

EMOTIONAL BONDS: A NEW LENS ON THE ROLE OF PARENT-ADOLESCENT
RELATIONSHIP QUALITY IN ADOLESCENT WELL-BEING

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Abstract

Parent-adolescent relationships are traditionally assessed through dimensions such as warmth, conflict, and support, but the emotional experiences within parent-adolescent interactions remain understudied. This study examined adolescents' emotional experiences during interactions with a parent, their association with relationship quality, and their role in predicting well-being over time. A sample of 96 adolescents ($M_{\text{age}}=15.6$ years, 43.3% boys) reported on the emotions they experienced during interactions with their parent, parent-adolescent relationship quality (connectedness and hostility), as well as on their well-being monthly over 6 months. Adolescents reported more positive than negative emotions. Hierarchical regression analyses indicated that positive emotions were associated with greater connectedness and lower hostility. Negative emotions were not significantly associated with relationship quality. Longitudinal analyses showed that positive emotions predicted higher overall well-being but not changes in well-being over time. Interventions targeting parent-adolescent relationships may benefit from nurturing positive emotional exchanges to strengthen relationship quality and support well-being.

Keywords: positive emotions, negative emotions, relationship quality, well-being, adolescents, parents.

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The parent-adolescent relationship significantly influences adolescents' emotional development and mental health (Smetana & Rote, 2019). Parent-adolescent relationship quality has traditionally been examined using dimensions such as warmth, conflict, and support (Lougheed & Keskin, 2021; Sisk & Gee, 2022; Smetana & Rote, 2019). However, parent-adolescent daily interactions also generate a range of emotions, and these can have immediate and long-term effects on adolescents (Butler, 2011). Although much research has focused on the intrapersonal aspect of emotions, specifically the role that emotions play within each one of us individually (Keltner & Kring, 1998), research on the interpersonal nature of emotions within the parent-adolescent relationship is scarce. Emotions not only stem from, but also shape our relationships with others (Butler, 2011). The aim of this study is to explore the association between adolescents' emotional experience within parent-adolescent interactions, relationship quality, and adolescents' well-being.

Parent-Adolescent Relationships

Throughout adolescence, parent-child relational characteristics such as communication, stress, and support are key factors in shaping adolescents' development (Sisk & Gee, 2022). Parent-adolescent relationships are dynamic interactions involving reciprocal influence between individuals whose feelings and behaviors are interdependent (Berscheid & Ammazzalorso, 2003). Each person's behavior and emotions influence and are influenced by the other's, which creates a continuous, reciprocal cycle. Over time, past interactions shape the quality of the relationship, which is defined as the "self-reported global quality of interpersonal processes that encompass a longer period of time than the interactions observed in one exchange" (Marshall et al., 2023, p.125). The quality of the parent-adolescent relationship continually evolves through ongoing exchanges (Butler, 2011) and when these interactions are positive, they can strengthen the quality of future parent-adolescent interactions (Lougheed & Keskin, 2021; Smetana & Rote, 2019). Relationship quality therefore reflects the accumulated experiences of past interactions and continues to evolve through ongoing mutual exchanges.

As the parent-adolescent relationship develops over time, the quality of this relationship influences adolescents' development and well-being. A positive parent-adolescent relationship is associated with better adolescent emotional understanding, improved mental health, and can even protect against the impacts of life stressors (e.g., peer victimization) on mood, anxiety, and behavior (Lougheed & Keskin, 2021; Sisk & Gee, 2022; Smetana & Rote, 2019). Additionally, open communication facilitates parental understanding of their child's self-concept and promotes greater parent-adolescent relationship satisfaction, while parental suppression of adolescent communication leads to lower understanding of their child's self-concept (Sillars et al., 2005). These benefits highlight why maintaining strong relationship quality is especially important during adolescence.

The developmental changes associated with adolescence affect the quality and structure of parent-adolescent relationships. Adolescence is a time characterized by a growing need for autonomy and individuation, which in turn reshapes the parent-adolescent relationship (Branje, 2018). As adolescents become more assertive and influential, the dynamic gradually evolves from a hierarchical structure to a

more balanced relationship marked by reciprocal and collaborative interactions (Branje, 2018; Branje et al., 2021), with adolescents still being reliant on parents emotionally, cognitively, and practically (Svetaz et al., 2014). The significant and gradual physical, cognitive, and social changes contribute to more challenging interactions with parents (Seiffge-Krenke, 2011; Sisk & Gee, 2022; Smetana & Rote, 2019). Research shows that 46% - 82% of adolescents' daily stressors are related to interpersonal relationships, including conflict with parents (Seiffge-Krenke, 2011). In fact, the highest levels of stress reported by adolescents globally are tied to parent-related situations, such as communication difficulties and academic pressure (Persike & Seiffge-Krenke, 2016; Seiffge-Krenke, 2011). Given the transformative impacts of adolescence on the parent-adolescent relationship, examining relationship quality during this developmental period is particularly important.

There are several measures that capture parent-adolescent relationship quality. These questionnaires traditionally assess relationship-quality in terms of the presence or absence of parental behaviors or attitudes (Burke et al., 2021). Parents and adolescents rate their perception of the relationship on variables such as level of warmth (e.g., "My parents try to understand my problems and worries"), level of responsiveness (e.g., "My mother pays no attention to me"), closeness (e.g., "How close would you say you were to your mother/father"), level of involvement (e.g., "We go to family events together"), conflict (e.g., "argues with/talks back to me"), and criticism (e.g., "My parent finds fault with me"; Burke et al., 2021; Murphy et al., 2003; Suldo & Fefer, 2013). Ultimately, these measures of relationship quality capture general behavioral styles and attitudes that parents and adolescents have towards each other.

Adolescents' Emotional Experience

Emotions play a central role in shaping the development of close interpersonal relationships such as the one between parents and adolescents. Emotions are responses to problems or events related to the development and maintenance of social relationships, and their experience allows one to evaluate their relationship on different domains (e.g., fairness, social status, commitment level, satisfaction; Keltner & Kring, 1998). The Temporal Interpersonal Emotion System offers a theoretical framework that may explain how emotions function within the context of interpersonal relationships (Lougheed & Keskin, 2021). This framework focuses on the role of emotions in shaping interactions across time by highlighting the reciprocal emotional exchanges between interaction partners. With the parent-adolescent relationship as an example, parents and adolescents each possess a self-regulating emotional system, which consists of interactions between emotional experiences (e.g., interpretations and subjective feelings), social expressions (e.g., facial expressions, tone), and physiological arousal (Butler, 2011). These subcomponents of emotions interact within individuals but also between the two individuals during their interaction, forming a dyadic emotional system. In other words, when parents and adolescents interact, their individual emotions come together to form a shared emotional experience. This shared experience can make emotions in each person stronger, weaker, or keep them the same, depending on how parents and adolescents respond to each other. Future parent-adolescent interactions depend on how parents and adolescents coordinate their emotional systems over time, as repeated interactions will reinforce patterns of behaviors and lead to

habitual responses that influence adolescents' emotional development (Butler, 2011; Smetana & Rote, 2019). For example, if parents show anger towards their adolescent, the adolescent could become angrier in response, which may lead to more conflict between them. If this type of interaction happens repeatedly, it can become a regular pattern of interaction, making it harder for parents and adolescents to engage in more productive ways (Butler, 2011). Therefore, the Temporal Interpersonal Emotion System demonstrates the importance of emotions in relationships by explaining how emotional experiences can have immediate and long-term effects on parents and adolescents and their relationship.

Relatively little is known about adolescents' emotional experiences within parent-adolescent interactions, despite these exchanges generating a range of emotions on a daily basis and the importance of emotions in relationships (Butler, 2011). In their systematic review of parent-adolescent conflict measures, Marshall et al. (2023) found that only 1.9% captured self-reported recollection of emotions felt during parent-adolescent conflict interaction. Additionally, there is only one measure, the Perception of Parent questionnaire, developed to capture adolescents' feelings towards their parents (Phares & Renk, 1998). Five items on this 15-item measure capture emotions (e.g., "Happiness when you think about your parent," "Anger toward your parent"), but these refer to adolescents' general feeling toward a parent with whom they have or do not have contact, and not emotions in the context of interactions with their parent. How adolescents perceive their parents' behaviors and attitudes, overall, may not fully align with how they feel in the moment during interactions with their parents. To appreciate the full scope of parent-adolescent relationships, it is important to move beyond conventional measures of relationship quality and incorporate the emotional experience in interactions between adolescents and their parents.

Recent research highlights the importance of both positive and negative emotions in developmental outcomes (Smetana & Rote, 2019). Positive emotions are mental representations associated with a sense of pleasure, while negative emotions evoke a sense of displeasure (Bailen et al., 2019). Positive emotions typically serve to promote social or achievement goals, avoid threats or punishments, and lead to future positive emotions (Revord et al., 2021). In contrast, negative emotions serve an evolutionary survival function and can also lead to increased creativity compared to positive emotions (Revord et al., 2021).

