intelligent behaviours. Respondents are asked to select the answer that best reflects their emotional awareness.

<table>
<thead>
<tr>
<th></th>
<th>Very True</th>
<th>Seldom True</th>
<th>Often True</th>
<th>Very Often True</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. I care what happens to other people</td>
<td></td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>6. It is hard to control my anger</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>


Appendix B

Sample Items from the STAI

The T-Anxiety scale of the STAI consists of twenty statements that assess how respondents feel "generally" by having them rate themselves on a four-point Likert-type scale.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Never</td>
<td>Sometimes</td>
<td>Often</td>
<td>Almost Always</td>
</tr>
</tbody>
</table>

A. I am a steady person
   1 2 3 4

B. I lack self-confidence
   1 2 3 4
Appendix C

Demographic Survey

I have signed the Consent Form agreeing to participate in this thesis research project that has been approved by the University of Northern British Columbia Research Ethics Board. I understand that my responses to this questionnaire are voluntary and that I can choose not to answer certain questions. Furthermore, I understand that I will not be identified by name in any research or publications resulting from this study.

The last four digits of my main home phone number are ___ ___ ___ ___

For each of the following questions, please check any or all descriptors that apply.

Gender

- Female
- Male

Age

- Under 30
- 30 – 39
- 40 – 49
- 50 – 59
- 60 – 69
- Over 69

Nationality/Ethnicity

Are you a Canadian citizen?

- Yes
- No

What languages are regularly spoken in your home?

- Chilcotin
- English
- French
- German
- Punjabi
- Shuswap
- Other (please describe)
Education
What is the highest level of education you completed?

- Elementary school (Kindergarten to Grade 7)
- High school (Grade 8 to 12)
- High school diploma
- Some post-secondary education (no diploma)
- Post-secondary degree or diploma

Employment
In what field do you work?

- Education
- Finance
- Forestry
- Healthcare
- Law enforcement
- Mining
- Sales
- Trades
- Other (please describe)

Family constellation
What is your marital status?

- Married
- Never married
- Divorced/separated
- Widowed
- Remarried
- Living with someone

What is your relationship to the Planning 10 student participant?

- Biological parent
- Adoptive parent
- Step-parent
- Foster parent
- Live-in partner of parent
- Other adult relative (please describe)
Including the Planning 10 student participant, how many children live in your home?

- One
- Two
- Three
- Four
- More than four (please describe)

Of the children living with you, how many are related to you biologically?

- All
- None
- Other (please describe)

**Family interaction**

Typically, how many times a week do you share a meal with your Planning 10 student participant?

- None
- 1 – 3
- 4 – 6
- 7 or more

Typically, how much time do you spend with your Planning 10 student participant each day during the week?

- Less than 1 hour
- 1 – 2 hours
- 2.5 – 4 hours
- More than 4 hours

Typically, how much time do you spend with your Planning 10 student participant each day on the weekend?

- Less than 1 hour
- 1 – 2 hours
- 2.5 – 4 hours
- 4.5 – 6 hours
- More than 6 hours
During the week, what types of interaction are typical between you and your child? (How do you spend your time together?)

☐ Doing homework
☐ Doing housework or chores
☐ Outdoor recreational activities
☐ Playing sports or games
☐ Sharing a hobby
☐ Talking
☐ Volunteering
☐ Watching TV or movies
☐ Working
☐ Other (please describe)

During the weekend, what types of interaction are typical between you and your child? (How do you spend your time together?)

☐ Doing homework
☐ Doing housework or chores
☐ Outdoor recreational activities
☐ Playing sports or games
☐ Sharing a hobby
☐ Talking
☐ Volunteering
☐ Watching TV or movies
☐ Working
☐ Other (please describe)

Parenting Trends
With your Planning 10 student participant in mind, please mark the box for the answer that most closely applies to you for each of the following questions. Please remember that all answers are anonymous and confidential.

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you come rushing to your child’s aid whether you’re asked to get involved or not?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you feel heavily invested in your child’s school success?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have you painstakingly planned your child’s life from first play date to college and maybe even career?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you consider yourself your child’s best friend?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Would you (or have you) considered calling your child's employer to complain to his/her boss about an unfair situation?  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Do you feel bad about yourself when your child does not do well?  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Do you defend your child's actions even when it is clear that he/she is the one who misbehaved?  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

Do you try to micromanage aspects of your child's life?  

