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RISK AND RESILIENCE: INTERPERSONAL AND INTRAPERSONAL FACTORS
INFLUENCING ADOLESCENT PEER REJECTION AND DEPRESSION

by

Tyler Hicks

A Thesis Submitted in Partial Fulfillment
of the Requirements for a Degree with Honors
(Psychology)

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ABSTRACT

This study aimed to examine James C. Coyne's (1976) interpersonal theory of depression, which supposes that individuals with depression engage in aversive behaviors, causing those around them to reject the relationship in a group of adolescents aged 11-18 (N = 82). Data from the North Yarmouth Academy Peer Project, collected by Dr. Rebecca Schwartz-Mette was used to assess the effect of peer rejection on adolescent depressive symptoms. Participants were surveyed on a number of scales rating emotional adjustment, psychosocial function, internalizing problems, and friendship behaviors. Moderator variables, including three interpersonal behaviors (excessive reassurance-seeking, negative feedback-seeking, conversational self-focus) and one social-cognitive factor (rejection sensitivity) were tested for their effects on this interaction. To examine primary hypotheses regarding the trajectories of depressive symptoms, multiple linear regression analyses were used. Moderated regression analyses tested whether the trajectories were moderated by hypothesized moderator variables. Results of the current study indicated mean-level gender differences in depressive symptoms, mean-level grade group differences in depressive symptoms, correlational linkage with total friends to depressive symptoms, and correlational linkage of depressive symptoms to moderator variables. Results did not indicate significant main effects for the relationship of depressive symptoms with peer rejection.

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INTRODUCTION

Adolescence

Adolescence is a transitional period of human development that typically describes the second decade of a person's life, or the time between the onset of puberty and the age of legal adulthood (Laird, 2018). Because adolescence extends over a relatively long period of development, it is useful to divide this life stage into three parts: early adolescence, age 10-14, which includes the drastic physical and social changes which occur along with puberty; middle adolescence, age 15-17, which is a time of increasing independence for youth; and late adolescence, ages 18-20 which is afforded to those who delay their entry into adulthood for reasons such as furthering their education. Until more recently, the social construct of adolescence has been perceived as a strictly Western, or industrialized, social phenomenon. However, constructs of twenty-first century globalization have afforded a distinct period of adolescence across cultural boundaries, and, in those countries where adolescence has long been a specific recognized period of human development, these factors have created an even longer, more distinct transitional period (e.g., due to longer schooling, earlier puberty, later marriage, and removal from the full-time labor force; Larson & Wilson, 2013). Because of the cross-cultural recognition of the importance of adolescence, the empirical study of this developmental period has only increased over the past century.

The adolescent period is a time of change and growth, characterized by physical, cognitive, emotional, and social development occurring in conjunction. Although this stage of growth to some may reflect a turbulent, confusing, or bewildering transition, the

field of research into adolescent development has generally supported the notion that adolescence is not necessarily a period of disastrous ‘stress and storm’ in which clear behavioral irregularities for all youth should be expected (Steinberg & Morris, 2001). Most adolescents do move through this period and become well-adjusted and productive adults, suggesting this period is not quite as troublesome as popular culture might have us believe. However, though not as intense or extreme as its stereotype, on average, both mood swings and negative emotions, as well as risk for internalizing and externalizing behavioral problems, are observed to increase as children enter adolescence (Feldman & Elliott, 1990).

It follows, then, that adolescence is known to be a period during which several classes of mental illness tend to begin to reveal themselves. Among these include anxiety disorders, mood disorders, psychosis, eating disorders, personality disorders, and substance abuse (Giedd, Keshavan & Paus, 2008). Why risk for developing these disorders increasingly manifests in adolescence is the concern of much recent literature. Not surprisingly, the answer appears to lie within a balance of environmental and biological risk factors (Kim-Cohen, Moffitt, Taylor, Pawlby, & Caspi, 2005; Wermter, Laucht, Schimmelmann, Banaschweski, Sonuga-Barke, Rietschel, & Becker 2010). The emergence of psychiatric disorders in adolescence is not assumed to be a strictly biologically predictable outcome. For example, it is not the case that hormonal changes, such as increases in testosterone, uniformly lead to problematic behavioral changes, such as increases in aggression. In one twin study, genetic factors were found to account for 40.4% of the variance in risk for depression, with individual environmental differences accounting for the remaining 59.6% (Glowinski., Madden, Bucholz, Lynskey, & Heath,

2003). Rather than be conceptualized as strictly biologically determined, psychiatric disorders should rather be viewed contextually, with more understanding of the influence from the adolescent's changing social environment on this sensitive period of development (Andersen & Teicher, 2008).