In the context of parent-adolescent relationships, quality is likely shaped not only by reducing the frequency of negative emotions but also by the presence of positive emotions, as these emotional processes function independently (Larson et al., 2002; Planalp et al., 2018) rather than as opposite ends of a single continuum. In an interpersonal context, experiencing positive emotions can 1) help maintain and improve relationships by encouraging reciprocation, bonding, and prosocial behaviors; 2) assist people in making a good impression; and, 3) through emotional expression, can influence others' feelings and behaviors (Sels et al., 2021). Negative emotions also contribute to social interactions; for example, anger, jealousy, and embarrassment may function to preserve and repair social bonds by helping people respond to threats to those relationships (Keltner & Kring, 1998). Furthermore, Leger et al. (2020) found that in an adult sample, positive emotions attenuated negative ones in response to everyday stressful life events. Positive emotions can act as a buffer when faced with unpleasant experiences and support more adaptive

cognitive and behavioral responses (Huppert, 2006). Therefore, examining the experience of both positive and negative emotions is essential for understanding how these emotional dynamics, both separately and in combination, influence adolescents' relational development.

The evidence regarding the frequency of intrapersonal positive and negative emotions in adolescence is mixed. Some research suggests that adolescence is marked by a rise in the frequency of negative emotions (Bailen et al., 2019), with feelings such as anger, worry, and hurt commonly reported (Larson & Asmussen, 1991). Similarly, studies indicate that positive emotions decline across adolescence, either continuing to decrease over time (Bailen et al., 2019) or leveling off in late adolescence (Larson et al., 2002). Supporting this pattern, other findings show that older adolescents tend to experience fewer positive emotions and more frequent negative emotions than younger adolescents (Frost et al., 2015; Larson & Asmussen, 1991). Higher rates of negative emotions in adolescents compared to preadolescents have been observed, particularly among girls (Larson & Asmussen, 1991), although Frost et al. (2015) reported that girls experience higher levels of both positive and negative emotions compared to boys. In contrast, Meininger et al. (2004) found that in a 24-hour period, happiness and feeling relaxed were the most commonly reported emotions, while irritability, anger, and sadness were among the least frequent emotions. Furthermore, evidence suggests that emotional instability decreases as adolescents grow up (Larson et al., 2002; Maciejewski et al., 2015). Overall, research on adolescents' intrapersonal emotional experience is well developed, but further research is needed to understand adolescents' interpersonal emotional experiences, especially in the context of the parent-adolescent relationship.

Adolescents' Well-Being

Well-being has been defined as the sustainable positive mental state that supports optimal functioning and generally integrates both hedonic and eudaimonic dimensions as part of a unified global construct (Clarke et al., 2011; Stewart-Brown & Janmohamed, 2008). Hedonic well-being refers to one's subjective experience of happiness, pleasure, and life satisfaction, while eudaimonic well-being reflects one's positive psychological functioning, good relationships, and self-realisation (Ryan & Deci, 2001).

Although the Transactional Model emphasizes ongoing, bidirectional exchanges between individuals and their environment (Sameroff & Mackenzie, 2003), such that adolescent well-being and parent-adolescent relationship quality dynamically shape one another over time, the parent-adolescent relationship remains a key determinant of adolescents' well-being (Suldo & Fefer, 2013). For example, adolescents who experience a warm relationship with their parents tend to exhibit lower levels of hostility and aggression, and increased independence, emotional stability, positive self-esteem, and emotional responsiveness (Khaleque, 2013). Additionally, adolescents' feelings of connectedness to their parents have been positively linked to their well-being (Fosco et al., 2021). These findings align with those of Weymouth et al. (2016), who found that parent-adolescent conflict contributes to adolescent maladjustment. Conversely, adolescents with less adaptive relationships with their parents tend to develop anger, hostility, aggression, negative self-esteem, emotional instability, hopelessness, and emotional

unresponsiveness (Khaleque, 2013; Kim et al., 2015). Taken together, current research highlights the central role of parent-adolescent relationship quality in shaping adolescents' well-being.

Current measures of relationship quality are strongly linked to adolescents' well-being, but adolescents' emotional experience during interactions with their parents is also important to consider. Since one cannot initially control how they feel about an event they experience, the emotions adolescents feel towards their parents during their exchanges could represent the involuntary component of relationship quality (Ferring et al., 2009). Similarly to their influence on relationship quality, positive and negative emotional processes each influence well-being. Well-being is positively correlated with positive emotions and life satisfaction, and inversely correlated with negative emotions (Tennant et al., 2007). For example, well-being is closely linked to feelings of happiness and positivity, whereas poor well-being is associated with sadness, worry, and depression (Clarke et al., 2011). Additionally, the frequency of positive emotions (rather than their intensity) and the willingness to accept and experience negative emotions appear to be related to well-being (Ryan & Deci, 2001). Adler & Hershfield (2012) found that adults' well-being was enhanced when they experienced both happiness and sadness simultaneously in response to an event. Therefore, adolescents' positive and negative emotional experiences with their parents may predict their well-being above and beyond current measures of relationship quality.

The Role of Internalizing Symptoms

Internalizing symptoms are the most prevalent mental health concern among adolescents (APA, 2018). More specifically, they refer to symptoms of anxiety (e.g., excessive worry, fear, negative beliefs), depressed mood (e.g., sadness, loss of interest in activities, guilt), withdrawal (e.g., avoidance of others, lack of responsiveness to social situations, and sensitivity to criticism), and somatic complaints due to emotional distress (e.g., stomach aches, headaches, and nausea; Levesque, 2011; Merrell, 2008).

Internalizing symptoms are associated with lower parent-adolescent relationship quality. For example, Nelemans et al. (2023) found that adolescents' reports of higher levels of conflict and lower levels of warmth in their relationship with their mother predicted higher levels of adolescents' internalizing symptoms. Adolescents who reported more internalizing symptoms also reported lower relationship quality with both parents a year later (Luijten et al., 2021). Adolescents experiencing higher levels of internalizing symptoms can in turn adopt maladaptive interaction styles (e.g., irritability, withdrawal) that elicit negative emotional responses from their parents, leading to increased conflict and a decline in relationship quality. Over time, this can create a vicious cycle where worse relationship quality contributes to an increase in internalizing symptoms and vice-versa (Nelemans et al., 2023).

Emotions are a key component of internalizing symptoms and thus internalizing symptoms can also shape adolescents' emotional experience. Adolescents, especially girls, who experience higher levels of depression symptoms report fewer positive emotions (e.g., happiness, cheerfulness) and more negative emotions (anger, nervousness, frustration, worry), as compared to adolescents with lower levels of depression symptoms (Frost et al., 2015). Additionally, girls with higher levels of depression symptoms are more likely to attribute the cause of their emotions to others (Frost et al., 2015). This emphasizes the

influence of internalizing symptoms on social cognition as adolescents with internalizing symptoms might be more likely to suppress positive emotions as well as negatively interpret ambiguous stimuli and their interactions with others (Farmer & Kashdan, 2012; Frost et al., 2015; Morrison & Heimberg, 2013). In fact, anxiety has been linked to impairments in adolescents' ability to understand their own and others' emotions, as well as their knowledge about emotions (e.g., knowing the causes of emotional experiences; Briscoe et al., 2024; Mathews et al., 2016). Similarly, adolescents experiencing more psychological distress or internalizing problems tend to have more negative feelings toward their parent in general (Phares & Renk, 1998). Since internalizing symptoms can influence adolescents' emotional experience and understanding, accounting for them is crucial for a more comprehensive understanding of parent-adolescent interactions.

Protective Effect of Connectedness

Parent-adolescent connectedness may buffer the effect that adolescents' negative emotions toward their parent has on adolescents' well-being. Indeed, parent-adolescent connectedness has important benefits for adolescents' development. Connectedness comprises behaviors reflecting closeness and intimacy, warmth and affection, and acceptance and approval (Burke et al., 2021). Adolescents who feel connected to their parents experience fewer weight-control, substance use, and suicidal attempt behaviors, as well as less body dissatisfaction, higher self-esteem, fewer depression symptoms (Ackard et al., 2006), lower negative emotions, and higher positive emotions (Chiang, 2025b). Additionally, Chiang et al. (2025a) found that parent-adolescent connectedness buffered the effect of negative emotional variability (i.e., changes in the intensity of negative emotions) on suicidal ideation. Negative emotional variability was associated with higher suicidal ideation for adolescents with low but not high parent-adolescent connectedness. Another study examined how daily connectedness buffers the link between parent and adolescent emotions (Chiang, 2025b). When connectedness was low, greater parent negative emotions were associated with greater adolescent negative emotions. In contrast, when connectedness was high, parent negative emotions were unrelated to adolescent negative emotions and were linked to higher adolescent positive emotions. Given that parent-adolescent connectedness seems to buffer against maladaptive behaviors, developmental difficulties, and parent negative emotions, it could also moderate the association between adolescents' negative emotions in parent-adolescent interactions and their well-being.