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>

**Student Information**  
During which semester does/did your son/daughter take Planning 10?

- [ ] First (starting September 2010)  
- [ ] Second (starting February 2011)  

At which school does/did your son/daughter take Planning 10?

If different than the one above, which school does your son/daughter regularly attend?

Thank you for your participation in this research project. Results from this work will be available in Fall 2011.

For more information please contact Shirley Giroux (the researcher) at email address here.
Appendix D

Sample Items from the EQ-i:YV-O

The EQ-i:YV-O consists of 38 items that asks parent/caregiver respondents to assess their children's potentials for emotionally intelligent behaviours. Respondents are asked to select the answer that best reflects their child's emotional awareness most of the time in most places.

<table>
<thead>
<tr>
<th></th>
<th>Not True</th>
<th>Just a Little True</th>
<th>Pretty Much True</th>
<th>Very Much True</th>
</tr>
</thead>
</table>

5. My child/student is able to respect others.............  O  O  O  O
6. My child/student gets too upset about things...........  O  O  O  O
My name is Shirley Giroux and I am a teacher and a student in the UNBC MEd Counselling program. As a part of my proposed thesis, I am planning on doing some research in the local school district and seek to gain the participation of as many parents with students in Grade 10 as possible. To explain what I propose to do and my reasons for doing so, I have prepared a brief overview. Please note that our district superintendent has approved this research and is fully aware of my activities.

What am I looking for and how do I propose to carry out my research?
By administering a short test on emotional fluency to Grade 10 students and a personality survey to their parents, I want to see if parents’ disposition and children’s emotional functioning are connected in any way.

What will participants be asked to do?
Planning 10 students will all be asked to complete a short (approximately 30 minute) assessment during one of their Planning 10 classes. Parents will be asked to fill out an even shorter (5-10 minute) assessment of their children’s emotional fluency as well as a 16-item personality survey and a brief demographic survey (which will all be brought home to you by your Planning 10 student). All participants will be asked to identify themselves only by the last four digits of the parents’ phone number in order to maintain anonymity while allowing me to match the student and parent assessment results in order to run my statistical tests and see if there appears to be a relationship between any of the collected pieces of information. All collected information is confidential and participants are free to withdraw from the study at any time.

Does everyone need to participate?
While I would appreciate having as many people participate as possible, nobody is obligated to participate in this study and there is no penalty to anyone for refusing to be a participant.
Is there any personal benefit to be gained from participating in this study?
Yes! By agreeing to participate, you will receive an extra entry into a draw for a $25 gift card. When you send back the parental assessments, you will receive a second bonus entry and can access the results when the study is complete by contacting me at email address here.

Whether or not you participate, please send back the permission slips to be entered into a draw for a $25 gift card. Thank you and good luck!
Appendix F

Planning 10 Teacher Consent Form

I, ____________________________, as a Planning 10 teacher at ________________________, hereby do grant permission to Shirley Giroux to visit my classroom in her role as UNBC M.Ed. student and thesis researcher.

I understand that Shirley will require approximately two blocks of Planning 10 class time and that she will be undertaking the following tasks:

1. seeking out study participants by handing out permission slips to be taken home by the students and filled out by their parents

2. administering emotional intelligence tests to those students whose parents agree to participate in this study

3. delivering a short lesson on the concept of emotional intelligence and its applicability to the workforce.

By signing below, I agree to allow Shirley the class time to do her research with my Planning 10 class(es) on or around the dates we have agreed upon below, with the understanding that she will contact me by email at least one week prior to the actual date that she would like to visit my class(es) for the first time.

Signed ____________________________ Date ______________________

I teach Planning 10 in the following blocks:

(Please circle all that apply.) A B C D

I would be able to provide class time during the week(s) of:

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________
Appendix G

Permission Forms

PARENT CONSENT FORM

I understand that Mrs. Giroux, who is a UNBC Master of Education student, is conducting a research study looking for a relationship between parental disposition and adolescent children's emotional fluency. The study will be conducted at local school names here within the Planning 10 courses of the second semester of the 2010-2011 school year. It will also require my participation as a parent.