The Roles of Age and Gender

The parent-adolescent relationship changes with age, and these relational shifts are closely tied to adolescents' emotional experiences. Hair et al. (2005) studied adolescents aged 12–16 years and found that as adolescents got older, their perceptions of parental supportiveness declined. Similarly, compared to younger adolescents, older teens tend to be more distant from their parents, trusting and communicating with them less (Ebbert et al., 2019). Luijten et al. (2021) similarly reported that relationship quality with both parents decreased in a 1-year period for teens in grades 7-9. These relational shifts are accompanied by emotional changes, as adolescence is a developmental period marked by heightened emotional

interactions between adolescents and their parents (Smetana & Rote, 2019), and emotional experiences during these interactions shift as adolescents age. For instance, Weymouth et al. (2016) found that adolescents' negative affect associated with conflict increased from early to middle adolescence. Therefore, emotional experiences during interpersonal exchanges and relationship quality appear to shift in tandem, highlighting the importance of controlling for adolescents' age when assessing the parent-adolescent relationship.

Studies have also explored the association between adolescent gender and parent-adolescent relationship quality. For example, boys report higher-quality relationships with their parents than girls (Luijten et al., 2021). Gender differences are also evident in adolescents' behavior during interactions with their parents: boys show more positive behavior (e.g., positive evaluation of parent's performance or competence, reinforcement of parental behavior), while girls show more negative behavior (e.g., negative evaluative comments of parent's performance or competence, signs of irritation, frustration, sarcasm, or anger). These findings highlight how adolescent gender can shape the quality of the relationships and the emotional experience within interactions.

Current Study

Measures of relationship quality have been linked to adolescents' well-being, with better relationships associated with reduced psychological distress, higher life satisfaction, and improved self-esteem. However, emotional experiences during parent-adolescent interactions remain understudied. In other words, we know little about the emotions adolescents experience during interactions with their parents. Investigating both positive and negative emotional experiences during interactions could provide a more comprehensive understanding of the parent-adolescent relationship and offer new insights into adolescents' well-being. Therefore, with this study, I aim to characterize adolescents' positive and negative emotional experiences in interactions with their parents, and to examine a) concurrent associations between these emotional experiences and parent-adolescent relationship quality; and b) associations between these emotional experiences and adolescent well-being over time. These aims will be addressed through the following research questions and hypotheses:

RQ1: What emotions do adolescents report experiencing in their interactions with their parents, and do these differ by age, gender, and level of internalizing symptoms?

H1.1: Younger adolescents will experience more frequent positive emotions and less frequent negative emotions than older adolescents.

H1.2: Girls will report more intense negative emotions than boys.

H1.3: Adolescents with higher levels of internalizing symptoms will experience more frequent negative emotions than adolescents with lower levels of internalizing symptoms.

RQ2: Are adolescents' positive and negative emotions experienced during parent-adolescent interactions related to differences in relationship quality (connectedness and hostility)?

H2.1: Higher levels of positive emotions and lower levels of negative emotions experienced by adolescents will be associated with higher levels of perceived connectedness.

H2.2: Higher levels of negative emotions and lower levels of positive emotions experienced by adolescents will be associated with higher levels of perceived hostility.

RQ3: Do positive and negative emotions experienced during parent-adolescent interactions predict adolescent well-being over time?

H3.1: Adolescents' positive emotions during interactions with their parents will predict increased well-being over time.

H3.2: Adolescents' negative emotions during interactions with their parents will predict decreased well-being over time.

RQ4 (exploratory): Does the effect of adolescents' negative emotions on well-being differ depending on the level of connectedness?

H4.1. There will be a significant interaction between adolescents' negative emotional experience and connectedness in predicting well-being, such that higher parent-adolescent connectedness will reduce the effect of adolescents' negative emotions towards their parents on adolescents' well-being.

An additional exploratory analysis will investigate whether the degree of positive relative to negative emotions (positivity ratio) experienced during interactions is related to relationship quality and adolescent well-being. The positivity ratio, defined as the ratio of positive to negative affect, reflects the prevailing emotional tone of an individual's emotional experience (Fredrickson & Losada, 2005). A positivity ratio = 1 indicates an equal proportion of positive and negative emotions, a positivity ratio > 1 indicates that positive emotions are more frequent than negative emotions, and a positivity ratio < 1 indicates that negative emotions outweigh positive emotions. This ratio represents an alternate metric to the independent influence of positive or negative emotions.

Method

Participants

Adolescents ages 13-18 ($M_{\text{age}} = 15.60$, $SD = 1.71$) and their parent (i.e., an adult in a caregiving role) were recruited between April 2022 and August 2025 as a part of a larger study aimed at developing and validating a new measure of the affective quality of real-world parent-adolescent interactions based on parent-adolescent text message communication. Participants were recruited through three channels: 1) the Undergraduate Research Participant Pool (URPP) at York University; 2) contacting individuals on the Center for Addition and Mental Health Research Registry; and 3) advertising online through social media (Instagram, Facebook) and classified websites (Kijiji). Adolescents participated in the study with the parental figure of their choice. Inclusion criteria for the main study were: 1) adolescent aged between 13 and 18 years-old and a caregiver; 2) currently residing in Canada; 3) the dyad communicates through text

messages at least 3 times per week; 4) both parent and adolescent are capable of providing informed consent; and 5) both parent and adolescent speak English. Exclusion criteria included: 1) adolescents diagnosed with an intellectual disability; and 2) parents or adolescents do not speak, read, and write English sufficiently to complete the questionnaires. A sample of 96 parent-adolescent dyads were included in the present analysis.

Procedure

As part of the larger study, parent-adolescent dyads met with a research assistant upon enrollment, for a baseline visit (Month 0) via a secure videoconference link to review consent and collect contact information. Parents completed a screening questionnaire to ensure the eligibility of the dyad. Then, each participant automatically received an individual link to complete the baseline questionnaires. For the 5 months (Months 1-5) following the baseline visit, parents and adolescents each received a text message or an email with a link to complete the monthly questionnaires via REDcap, a secure research platform. Participants were compensated for their involvement: \$20 for the baseline visit; \$10 for each monthly survey; and \$20 for the follow-up assessment, for a total possible compensation of \$50 per person. Alternatively, a letter documenting the time spent volunteering to participate was provided as compensation for high school students who preferred to collect volunteer hours. Adolescents who chose this option received a total of 4 volunteer hours for their participation. York University students enrolled in Psychology 1010 or Psychology 2030 could opt for course credits (up to 3 credits) through the Undergraduate Research Participant Pool instead of monetary compensation. The study procedures were approved by the Research Ethics Board of the Center for Addition and Mental Health and the Human Participants Research Committee at York University.

Measures

Positive and Negative Emotional Experience

Adolescents rated the emotions they experienced during their interactions with their parent on a modified version of the Positive and Negative Affect Schedule (PANAS) – Short Form (Ebesutani et al., 2012a). The instructions of the PANAS were adapted to be specific to adolescents' emotions in the context of the parent-adolescent relationship. The 10 items of the PANAS are rated on a scale from 1 (Very slightly or Not at all) to 5 (Extremely). Adolescents are asked about the frequency of their positive affect (i.e., Joyful, Cheerful, Happy, Lively, Proud) and negative affect (i.e., Miserable, Mad, Afraid, Scared, Sad) during their interactions with their parent in the past few weeks (see Appendix A for the full questionnaire). Adolescents completed this questionnaire at baseline. Separate total scores for positive (items 1-5) and negative (items 6-10) affect were computed by summing their respective items. Additionally, a positivity ratio was calculated by dividing the positive affect total by the negative affect total. In the current sample, the positive and negative affect items have good internal consistency with Cronbach's alpha coefficients of .92 and .77, respectively.

Perceived Relationship Quality

The dyad separately reported on the quality of their relationship with each other on the Parent-Adolescent Relationship Scale (PARS; Burke et al., 2021). The PARS consists of three subscales: connectedness (behaviors reflecting closeness and intimacy, warmth and affection, and acceptance and approval), shared activity (behaviors related to reciprocal activities between parents and adolescents), and hostility (behaviors suggesting negativity, rejection, and criticism in the relationship). Each subscale was found to have high factor loadings ($>.60$), strong internal consistency, and robust test-retest reliability ($r = .73$ to $.84$; Burke et al., 2021). Respondents indicated on a 6-point scale (0 = Not at all true, 5 = Nearly always or always true) how true the 15 items typically are of their relationship with their parent. Only the responses on the connectedness and hostility subscales were used in this study. In the current sample, the connectedness and hostility subscales have good internal consistency with Cronbach's alpha coefficients of .89 and .80 respectively for parent report, and .88 and .81 respectively for adolescent report. Some items are "My parent encourages me to get support from them or others" and "My parent gets upset when I disagree with them" (see Appendices B & C for the adolescent and parent questionnaires). Participants completed this questionnaire at baseline. Total Connectedness (items 4, 5, 6, 8, 12 and 15) and Hostility (items 7, 9, 11, 13, 14) scores were derived by prorating the corresponding items for parents and adolescents with at least four completed Connectedness items and three completed Hostility items. Parent and adolescent report of connectedness ($r = .483, p < .001$) and hostility ($r = .349, p < .001$) were moderately correlated. Composite Connectedness and Hostility scores were calculated by summing parent and adolescent totals for each subscale).

Adolescent Well-Being

Adolescents reported on their well-being on the Short Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Clarke et al., 2011). This measure demonstrated strong internal consistency and a high Cronbach's alpha of .87 in an adolescent sample (Clarke et al., 2011). Respondents were instructed to describe their experience on 7 items rated from 1 (None of the time) to 5 (All of the time). Adolescents completed this questionnaire every month (Month 0 to Month 5; 6 times total). Copyright restrictions prevented the inclusion of this questionnaire in the appendix. The authors recommend calculating total scores only for participants with complete data on the 7-item measure. Accordingly, item sums were computed for these participants at each month and then converted to metric scores using the published conversion table (CORC, n.d.; Stewart-Brown et al., 2009). In the current sample, this measure has good internal consistency with Cronbach's alpha ranging from .77 to .89 across the monthly time points.

Internalizing Symptoms

Adolescents reported on their internalizing symptoms on the Revised Children's Anxiety and Depression Scale – Short Form (RCADS-25; Ebesutani et al., 2012b; RCADS, n.d.). The measure demonstrates good construct validity and sufficient test-retest reliability ($r = .73$ for the 15 anxiety items, and $.70$ for the 10 depression items; Klaufus et al., 2020). In the current sample, anxiety and depression

subscales had good internal consistency with Cronbach's alpha coefficients of .79 and .87, respectively. Respondents were instructed to indicate how often (1 = never, 4 = always) each one of the 25 items happens to them. Examples of items are "I worry when I think I have done poorly at something," "I suddenly become dizzy or faint when there is no reason for this," and "I feel like I don't want to move" (see Appendix D for the full questionnaire). Adolescents completed this questionnaire at baseline. Anxiety scores were calculated by summing the 15 anxiety items for adolescents with at least twelve completed responses, and Depression scores were calculated by summing the 10 depression items for those with at least eight responses, in accordance with questionnaire authors' guidelines (UCLA, n.d.).

Analysis

All analyses were completed in SPSS and results were considered significant at $p < .05$. Patterns of missing data among study variables were examined. Follow-up analyses were conducted to examine whether attrition in well-being across the timepoints was associated with demographics or baseline variables. Total scores were computed for each variable, with prorating applied to address item-level missing data where appropriate.

To address RQ1, the frequencies for all ten individual PANAS emotion items were examined. To assess whether adolescents' emotional experiences and relationship quality varied as a function of age, anxiety, and depression, Pearson correlation coefficients were computed. A one-way analysis of variance (ANOVA) by gender (boy, girl, gender-expansive) was initially conducted for each construct to examine gender differences. Due to the minimal number of gender-expansive adolescents, an independent-samples *t*-test comparing boys and girls was conducted to obtain more reliable estimates. Tukey's HSD post hoc tests were used to explore pairwise group differences.

To examine the association between adolescents' emotional experiences and their perceptions of relationship quality (RQ2), two separate hierarchical linear regression analyses were conducted, with connectedness and hostility composites as dependent variables. Anxiety, depression, and gender were entered as covariates in the first step based on significant associations identified in RQ1, and total positive and negative affect scores were added in the second step.

To examine whether emotional experiences during parent-adolescent interactions predicted changes in adolescent well-being over time (RQ3), separate linear mixed-effect models were conducted for positive and negative affect scores, which were standardized (*z*-scores). This approach accounted for the repeated-measures structure of well-being data collected across the six-month period. Anxiety, depression, and gender were included as covariates based on significant associations identified in RQ1.

Lastly, to test whether connectedness moderated the association between adolescents' negative emotional experience and their well-being trajectory (RQ4), two linear mixed-effects models were conducted. In the first model, overall well-being was examined by modeling repeated well-being without including time as a fixed effect, therefore estimating adolescents' overall level of well-being. Moderation was tested by including the interaction between negative emotional experience and connectedness, such that a significant

interaction would indicate that the association between negative emotions and well-being varies as a function of connectedness. In the second model, well-being over time was examined by including time as a fixed effect. Moderation of change over time was examined by including a three-way interaction between time, negative emotional experience, and connectedness, assessing whether the moderating effect of connectedness on the association between negative emotions and well-being differs across time. Anxiety, depression, and gender were included as covariates based on significant associations identified in RQ1.

Extreme values (± 2.24 SD; Aguinis et al., 2013) were then examined. Follow-up inspection of participants with extreme values did not reveal any ambiguous or odd response patterns (e.g., same response for every question). These participants were retained in the analyses. However, data points identified as extreme were excluded. Analyses for RQ2-RQ4 were subsequently re-run without these extreme values to determine if the pattern of results differed.

All analyses were also rerun using the positivity ratio to test whether adolescents' well-being and parent-adolescent relationship quality are associated with the degree of positive relative to negative emotions experienced during interactions (i.e., the discrepancy between positive and negative emotional experience), rather than the independent effects of positive or negative emotions considered separately.

Results

Table 1 provides detailed demographic information for the sample. Most adolescents participated with their biological, adoptive, or step-parent (96.8%) while the rest enrolled with another family member in a caregiving role (e.g., grandparent, adult sibling, uncle). The term "parent" will be used throughout. Most adolescents (82.6%) lived with their participating parent all week. Adolescents identified as uniraical (74.2%) or biracial (25.8%). At baseline, adolescents ($M_{\text{age}} = 15.60$, $SD = 1.71$) were enrolled in elementary school (29.1%), high school (60.5%), or were pursuing a college or an undergraduate degree (10.4%). Caregivers were mostly women (87.1%) and ranged between 27 and 72 years ($M_{\text{age}} = 46.77$, $SD = 6.35$). Most dyads resided in Ontario (82.8%), while the rest participated from other provinces across Canada. Family annual income varied, ranging from less than 30 000 to over 150 000 ($Mode = \geq 150\ 000$)

Table 1

Demographic Characteristics of the Sample

Characteristics	Adolescent		Caregiver	
	Percent	N	Percent	N
Gender				
Girls/women	55.2	53	87.1	81
Boys/men	43.8	42	12.9	12
Gender expansive	1.0	1	-	-
Ethnicity				
White North American	31.3	30	20.6	20
White European	26.0	25	23.7	23

East Asian	16.7	16	14.4	14
South Asian	13.5	13	12.4	12
South-East Asian	7.3	7	6.2	6
Black African	6.3	6	6.2	6
Latin American	4.2	4	4.1	4
Middle Eastern	3.1	3	3.1	3
Black Caribbean	3.1	3	2.1	2
Black North American	2.1	2	2.1	2
Indian Caribbean	1.0	1	2.1	2
Métis	1.0	1	1.0	1
Education				
Elementary school	29.1	28	-	-
High school	60.5	58	-	-
Undergraduate	10.4	10	-	-
No postsecondary	-	-	1.1	1
Some postsecondary	-	-	7.6	7
Trade school or college	-	-	22.8	21
Undergraduate degree	-	-	30.4	28
Graduate degree	-	-	38.0	35
Days/week Spent Together				
Seven	-	-	82.6	76
Six	-	-	1.1	1
Five	-	-	-	-
Four	-	-	4.3	4
Three	-	-	2.2	2
Two	-	-	2.2	2
One or less	-	-	7.6	7

All participants completed all questionnaires at baseline (M0). Across months 1-5 (M1-M5), 13 participants did not complete the well-being questionnaire at M1, 16 at M2, 19 at M3, 20 at M4, and 16 at M5. At M1 and M2, no variables were significantly associated with missingness. Across M3 to M5, there was some indication that missingness in well-being data varied as a function of several measured variables. Lower caregiver education was significantly associated with higher odds of missing data at M3 ($\beta = -0.916$, $p = .001$), M4 ($\beta = -0.528$, $p = .037$), and M5 ($\beta = -1.430$, $p < .001$). These results should be interpreted with caution given small cell sizes. Family income also differed significantly at M3 ($t(77) = 1.993$, $p = .050$), M4 ($t(77) = 2.172$, $p = .033$), and M5 ($t(77) = 2.836$, $p = .006$), indicating that adolescents from lower-income families were more likely to have missing well-being data. Caregiver role (e.g., biological parent, step-parent, and adult sibling; $\chi^2 = 12.074$, $p = .007$) and younger caregiver age ($t(91) = 2.708$, $p = .008$) were also significant predictors of missingness at M4. Adolescent education and age, time spent with adolescent per week, number of children and number of parents in the family, adolescent emotions, adolescent internalizing symptoms, parent-adolescent relationship quality, mean well-being, and well-being at baseline were not significant predictors of missingness at any timepoint, suggesting the data are missing at random.

Table 2 shows descriptives of the variables. Table 3 (see Appendix E) shows correlations between the variables.

An examination of extreme values indicated that four participants had extremely low total positive emotion scores, three had extremely high total negative emotion scores, four had extremely low composite connectedness scores, two had extremely high composite hostility scores, three had extremely high anxiety scores, and four had extremely high depression scores. In addition, nine participants had extremely high total well-being scores and one participant had an extremely low total well-being score at one or more timepoints. Therefore, a total of 30 data points were removed from analyses and analyses were re-run to examine the influence of these extreme values.