I understand that my son/daughter and I were chosen as participants in this study because he/she is participating in a Planning 10 course, during the 2010-2011 school year. I also understand that Mrs. Giroux will be carrying out assessments exploring aspects of my son/daughter's emotions and aspects of my personality.

The assessments used for this research are expected to take roughly 30 minutes for the students and 60 minutes for the parents. The entire body of research is expected to take no longer than one month, with full results and conclusions expected to be available for viewing by November of 2011. Information from this study may be used to enhance future development of parenting programs and interventions.

1. Consent for the inclusion of my and my son's/daughter's data is given on the understanding that Mrs. Giroux will use her best efforts to guarantee that my and my son's/daughter's identities will be protected and our confidentiality maintained both directly and indirectly.

2. I understand that participation in the study is completely voluntary and that my son/daughter may choose to withdraw or I may choose to have my son/daughter withdrawn from the study at any time. If my son/daughter is withdrawn from the study his/her information will be withdrawn automatically as well and this withdrawal will have no impact on his/her Planning 10 grade.

3. I understand that the student data will be collected at local school names here within Planning 10, during the 2010-2011 school year.

4. I understand that the data collected will not increase or decrease the normal workload expected of a student taking Planning 10.

5. I understand that my son/daughter will be asked to complete an assessment of his/her emotional fluency and that I will have access to this assessment prior to my son/daughter completing the assessment.

6. I understand that the data collected will be treated in the following manner:
   a. The data will be stored by Mrs. Giroux in a locked filing cabinet and password-protected computer at her private residence.
   b. The data will be used only by Mrs. Giroux, and only for her MEd thesis or presentation at learned conferences or published in learned journals and books. The data will also be accessed by her two supervisors, Drs. Andrew Kitchenham and John Sherry.
   c. The data will be shredded at the end of the study or I may have my data returned to me in September of 2012. (Mrs. Giroux will shred the data personally.)

7. I understand that if I have any comments or concerns that I may contact Mrs. Giroux at 250-398-5800, Dr. Andrew Kitchenham at 250-960-6707, or Dr. John Sherry at 250-960-5961, or the Office of Research (reb@unbc.ca or 250-960-6735).

By signing and returning this form, my son/daughter and I agree to be entered in a free draw for a $25 gift card with the chance for another entry if we do choose to participate in this research and a third entry when the completed parent assessments are returned.

I hereby: ☐ give permission for my son/daughter to take part in the study to be conducted by Mrs. Giroux during his/her Planning 10 class.
☐ do not give permission for my son/daughter to take part in the study to be conducted by Mrs. Giroux during his/her Planning 10 class.

Name: ___________________________ Signed: ___________________________
Date: ________________
STUDENT CONSENT FORM

I understand that Mrs. Giroux, who is a UNBC Master of Education student, is conducting a research study looking for a relationship between parental disposition and adolescent children's emotional fluency. The study will be conducted at local school names here within the Planning 10 courses of the second semester of the 2010-2011 school year.

I understand that I was chosen as a participant in this study because I am participating in a Planning 10 course during the 2010-2011 school year. I also understand that Mrs. Giroux will be carrying out assessments designed to explore aspects of my emotions.

The assessments used for this research are expected to take roughly 30 minutes for the students and 60 minutes for the parents. The entire body of research is expected to take no longer than one month, with full results and conclusions expected to be available for viewing by November of 2011. Information from this study may be used to enhance future development of parenting programs and interventions.

1. Consent for the inclusion of my data is given on the understanding that Mrs. Giroux will use her best efforts to guarantee that my identity will be protected and my confidentiality maintained both directly and indirectly.

2. I understand that participation in this research is completely voluntary and that I may choose to withdraw or have my parent/guardian choose to have me withdrawn from the study at any time. If I am withdrawn from the study, my information will be withdrawn automatically as well and this withdrawal will have no impact on my Planning 10 grade.

3. I understand that the data will be collected at local school names here within Planning 10, during the 2010-2011 school year.

4. I understand that the data collected will not increase or decrease the normal workload expected of a student taking Planning 10.

5. I understand that I will be asked to complete an assessment designed to describe aspects of my emotional fluency.

6. I understand that the data collected will be treated in the following manner:
   a. The data will be stored by Mrs. Giroux in a locked filing cabinet and password-protected computer at her private residence.
   b. The data will be used only by Mrs. Giroux, and only for her MEd thesis or presentation at learned conferences or published in learned journals and books. The data will also be accessed by her two supervisors, Drs. Andrew Kitchenham and John Sherry.
   c. The data will be shredded at the end of the study or may be returned to me in September of 2012. (Mrs. Giroux will shred the data personally.)

7. I understand that if I have any comments or concerns that I may contact Mrs. Giroux at 250-398-5800, Dr. Andrew Kitchenham at 250-960-6707, or Dr. John Sherry at 250-960-5961, or the Office of Research (rebo@unbc.ca or 250-960-6735).

By signing and returning this form, my parents and I agree to be entered two times into a free draw for a $25 gift card with the chance for another (third) entry when the completed parent assessments are returned.

I hereby: ☐ agree to take part in the study to be conducted by Mrs. Giroux during my Planning 10 class.

☐ do not agree to take part in the study to be conducted by Mrs. Giroux during my Planning 10 class.

Name: _______________________________ Signed: _______________________________

Date: _______________________________
PARENT PARTICIPATION CONSENT FORM

I understand that Mrs. Giroux, who is a UNBC Master of Education student, is conducting a research study looking for a relationship between parental disposition and adolescent children's emotional fluency. The study will be conducted at local school names here within the Planning 10 courses of the second semester of the 2010-2011 school year.

I understand that I was chosen as a participant in this study because I am the parent of a student who is participating in a Planning 10 course during the 2010-2011 school year. I also understand that Mrs. Giroux will be asking me to complete three forms: an assessment of my child's emotional fluency to complement that being filled out by my child, a brief personality assessment, and a demographic questionnaire.

The assessments used for this research are expected to take roughly 30 minutes for the students and 60 minutes for the parents. The entire body of research is expected to take no longer than one month, with full results and conclusions expected to be available for viewing by November of 2011. Information from this study may be used to enhance future development of parenting programs and interventions. If I find any of the questions to cause anxiety or discomfort, I understand that Mrs. Giroux will provide contact information for counseling services.

1. Consent for the inclusion of my data is given on the understanding that Mrs. Giroux will use her best efforts to guarantee that my identity will be protected and my confidentiality maintained both directly and indirectly.
2. I understand that participation in the study is completely voluntary and that I may choose to withdraw or my parent/guardian may choose to have me withdrawn from the study at any time. If I am withdrawn from the study my information will be withdrawn automatically as well and this withdrawal will have no effect on my child's Planning 10 grade.
3. I understand that the data will be collected at local school names here Planning 10, during the 2010-2011 school year.
4. I understand that the data collected will not increase or decrease the normal workload expected of my child as a student taking Planning 10.
5. I understand that I will be asked to complete an assessment of my Planning 10 student child's emotional fluency, a personality assessment, and a demographic questionnaire.
6. I understand that the data collected will be treated in the following manner:
   a. The data will be stored by Mrs. Giroux in a locked filing cabinet and password-protected computer at her private residence.
   b. The data will be used only by Mrs. Giroux, and only for her MEd thesis or presentation at learned conferences or published in learned journals and books. The data will also be accessed by her two supervisors, Drs. Andrew Kitchenham and John Sherry.
   c. The data will be shredded at the end of the study or I may have my data returned to me in September of 2012. (Mrs. Giroux will shred the data personally.)
7. I understand that if I experience stress or anxiety as a result of my participation in this research project, I can seek counseling help using the resource list included with this permission form.
8. I understand that if I have any comments or concerns that I may contact Mrs. Giroux at 250-398-5800, Dr. Andrew Kitchenham at 250-960-6707, or Dr. John Sherry at 250-960-5961, or the Office of Research (reb@unbc.ca or 250-960-6735).

By signing and returning this form, my son/daughter and I agree to be entered two times into a free draw for a $25 gift card with the chance for another (third) entry when the completed parent assessments are returned.

I hereby:    □ give permission for my inclusion in the study to be conducted by Mrs. Giroux.
☐ do not give permission for my inclusion in the study to be conducted by Mrs. Giroux.