Table 2

Descriptives of the Total Scores

	<i>N</i>	Possible Range	<i>M</i>	<i>SD</i>
Emotional Experience				
Positive	96	5 – 25	18.97	4.45
Negative	96	5 – 25	8.60	3.39
Positivity Ratio	96	0.2 – 5	2.61	1.20
Relationship Quality				
Adolescent Connectedness	96	0 – 30	22.61	6.46
Caregiver Connectedness	96	0 – 30	25.14	4.77
Total Connectedness	96	0 – 60	47.75	9.70
Adolescent Hostility	96	0 – 25	6.74	4.57
Caregiver Hostility	96	0 – 25	6.61	3.86
Total Hostility	96	0 – 50	13.36	6.93
Internalizing Symptoms				
Anxiety	96	15 – 60	25.50	6.00
Depression	96	10 – 40	18.48	5.54
Well-Being				
Baseline	94	7 – 35	23.51	3.82
Month 1	83	7 – 35	23.18	4.29
Month 2	80	7 – 35	23.05	3.62
Month 3	75	7 – 35	23.17	4.44
Month 4	76	7 – 35	23.14	3.95
Month 5	81	7 – 35	23.32	4.05

Descriptions of Adolescents' Emotional Experience and Relationship Quality

At baseline, adolescents reported feeling significantly more positive ($M = 18.97$, $SD = 4.45$) than negative ($M = 8.60$, $SD = 3.39$) emotions during their interactions with their parents ($t(95) = 14.76$, $p < .001$). Among positive emotions, happy was most frequently experienced ($M = 3.99$, $SD = 0.02$) followed by lively ($M = 3.85$, $SD = 1.05$), joyful ($M = 3.82$, $SD = 0.93$), cheerful ($M = 3.73$, $SD = 1.02$), and proud ($M = 3.57$, $SD = 1.20$). Among negative emotions, mad was the most reported emotion ($M = 2.06$, $SD = 1.08$), followed

by sad ($M = 2.03$, $SD = 1.03$), miserable ($M = 1.65$, $SD = 0.89$), afraid ($M = 1.44$, $SD = 0.82$), and scared ($M = 1.43$, $SD = 0.84$).

Positive ($r = .116$, $p = .260$) and negative ($r = .004$, $p = .972$) emotional experiences were not significantly correlated with adolescent age. Additionally, no gender differences were found for positive, $t(94) = -.475$, $p = .636$, and negative, $t(94) = .995$, $p = .322$, emotional experience. Positive emotional experience was significantly and negatively correlated with depression ($r = -.465$, $p < .001$), but not anxiety ($r = -.189$, $p = .065$). Negative emotional experience was significantly and positively correlated with depression ($r = .347$, $p = .001$) and anxiety ($r = .248$, $p = .015$).

The dyads reported experiencing relationships that were significantly higher in connectedness ($M = 47.75$, $SD = 9.70$) than in hostility ($M = 13.36$, $SD = 6.93$), $t(95) = 23.43$, $p < .001$. Connectedness ($r = .004$, $p = .970$) and hostility ($r = -.024$, $p = .818$) were not significantly correlated with adolescent age. Girls ($M = 45.99$, $SD = 11.14$) experienced significantly lower levels of connectedness than boys ($M = 49.94$, $SD = 7.20$; $t(93) = -2.087$, $p = .040$). No gender differences were found for hostility. Connectedness was significantly and negatively correlated with depression ($r = -.393$, $p < .001$) and anxiety ($r = -.277$, $p = .006$) while hostility was significantly and positively correlated with depression ($r = 3.90$, $p < .001$) and anxiety ($r = .352$, $p < .001$).

Emotional Experience and Relationship Quality

Connectedness

Table 4 shows the results for the hierarchical regression models. Depression, anxiety and gender explained 16.3% of the variance in connectedness, $R^2 = .163$, $F(3, 92) = 5.975$, $p < .001$, with higher depression associated with lower connectedness, while anxiety and gender were not significant. Once positive and negative emotional experiences were added, the model explained 37.1% of the variance, $R^2 = .371$, $F(5, 90) = 10.598$, $p < .001$. Adolescents' emotional experience explained an additional 20.8% of the variance in connectedness, with higher positive emotion associated with higher connectedness, while negative emotions, depression, anxiety, and gender were not significantly associated with connectedness. After removing extreme values, results were similar, with only positive emotions a significant predictor of connectedness.

Hostility

Depression, anxiety, and gender explained 18% of the variance in hostility, $R^2 = .180$, $F(3, 92) = 6.754$, $p < .001$, with higher depression associated with higher hostility, while anxiety and gender were not significant. Once positive and negative emotional experiences were added, the model explained 30.7% of the variance in hostility, $R^2 = .307$, $F(5, 90) = 7.990$, $p < .001$. Adolescents' emotional experiences explained an additional 12.7% of the variance. Lower positive emotion and higher anxiety were significantly associated with higher hostility, while negative emotions, depression, and gender were not significant. After removing extreme values, lower positive emotion ($\beta = -.205$, $t = -4.058$, $p < .001$) and higher negative emotions ($\beta = .158$, $t = 3.400$, $p < .001$) both significantly predicted higher hostility.

Table 4*Emotional Experiences Predicting Connectedness and Hostility*

Predictors	Connectedness						Hostility					
	Model 1			Model 2			Model 1			Model 2		
	β	t	p	β	t	p	β	t	p	β	t	p
Depression	-0.362	-2.888	.005	-0.052	-0.419	.676	0.286	2.305	.023	0.045	0.347	.729
Anxiety	-0.006	-0.046	.963	-0.092	-0.795	.429	0.210	1.636	.105	0.272	2.235	.028
Gender	0.096	0.926	.357	0.122	1.345	.182	0.114	1.122	.265	0.095	1.000	.320
Positive	—	—	—	0.500	4.629	< .001	—	—	—	-0.367	-3.235	.002
Negative	—	—	—	-0.042	-0.413	.680	—	—	—	0.072	0.686	.494

Note: $N = 96$. β = standardized coefficients. Bold indicates significant predictors ($p < .05$). Results of analyses with extreme values included.

Emotions, Relationship Quality, and Well-Being

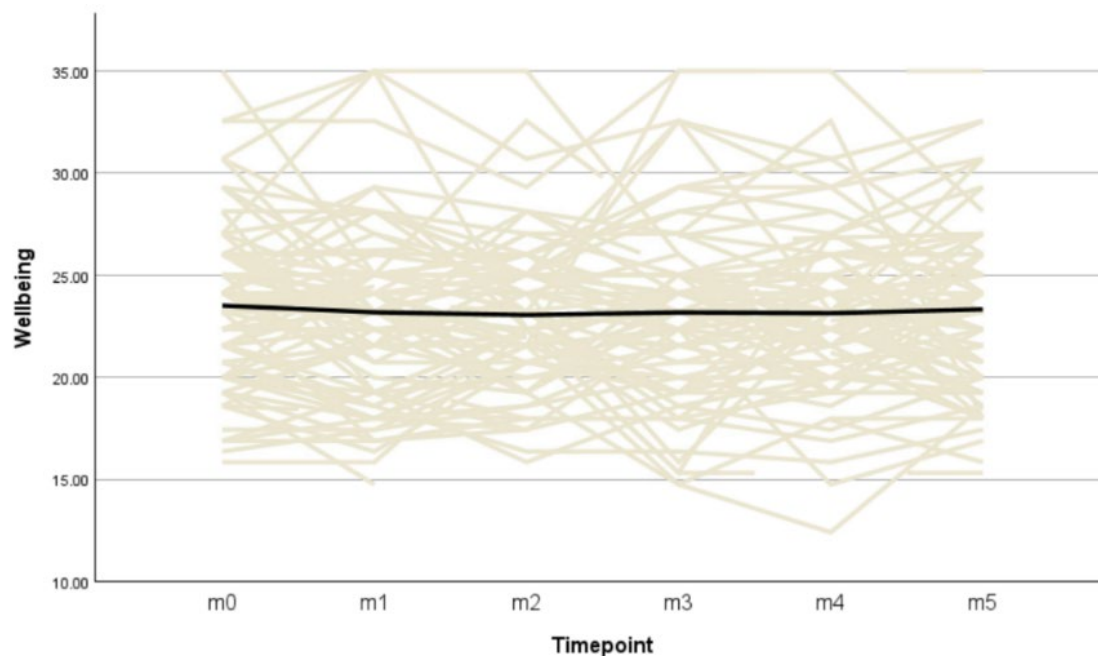
Table 5 shows the results for the mixed model analyses. There was no significant effect of time on adolescents' well-being, $F(5, 234.47) = .355$, $p = .878$, indicating that well-being remained stable across the six months (Figure 1). In the positive emotion model, adolescents who reported higher positive emotions at baseline also reported higher well-being overall (i.e., when aggregated across timepoints). Baseline positive emotions did not predict the slope of (i.e., change in) well-being over time. Higher baseline depression was associated with lower well-being overall. Adolescent anxiety and gender were not associated with well-being overall. After removing extreme values, only depression significantly predicted well-being ($F(5, 78.37) = 12.310$, $p < .001$).