Name: ____________________________  Signed: ____________________________

Date: ______________
Appendix H

EI Lesson Plan

Time required:

- 30 – 45 minutes

Goals:

- to recognize aspects of emotional intelligence
- to discuss how various aspects of emotional intelligence may be useful in daily functioning
- to explore the usefulness or applicability of emotional intelligence in the workplace

Materials:

- Spongebob and Patrick video clips from “Spongebob Squarepants”
- “EI in the Workplace” handout

Procedure:

1. Briefly summarize the concept of emotional intelligence making reference to Goleman’s definition and a succinct overview of possible advantages that some feel may be conferred by having a higher level of EI. (Expected time: 5 minutes)

   - Encourage class to share whether they agree or disagree that such a thing as EI exists.
   - Request specific examples of high or low EI that class may have witnessed or experienced and briefly explore whether there is agreement that the examples do indeed represent a surplus or deficit of EI.

2. Watch two of the Spongebob clips. After each clip, have the class briefly record one example of either high or low emotionally intelligent behaviour that they noticed, being sure to clearly reference the character concerned. Put on the Spongebob clips one at a time. (Expected time: 15 - 20 minutes)

   - After watching the two clips, break the class into groups of 4 or 5 and have each prepare a brief statement declaring what they decided (as a group) were the best examples of low and high EI based on the members’ notes. One person from each group presents.
   - Allow the class time after each group’s statement to discuss whether or not they are in agreement.
   - If time permits, watch one or two more clips and repeat this exercise.
3. Hand out the worksheet “EI in the Workplace.” (Expected time: 10 – 15 minutes)

- Give the class ten minutes to work through the handout in pairs.
- As a class, discuss the answers chosen and debate why each would be helpful for the scenarios.
EI in the Workplace

With a partner, decide which characteristics of emotional intelligence (listed at the bottom of this page) would be advantageous in each of the specific work situations described below. Many of the situations will involve more than one aspect of EI and EI characteristics may be used more than once. Be prepared to defend your choices!

1. You are asked to do all of the mopping every night and are feeling frustrated with what you perceive to be the unfairness of the situation and your boss's lack of respect for you.

2. You are a manager asked to help carry out performance evaluations of your team by meeting with each employee and going over their strengths and weaknesses with them.

3. You suspect a co-worker of stealing and want to talk to him before you talk to your supervisor.

4. You have been assigned to work on an important presentation with someone that you find very irritating. Your raise depends on the quality of your work together.

5. You notice that one of your co-workers seems to be getting a lot of negative attention from another.

A person with good emotional intelligence is one who:

- is comfortable dealing with his/her own emotions
- is able to stick up for what they see is right
- is able to stay calm under pressure or strong emotion
- is able to work effectively while upset or excited
- is comfortable dealing with others' emotions
- is not easily intimidated by others' strong emotion
✓ is able to help others work through emotion

✓ can accurately recognize and name emotions
## Appendix I

### Summary of Statistically-Significant Results

#### Table A1

**Correlations Between EQ-i:YV Scale Scores and STAI Scores**

<table>
<thead>
<tr>
<th></th>
<th>STAI</th>
<th>INTRA</th>
<th>INTER</th>
<th>STRESS</th>
<th>ADAPT</th>
<th>MOOD</th>
<th>TOTAL</th>
<th>POSIM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>STAI</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>1</td>
<td>-.096</td>
<td>.060</td>
<td>-.201*</td>
<td>-.036</td>
<td>-.110</td>
<td>-.116</td>
<td>-.155</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.193</td>
<td>.294</td>
<td>.034</td>
<td>.372</td>
<td>.160</td>
<td>.148</td>
<td>.081</td>
<td></td>
</tr>
<tr>
<td><strong>INTRA</strong></td>
<td>-.096</td>
<td>1</td>
<td>.359**</td>
<td>.280**</td>
<td>.312**</td>
<td>.467**</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.193</td>
<td>.000</td>
<td>.005</td>
<td>.002</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td><strong>INTER</strong></td>
<td>.060</td>
<td>.359**</td>
<td>1</td>
<td>.332**</td>
<td>.321**</td>
<td>.465**</td>
<td>.607**</td>
<td>.323**</td>
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<tr>
<td>Pearson Correlation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>.294</td>
<td>.000</td>
<td>.001</td>
<td>.002</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td><strong>STRESS</strong></td>
<td>-.201*</td>
<td>.280**</td>
<td>.332**</td>
<td>1</td>
<td>.371**</td>
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<td>.714**</td>
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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale.

* Result is significant at the .05 level (one-tailed). ** Result is significant at the .01 level (one-tailed).
Figure A1. Correlation between parental trait anxiety as measured by the STAI and adolescent Intrapersonal scale scores as measured by the EQ-i:YV. The scores are standardized to M=100 and SD=15. The graph displays no statistically-significant correlation.

Figure A2. Correlation between parental trait anxiety as measured by the STAI and adolescent Interpersonal scale scores as measured by the EQ-i:YV. The scores are standardized to x=100 and SD=15. The graph displays no statistically-significant correlation.
Figure A3. Correlation between parental trait anxiety as measured by the STAI and adolescent Stress Management scale scores as measured by the EQ-i:YV. The scores are standardized to $\mu=100$ and $SD=15$. The graph displays a correlation with $r = -.201$.

Figure A4. Correlation between parental trait anxiety as measured by the STAI and adolescent Adaptation scale scores as measured by the EQ-i:YV. The scores are standardized to $\mu=100$ and $SD=15$. The graph displays no statistically-significant correlation.
Figure A5. Correlation between parental trait anxiety as measured by the STAI and adolescent Mood scale scores as measured by the EQ-i:YV. The scores are standardized to $x=100$ and $SD=15$. The graph displays no statistically-significant correlation.

Figure A6. Correlation between parental trait anxiety as measured by the STAI and adolescent Positive Image scale scores as measured by the EQ-i:YV. The scores are standardized to $x=100$ and $SD=15$. The graph displays no statistically-significant correlation.
Figure A7. Correlation between parental trait anxiety as measured by the STAI and adolescent Total EQ scores as measured by the EQ-i:YV. The scores are standardized to $x=100$ and SD=15. The graph displays no statistically-significant correlation.

Figure A8: Correlation between student and observer scores on the Intrapersonal scale of the EQ-i:YV. The graph displays a correlation of 0.32551.
**Figure A9:** Correlation between student and observer scores on the Interpersonal scale of the EQ-i:YV. The graph displays a correlation of 0.23063.

**Figure A10:** Correlation between student and observer scores on the Stress Management scale of the EQ-i:YV. The graph displays a correlation of 0.3188.
Parental Trait Anxiety and Adolescent EI

Figure A11: Correlation between student and observer scores on the Adaptation scale of the EQ-i:YV. The graph displays a correlation of 0.37212.

Figure A12: Correlation between student and observer scores on the Mood scale of the EQ-i:YV. The graph displays a correlation of 0.34662.
Figure A13: Correlation between student and observer scores for Total EQ as measured by the EQ-i:YV. The graph displays a correlation of 0.36125.
### Table A2

**Results of Independent t-tests of Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Employment of Caregiver in Education or a Field Other Than Education.**

<table>
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<th>Scale</th>
<th>$t_{observed}$</th>
<th>$t_{cv}$</th>
<th>$p$ (one-tailed)</th>
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</thead>
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<td>1.681</td>
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<tr>
<td>INTER</td>
<td>0.884</td>
<td>1.667</td>
<td>0.19</td>
</tr>
<tr>
<td>STRESS</td>
<td>1.934*</td>
<td>1.667</td>
<td>0.028</td>
</tr>
<tr>
<td>ADAPT</td>
<td>1.802*</td>
<td>1.667</td>
<td>0.038</td>
</tr>
<tr>
<td>MOOD</td>
<td>1.961*</td>
<td>1.667</td>
<td>0.026</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2.262*</td>
<td>1.667</td>
<td>0.013</td>
</tr>
<tr>
<td>POSIM</td>
<td>3.205*</td>
<td>1.667</td>
<td>0.001</td>
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<tr>
<td>STAI</td>
<td>-1.447</td>
<td>1.667</td>
<td>0.076</td>
</tr>
</tbody>
</table>

Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. $t_{cv}$ calculated at $p = 0.05$ for a one-tailed t-test. * Result is significant at the .05 level (one-tailed).
Table A3

Results of ANOVA of Student EQ-i YV Scores and Caregiver STAI Scores Stratified by Student Age