In the negative emotion model, baseline negative emotions did not significantly predict adolescent well-being overall. Baseline negative emotions did not predict the slope of (i.e., change in) well-being over time. Higher baseline depression was associated with lower well-being overall. Adolescent anxiety and gender were not associated with well-being overall. After removing extreme values, only depression significantly predicted well-being ($F(1, 84.01) = 22.063$, $p < .001$).

Table 5*Predictors of Adolescents' Well-Being*

Predictors	Positive Emotion Model		Negative Emotion Model	
	F	p	F	p
Timepoint	0.391	.854	0.357	.878
Emotion	11.525	< .001	2.082	.152
Depression	21.804	< .001	36.506	< .001
Anxiety	2.214	.140	1.058	.306
Gender	1.307	.256	0.849	.359
Emotion * Timepoint	1.039	.395	1.549	.175

Note: Bold indicates significant predictors ($p < .05$). Results of analyses with extreme values included.

Figure 1*Adolescents' Mean Well-Being Across the Six Months*

Note: Participants completed the Short Warwick-Edinburgh Mental Well-Being Scale six times, from M0 to M5.

When assessing the moderating effect of connectedness on the association between adolescents' negative emotions and well-being, results were not significant in both the model without timepoint ($F(1, 109.08) = 2.043, p = .156$) and the model with timepoint ($F(1, 109.72) = 2.197, p = .141$) as a predictor. This remained true when removing extreme values.

An Exploration of the Positivity Ratio

Adolescent reports reflect a ratio that indicates more positive than negative emotions ($M = 2.61, SD = 1.20$). A minority (8.3%) had a positivity ratio < 1 , while the rest reported a positivity ratio > 1 (range = 0.29 – 5.00). Girls ($M = 2.48, SD = 1.19$) reported a significantly lower ratio than boys, $M = 2.77, SD = 1.21; t(574) = -2.971, p = .003$.

Table 6 shows the results for the hierarchical regression. The positivity ratio explained an additional 7.7% of the variance in connectedness, $\Delta R^2 = .077, \Delta F(1, 571) = 57.708, p < .001$ above and beyond depression, anxiety, and gender, $R^2 = .240, F(4, 571) = 45.053, p < .001$. Higher positivity ratio, lower depression, and being a boy were associated with greater connectedness in this model.

The positivity ratio accounted for an additional 9.3% of the variance in hostility, $\Delta R^2 = .093, \Delta F(1, 571) = 73.407, p < .001$. Lower positivity ratio, higher depression, higher anxiety, and being a boy were significantly associated with higher hostility.

Table 6*Positivity Ratio Predicting Connectedness and Hostility*

Predictors	Connectedness						Hostility					
	Model 1			Model 2			Model 1			Model 2		
	β	t	p	β	t	p	β	t	p	β	t	p
Depression	-0.362	-7.201	<.001	-0.234	-4.608	<.001	0.286	5.748	<.001	0.145	2.920	.004
Anxiety	-0.006	-0.116	.908	0.007	0.143	.887	0.210	4.080	<.001	0.196	4.030	<.001
Gender	0.096	2.309	.021	0.099	2.498	.013	0.114	2.797	.005	0.111	2.881	.004
Ratio	—	—	—	0.309	7.597	<.001	—	—	—	-0.340	-8.568	<.001

Note: $N = 96$. β = standardized coefficients. Bold indicates significant predictors ($p < .05$).

The positivity ratio did not predict the slope of well-being over time, $F(5, 244.24) = 1.596$, $p = .162$; however, adolescents with a higher baseline positivity ratio reported higher well-being overall, $F(1, 93.62) = 5.443$, $p = .022$.

When examining whether connectedness moderated the association between adolescents' positivity ratio and well-being, the interaction was not significant in both the model without timepoint, $F(1, 105.63) = 2.105$, $p = .150$, and the model with timepoint, $F(1, 107.037) = 2.088$, $p = .151$, as a predictor.

Discussion

The emotions adolescents experience in their interactions with their parents may play a role in shaping both the parent-adolescent relationship and adolescent well-being. This study examined adolescents' emotional experiences during parent-adolescent interactions and how these emotions relate to relationship quality and predict adolescent well-being over time. Adolescents' emotional experiences during parent-child interactions were significantly associated with depression and anxiety, but no age or gender differences in emotional experiences were found. Higher positive emotions were linked to greater connectedness and lower hostility, while negative emotions were only associated with higher hostility after removing extreme values. Baseline positive emotions were associated with overall well-being, but baseline positive and negative emotions did not predict change in well-being over time. Connectedness did not moderate the association between negative emotions and well-being. These results suggest that positive emotions during parent-adolescent interactions may be a key contributor to parent-adolescent relationship quality and are related to adolescent well-being. Moreover, well-being may remain stable despite the presence of negative emotions and variations in adolescents' emotional experience.

What Emotions do Adolescents Experience in their Interactions with their Parent?

Adolescents in the sample reported experiencing more positive than negative emotions in their interactions with their parents. The predominance of positive emotion experiences is consistent with the results from Meininger et al. (2004) who found that 11-16 year olds experienced more feelings of happiness and relaxation in a day than irritability, anger, and sadness. Adolescents might also have reported more positive emotions due to their salience. This potential explanation aligns with research challenging the notion that negative emotions dominate attentional processes, highlighting that positive emotions can also capture cognitive resources (Gupta, 2019). Additionally, Cheng's (2006) work suggests that positive

emotional experiences could become particularly salient when contrasted with negative ones, therefore influencing the overall evaluation of a situation. This suggests that adolescents may have reported higher levels of positive emotions due to experiencing more positive emotions and due to the cognitive salience of positive emotions.

Adolescents' positive and negative emotional experiences in parent interactions did not vary by age or gender. This is noteworthy given prior research suggesting an increase in negative emotions throughout adolescence (Bailen et al., 2019; Frost et al., 2015). Although the sample included a relatively balanced distribution of gender and a broad age range, the higher proportion of 17-year-old participants may have limited the ability to detect age-related differences, as there may not have been sufficient representation within each age group to observe developmental differences. It is also possible that the trajectory of adolescents' emotional experiences specifically within the parent-adolescent relationship differs from that of their overall emotional state.

A gender difference emerged for the positivity ratio, with girls reporting a lower ratio than boys. This suggests that, relative to positive affect, girls experience greater negative affect in the context of parent-adolescent interactions than boys. This finding is consistent with prior research showing that adolescent girls across multiple countries report higher levels of negative affect than boys (Frost et al., 2015; Larson & Asmussen, 1991), with no corresponding difference in positive affect observed (Jovanović et al., 2025). An alternative interpretation is that girls might experience a more balanced emotional profile, with positive and negative emotions occurring at more similar levels compared to boys. This aligns with findings indicating that girls report higher levels of both positive and negative emotions (Esteban-Gonzalo et al., 2020), suggesting greater balance rather than simply greater negativity, and extending these findings to emotions experienced in interactions with their parent.

Linking Emotions to Relationship Quality

In this study's sample, positive emotions, but not negative emotions, were linked to better parent-adolescent relationship quality. Emotions such as happiness and joy likely capture moments of shared enjoyment, support, and engagement, which contribute to feelings of closeness and warmth. Additionally, positive emotions can actively shape relational dynamics. According to Fredrickson (2004), positive emotions encourage engagement with one's environment. In the context of a positive parent-adolescent relationship, adolescents could be motivated to engage more with their parents, fostering further positive emotional exchanges in a reciprocal way (Butler, 2011). Complementing this, the positivity resonance theory suggests that even brief moments of shared positive affect can foster a sense of connection within relationships (Fredrickson, 2016). Indeed, a supportive parent-adolescent relationship is concurrently associated with the positive emotions adolescents reported feeling when they are at home (Arslan et al., 2024). Previous longitudinal studies have examined the reciprocal association between adolescents' positive emotions and relationship quality and found that they mutually influence and reinforce each other

over time (Griffith et al., 2021; Ramsey & Gentzler, 2015). Therefore, it is also likely that the association between positive affect and connectedness in the present study is bidirectional.

Although overall hostility levels were low in the sample, lower positive emotions were also associated with higher hostility between parents and adolescents. This finding is consistent with previous research indicating that higher levels of conflict are associated with lower positive emotions (e.g., Bülow et al., 2022) and underscore the importance of positive emotional experiences in interpersonal interactions. This might be particularly relevant in the context of shared positive experiences. The Temporal Interpersonal Emotion System posits that during parent-adolescent interactions, individual emotions combine to form a shared emotional experience (Lougheed & Keskin, 2021). Supporting this idea, a study with couples has shown that co-experienced positive affect is more strongly associated with relationship quality than co-experienced negative affect (Brown et al., 2022). Taken together, these findings suggest that parent-adolescent relationships characterized by interactions that foster (shared) positive emotions may exhibit better overall relationship quality, including lower hostility.