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<th>p</th>
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<td></td>
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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).
Table A4

Results of *ANOVA* of Student EQ-i: YV Scores and Caregiver STAI Scores
Stratified by Highest Level of Caregiver Education

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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).
Table A5

Results of ANOVA of Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Caregiver Relationship to Child

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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).
Parental Trait Anxiety and Adolescent EI

Table A6

Results of ANOVA of Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Shared Meals Per Week

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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).
Table A7

Results of ANOVA of Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Student/Caregiver Hours per Day Spent Together During the Week

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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).
### Table A8

**Results of ANOVA of Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Student/Caregiver Hours per Day Spent Together During the Weekend**

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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).
Table A9

Results of ANOVA of Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Number of Activities Shared by Student/Caregiver During the Week

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<th>p</th>
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<td>Within Groups</td>
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<td>Total</td>
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<td>46</td>
<td></td>
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<tr>
<td>INTER</td>
<td>Between Groups</td>
<td>265.435</td>
<td>2</td>
<td>132.717</td>
<td>.658</td>
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<td>Within Groups</td>
<td>8872.023</td>
<td>44</td>
<td>201.637</td>
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<tr>
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<td>249.235</td>
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<td>Total</td>
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<tr>
<td>STAI</td>
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<td>Within Groups</td>
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<td>Total</td>
<td>7932.283</td>
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</tr>
</tbody>
</table>

Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, MOOD = Mood scale, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).

Table A10

Results of Brown-Forsythe Robust Tests of Equality of Means for Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Number of Activities Shared by Student/Caregiver During the Week

<table>
<thead>
<tr>
<th></th>
<th>Statistic</th>
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</tr>
</thead>
<tbody>
<tr>
<td>STRESS</td>
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<td>.999</td>
<td>2</td>
<td>20.255</td>
</tr>
<tr>
<td>ADAPT</td>
<td>Brown-Forsythe</td>
<td>4.050*</td>
<td>2</td>
<td>28.862</td>
</tr>
<tr>
<td>TOTAL</td>
<td>Brown-Forsythe</td>
<td>.894</td>
<td>2</td>
<td>24.047</td>
</tr>
</tbody>
</table>

a. Asymptotically F distributed. Note: STRESS = Stress Management scale, ADAPT = Adaptation scale, TOTAL = Total EQ. * Result is significant at the .05 level (one-tailed).
Table A11

Results of ANOVA of Student EQ-i: YV Scores and Caregiver STAI Scores Stratified by Number of Activities Shared by Student/Caregiver During the Weekend.

<table>
<thead>
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<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>INTRA</td>
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<td>578.890</td>
<td>2</td>
<td>289.445</td>
<td>1.074</td>
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<td>Within Groups</td>
<td>11862.088</td>
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<td>269.593</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>INTER</td>
<td>Between Groups</td>
<td>601.829</td>
<td>2</td>
<td>300.915</td>
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<td>Within Groups</td>
<td>8535.628</td>
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<td>STRESS</td>
<td>Between Groups</td>
<td>696.148</td>
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<td>Within Groups</td>
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<td>217.085</td>
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</tr>
<tr>
<td>MOOD</td>
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<td>527.852</td>
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<tr>
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<td>61.916</td>
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</tbody>
</table>

Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, MOOD = Mood scale. * Result is significant at the .05 level (one-tailed).

Table A12

Results of Brown-Forsythe Robust Tests of Equality of Means for Student EQ-i: YV Scores and Caregiver STAI Scores Stratified by Number of Activities Shared by Student/Caregiver During the Weekend.

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</table>

a. Asymptotically F distributed. Note: ADAPT = Adaptation scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).
Table A13

Results of ANOVA of Student EQ-i:YV Scores and Caregiver STAI Scores Stratified by Total Number of Activities Shared in a Week

<table>
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<td>620.371</td>
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<tr>
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<td>INTER</td>
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<td>706.929</td>
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<td>Between Groups</td>
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Note: INTRA = Intrapersonal scale, INTER = Interpersonal scale, STRESS = Stress Management scale, ADAPT = Adaptation scale, MOOD = Mood scale, TOTAL = Total EQ, POSIM = Positive Image scale. * Result is significant at the .05 level (one-tailed).