Participants in the present study reported relationships characterized by closeness, warmth, and acceptance rather than negativity, rejection, and criticism, which might be due in part to sample characteristics and might contribute to the predominance of positive emotions and connectedness. Because participants were a low-risk community sample who self-selected into participating and selected the parent/adolescent with whom they participated, they may have chosen one with whom they had a relatively positive relationship, potentially amplifying this pattern of findings. Additionally, mothers were overrepresented among participating parents, potentially explaining the higher levels of connectedness and positive emotions. Indeed, mothers spend more time with adolescents than fathers do, and mothers are more likely to engage in an expressive way that reflects warmth, sensitivity, and nurturance (McKinney & Renk, 2011). In contrast, fathers' interactions with their teens emphasize independence, assertiveness, and achievement (McKinney & Renk, 2011; Shek, 2008). Therefore, the current pattern of results could be explained by the positivity of the parent-adolescent relationship but could also reflect sample characteristics.

Despite the overall predominance of positive emotions, adolescents reported feeling mad most frequently among negative emotions. This might capture typical emotional reactivity and conflict in parent-adolescent relationships. Such conflict and negative emotions are normative during adolescence and are not inherently maladaptive unless they are chronic or intense (Branje et al., 2021; Fredrickson, 2004), which does not appear to characterize this sample. It is also possible that some reported negative emotions reflect broader internal distress (e.g., anxiety or depression) rather than relationship-specific experiences. In this way, negative emotions could be too intertwined with depressive mood reported by the sample, and less clearly attributed to the parent-adolescent context.

Negative emotions were not significantly related to connectedness and were only associated with higher levels of hostility after removing extreme values. These results contrast with some prior research showing that greater warmth and lower conflict within families are associated with higher positive emotions

and lower negative emotions among adolescents (e.g., Bülow et al., 2022). One possible explanation is the relatively low levels of negative emotions and high levels of connectedness observed in the present sample, which may have limited variability and reduced the ability to detect an association. These findings might also suggest that positive emotions are more informative of relationship quality than negative emotions, particularly within a low-risk community sample. This is consistent with results from a study that found that greater daily parent-adolescent connectedness was not associated with negative emotions, but was related to higher positive emotions (Chiang, 2025b). On a similar note, hostility might reflect an absence of positive emotions, rather than the presence of negative ones.

Inspection of extreme cases indicated that all excluded participants reported high levels of negative emotions or hostility but exhibited discordant patterns across variables: adolescents reporting high levels of negative emotions did not show high levels of hostility, and those with elevated hostility did not report high negative emotions. These mismatched patterns likely attenuated the overall association, helping to explain why the relationship became significant after their removal. Additionally, with the exception of one case, these participants were characterized by below-average positive emotions and above-average negative emotions, suggesting a broader emotional profile that could have contributed to the association. Lastly, because negative emotions were self-reported by adolescents whereas total hostility reflected a combined parent-adolescent report, discrepancies between informants may have also contributed to this result.

A higher positivity ratio, reflecting greater positive emotions relative to negative emotions, was associated with connectedness, whereas a lower positivity ratio, reflecting higher negative emotions, less positive emotions, or a more balanced emotional profile, was associated with higher hostility. This finding aligns with the results above, suggesting that greater positive emotional experience is linked to connectedness while reduced positive emotions or elevated negative emotions are associated with hostility. At the same time, these findings highlight that the relative balance of positive and negative emotions may also be informative for understanding parent-adolescent relationship quality rather than considering the two dimensions separately. The Broaden-and-Build Theory posits that positive emotions can protect against the effects of negative emotions (Fredrickson, 2004). In parent-adolescent relationships, this buffering could promote more favorable interpretations of each other's behavior and support more constructive communication, fostering connectedness. Conversely, when positive emotions are less available to offset negative affect, interactions may be more likely to tip into hostility.

Additionally, the positivity ratio might be influenced by cultural factors. For example, a study of Belgian and Japanese couples who rated their affect after engaging in a lab interaction found that a higher positivity ratio was associated with greater relationship satisfaction, but was achieved through different emotional pathways (Buckingham et al., 2023). Belgian couples reached a higher positivity ratio by experiencing more positive emotions, while Japanese couples reached a higher positivity ratio by experiencing fewer negative emotions. This distinction suggests that cultural differences in emotional

experience may also be relevant in the present, diverse sample. This would be an important avenue for future research in larger samples with sufficient representation of different cultural groups.

Well-Being and Emotional Experience

Emotional experiences, including the positivity ratio, did not predict changes in adolescent well-being over time. The relative stability of adolescents' well-being across the six-month period likely contributed to this finding. Well-being has been conceptualized as a relatively stable construct, particularly over shorter timeframes and when assessed at the level of mean differences (Chamberlain & Zika, 1992). Furthermore, well-being is a global construct influenced by multiple domains of adolescents' lives beyond parent-adolescent interactions (e.g., Brydges et al., 2025; Chamberlain & Zika, 1992). As such, adolescents may report stable levels of well-being due the influence of other contextual factors, such as peer relationships, academic experiences, and broader life events. In line with this, well-being is thought to be influenced by more enduring factors such as depressive symptomology, personality, and genetic predispositions (Anusic & Schimmack, 2016; Nes et al., 2006), rather than by momentary emotional fluctuations or external circumstances.

On the other hand, there is some evidence that well-being can change in response to significant life events or transitions. Current life stressors and circumstances have been found to influence current well-being, although that effect tends to be temporary unless such conditions are chronic (Chamberlain & Zika, 1992; Nes et al., 2006). Additionally, Montserrat et al. (2015) found that across 7 countries, changes in young adolescents' subjective well-being over a one-year period were negatively associated with changes in different life domains such as school, material conditions, and relationships. Together, these findings suggest that well-being may be relatively stable in the absence of significant life changes but remains sensitive and variable when meaningful change occurs.

Although not predicting changes in well-being over time, adolescents' experiences of positive emotions during their interactions with their parent were associated with their overall levels of well-being. This is consistent with previous research; for example, Rusu & Colomeischi (2020) found that, among teachers, a higher positivity ratio predicted greater work engagement which in turn, increased well-being. Positive emotions have been identified as a key component of well-being (Gupta, 2019). Going back to the Broaden-and-Build Theory, experiencing or being attuned to positive emotions in moments of difficulties can help cope with negative emotions and contribute to improved psychological well-being and resilience (Fredrickson, 2004). Positive emotions are beneficial to attention and cognition, promoting more open and flexible thinking, which helps with facing and recovering from challenges in the short- and long-term. Over time, this process can foster an upward spiral, where experiencing positive emotions increases the likelihood of finding positive meaning in future events, further enhancing coping and well-being.

When examining the moderating role of connectedness on the association between negative emotions and well-being, results were not significant. One possible explanation is that most adolescents reported moderate to high levels of connectedness alongside low levels of negative emotions, which might

have limited variability and reduced the ability to detect moderation effects. The overall stability of well-being might also have contributed to this result. Alternatively, relationship quality might have a direct effect on adolescents' well-being rather than buffering the impact of negative emotions. Indeed, adolescents' feelings of belonging and connectedness to their parents have been positively linked to their well-being and to better adolescent outcomes (Fosco et al., 2021; King et al., 2018). On a similar note, the positive emotions that might stem from the higher levels of connectedness reported by the sample could help undo the effects of negative emotions associated with hostility by broadening individuals' perspectives and allowing them to place negative experiences within a larger context (Fredrickson, 2004). In line with these results, a study found that on days when connectedness was high, parental negative emotions were not associated with adolescents' negative emotions, and adolescents still reported high positive emotions (Chiang, 2025b). In this way, positive emotions experienced in interactions with parents may buffer or mitigate the impact of concurrent negative emotions, and in turn, benefit well-being, an effect that could be tested in future longitudinal moderation analyses.

Strengths and Limitations

This study addressed a novel question by examining adolescents' emotional experiences within the context of parent-adolescent interactions, rather than relying solely on behavioral indicators of relationship quality. Another strength is the simultaneous examination of both positive and negative emotions, moving beyond the traditional focus on negative experiences to provide a more balanced understanding of adolescents' emotional lives. Additionally, the use of a community sample allows for the investigation of typical emotional experiences, rather than focusing exclusively on psychopathology. The sequential design, with data collected monthly over a six-month period for adolescents of different ages, allowed for the examination of temporal associations between well-being, and emotional experiences or relationship quality. Moreover, well-being data were collected in real-life contexts outside the lab, enhancing ecological validity by capturing naturally occurring emotional experiences. Finally, the sample was ethnically diverse, reflecting the diversity of Ontario and Canada, which strengthens the relevance of the findings to a broader population.

Despite these strengths, the study has some limitations that should be acknowledged. First, the assessment of adolescents' emotional experiences relied on a brief 10-item version of the PANAS, which captures a relatively limited range of emotions. As such, the short version measure might not fully represent the breadth of adolescents' emotional experiences, particularly emotions such as guilt, shame, gratitude, or disappointment, which might be relevant in the parent-adolescent relationship. Additionally, some items may have been difficult for adolescents to distinguish (afraid vs scared, joyful vs happy), potentially reducing measurement precision (de Rivera & Grinkis, 1986). It would also be interesting to not only assess the frequency of emotions, but also their intensity (Rhodes-Purdy et al., 2021). Indeed, the intensity of negative emotions (lonely, embarrassed, sad, angry, and left-out) was found unchanged across adolescence among adolescent boys but improved among girls (Weinstein et al., 2007). Gender or age differences in

interpersonal emotional experience could be related to intensity rather than frequency of emotions. Future research would benefit from using the full PANAS, or comprehensive emotion measures that capture a wider and more nuanced emotional spectrum.

Second, well-being was the only construct assessed longitudinally, limiting our ability to examine if and how changes in emotional experiences unfold over time or relate to other variables. Including longitudinal assessment of the other constructs would allow for a more comprehensive understanding of developmental processes. On a related note, the relatively short study duration restricts conclusions about long-term developmental trajectories and might explain the lack of variation in well-being. Extending the study over a longer period and inquiring about minor and major life events could provide greater insight into how emotional experiences and well-being evolve over time.

The content and context of the parent-adolescent interactions were also not measured, and they may play a critical role in shaping emotional experiences. Future research should incorporate measures of interaction content (e.g., discussion topics) and include reports from both parents when applicable. Additionally, adolescents behave differently with mothers and fathers (Cotar-Konrad, 2016) and perceive their relationship with their mother as more positive than their relationship with their father (Shek, 2008). Duhig & Phares (2009) also found that in same-gender dyads (i.e., mother-daughter, father-son), parents expressed less negative affect in their interactions with their teenagers as they got older. Including assessments of adolescents' relationship with mothers and fathers might better capture the dyadic nature of interactions and provide more insight on potential discrepancies in adolescents' interpersonal emotional experience. Therefore, future research should explore the effect of parent and adolescent gender in parent-adolescent relationship quality and well-being as well as investigate the relationship with other family members for a more comprehensive understanding of social interactions. On a similar note, composites of parent and adolescent ratings were used in this study for the relationship quality indicators while being only moderately correlated. Using composite scores decreased informant biases, but may have affected the ability to detect associations with relationship quality. Future studies could examine parent and adolescent reports separately, or model informant discrepancies directly to capture unique perspectives on relationship quality.

Additionally, this study focused on unidirectional associations and did not examine the bidirectional nature of the associations between emotions, relationship quality, and well-being. These processes are dynamic and mutually influential. For instance, adolescents' well-being shapes how they behave in interactions (e.g., more withdrawn, more irritable, more engaged), which influences parenting responses, that in turn feed back into the adolescents' emotions and well-being, as well as their responses in subsequent interactions. Arslan et al. (2024) found that parent-adolescent conflict shaped and was shaped by adolescents' emotions. Another study found that young adolescents' academic achievement was improved by high quality parent-adolescent relationships through increased school well-being, and also by higher school well-being through better quality relationships (Kiuru et al., 2020), illustrating the reciprocal

influence of well-being and relationship quality. Therefore, examining bidirectional effects in future studies can uncover cycles of influence to understand patterns and processes and inform interventions.

Lastly, the sample was predominantly of high socioeconomic status, which limits the generalizability of the findings as it does not consider potential risk factors to relationship quality (e.g., financial stress). Replication in more socioeconomically diverse samples is needed to determine the broader application of these results.

Conclusion

The findings suggest that positive emotions experienced in parent-adolescent interactions play a central role in parent-adolescent relationships and adolescents' well-being. Although adolescence is often associated with conflict, parent-adolescent interactions appear to be predominantly positive. The results also indicate that well-being may remain stable despite the presence of negative emotions and variations in adolescents' emotional experience. Together, these findings highlight the importance of attending to the presence and function of positive emotional experiences within relationships, as they might be more indicative of well-being and relationship quality than negative emotions. Health promotion interventions targeting parent-adolescent relationships may therefore benefit from nurturing positive emotional exchanges as a means of strengthening relationship quality and supporting resilience in the face of negative emotions and mental health challenges.

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Appendix A: Positive and Negative Affects Schedule

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you have felt this way during the past few weeks during interactions with your parent/caregiver.

	1	2	3	4	5
	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
1. Joyful					
2. Cheerful					
3. Happy					
4. Lively					
5. Proud					
6. Miserable					
7. Mad					
8. Afraid					
9. Scared					
10. Sad					

Appendix B: Parent-Adolescent Relationship Scale - Adolescent

Please read each statement and select a number from 0 to 5 that indicates how true the statements typically are of your relationship with your mom/dad. There are no right or wrong answers. Do not spend too much time on any statement.

0	1	2	3	4	5
Not at all true	A little of the time	Some of the time	A lot of the time	Most of the time	Nearly always or Always true
1.	We eat meals together				
2.	We spend time together doing activities we each like				
3.	We go to family events together				
4.	My parent encourages me to get support from them or others				
5.	My parent shows affection to me (e.g., hugs, kisses, smiling, arm around shoulder)				
6.	My parent comforts me when I am upset				
7.	My parent makes negative comments about me to others				
8.	During stressful times in my life, my parent checks if I am okay				
9.	My parent gets upset when I disagree with them				
10.	My parent plays sport or does other physical activities with me				
11.	I complain about my parent				
12.	My parent encourages me to do things I am interested in or enjoy				
13.	My parent criticizes me				
14.	My parent thinks I need to change my attitude				
15.	My parent encourages me to talk about my thoughts and feelings				

Appendix C: Parent-Adolescent Relationship Scale - Parent

Please read each statement and select a number from 0 to 5 that indicates how true the statements typically are of your relationship with your teenager. There are no right or wrong answers. Do not spend too much time on any statement.

0	1	2	3	4	5
Not at all true	A little of the time	Some of the time	A lot of the time	Most of the time	Nearly always or Always true
1.	We eat meals together				
2.	We spend time together doing activities we each like				
3.	We go to family events together				
4.	I encourage my teenager to get support from me or others				
5.	I show affection to my teenager (e.g., hugs, kisses, smiling, arm around shoulder)				
6.	I comfort my teenager when he/she/they are upset				
7.	I make negative comments about my teenager to others				
8.	During stressful times in my teenagers' life, I check if he/she/they are okay				
9.	I get upset when my teenager disagrees with me				
10.	I play sports or do other physical activities with my teenager				
11.	My teenager complains about me				
12.	I encourage my teenager to do things he/she/they are interested in or enjoy				
13.	I criticize my teenager				
14.	I think my teenager needs to change his/her/their attitude				
15.	I encourage my teenager to talk about his/her/their thoughts and feelings				

Appendix D: Revised Children's Anxiety and Depression Scale – Short Form

Please select the word that shows how often each of these things happens to you. There are no right or wrong answers.

1	2	3	4
Never	Sometimes	Often	Always

1. I feel sad or empty
2. I worry when I think I have done poorly at something
3. I would feel afraid of being on my own at home
4. Nothing is much fun anymore
5. I worry that something awful will happen to someone in my family
6. I am afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds)
7. I worry what other people think of me
8. I have trouble sleeping
9. I feel scared if I have to sleep on my own
10. I have problems with my appetite
11. I suddenly become dizzy or faint when there is no reason for this
12. I have to do some things over and over again (like washing my hands, cleaning or putting things in a certain order)
13. I have no energy for things
14. I suddenly start to tremble or shake when there is no reason for this
15. I cannot think clearly
16. I feel worthless
17. I have to think of special thoughts (like numbers or words) to stop bad things from happening
18. I think about death
19. I feel like I don't want to move
20. I worry that I will suddenly get a scared feeling when there is nothing to be afraid of
21. I am tired a lot
22. I feel afraid that I will make a fool of myself in front of people
23. I have to do some things in just the right way to stop bad things from happening
24. I feel restless
25. I worry that something bad will happen to me

Appendix E: Correlation Table

Table 3

Bivariate Correlation Coefficients between Total Scores

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Positive Emotions	-												
2. Negative Emotions	-.534**	-											
3. Positivity Ratio	.768**	-.853**	-										
4. Connectedness	.570**	-.362**	.421**	-									
5. Hostility	-.473**	.342**	-.450**	-.480**	-								
6. Anxiety	-.189	.248*	-.307**	-.277**	.352**	-							
7. Depression	-.465**	.347**	-.439**	-.393**	.390**	.648**	-						
8. Well-being M0	.505**	-.344**	.485**	.425**	-.324**	-.511**	-.717**	-					
9. Well-Being M1	.480**	-.293**	.409**	.461**	-.334**	-.506**	-.649**	.684**	-				
10. Well-Being M2	.377**	-.209	.325**	.327**	-.358**	-.375**	-.492**	.546**	.691**	-			
11. Well-Being M3	.431**	-.333**	.405**	.311**	-.376**	-.435**	-.514**	.654**	.669**	.538**	-		
12. Well-Being M4	.388**	-.226*	.340**	.250*	-.352**	-.369**	-.584**	.552**	.450**	.511**	.708**	-	
13. Well-Being M5	.361**	-.137	.242*	.225*	-.224*	-.403**	-.448**	.466**	.398**	.523**	.519**	.529**	-

Note. * $p < .05$, ** $p < .01$