From a social perspective of the nature versus nurture debate, it is understood that environmental risk factors linked with disorder onset do not occur in isolation, and that they are often interrelated with adolescents' changing social scene. Indeed, the implications of adolescents' social landscape of adolescents for emotional adjustment has been the focus of much attention in recent decades. Peer relationships are one specific component that appears to have strong linkages with emotional outcomes in this period. According to Masten and colleagues (2009), adolescence is a period of greatly increased salience of peer relationships and a time of increasing social support from the peer group.

The burgeoning importance of relationships with peers in adolescence has been well established. As a child transitions into the middle school years, it is common for them to be more heavily influenced by their peers than they were previously in childhood (Steinberg & Silverberg, 1986). Along this trend, it is common to spend more time in settings alone with peers, place greater value on peers' approval, advice and opinions, and be more concerned about maintaining relationships with peers (Steinberg & Silverberg, 1986). This tendency is generally highest during early adolescence and gradually decreases as adolescents renegotiate their relationship with parents and gain a better understanding of themselves as they begin to enter adulthood (Fuligni, Eccles, Barber, & Clements, 2001). Peer relationships in adolescence have amassed a large portion of the overall attention given to studying adolescent social and emotional

development. As such, peers have been implicated as contributors to healthy, normative development but also problematic functioning (Brown & Larson, 2009). A more comprehensive discussion of the importance of peer relationships to social and emotional development in adolescence is provided in the following section.

The Centrality Of Peer Relationships In Adolescence

The field of study of adolescent peer relations spans beyond the last half-century and, from an early start, has emphasized the key importance of acceptance by the peer group and intimacy within friendships during the adolescent phase (Smith, 1957; Sullivan, 1953). As adolescents navigate their changing social scenes, the establishment and maintenance of healthy relationships with peers becomes increasingly important to promote a sense of emotional well-being and form their social identity (Sullivan, 1953). In early childhood, one's social needs and general companionship are most often sought from and met by caretakers, such as parents and guardians. However by adolescence, these social functions are increasingly provided by one's peers (Buhrmester & Furman, 1987). Therefore, adolescents' rising drive to seek acceptance and intimacy from their peers coincides with an increased salience of peer relations during this period, the impact of which is a worthwhile and exciting field of study.

Peer group acceptance is principally important to healthy socialization and developmental outcomes for youth (Bukowski, Hoza, & Boivin, 1993). As children transition into early adolescence, the social structure within which they engage one another changes to promote the more intimate style of connections with others that are observed throughout later years in life. Sullivan (1953) describes peer relationships in adolescence as the first true egalitarian relationships of these young people's lives,

offering them experiences which could not be found in their relationships with parents. Among these new experiences is the prospect of finding validation and acceptance with others like themselves, and conversely, rejection and disapproval, the differentiation therein having emotional consequences on the adjustment of the individual.

In childhood, the need for group acceptance is principally important to natural, healthy development and understanding the social norms of behavior amongst peers, and this trend continues on into and has broad implications for peer relationships in adolescence (Nangle, Erdley, Newman, Mason, & Carpenter, 2003). Regarding the peer group, adolescents' general peer group functioning, which would include perceptions of the youth by the general peer group, are central to youths' development. Sociometric or peer nominations (including friendship nominations) are a common method by which the perceptions of any given youth by the general peer group are assessed.

There are several considerations to be taken when researchers use sociometric nominations as a measure of peer group functioning. First, this rating scheme can take advantage of a more general questioning, such as, "Who do you like the most?", "Who do you like the least?", "Who is most popular among your classmates?" and "Who has the most friends?" Conversely a more contextualized questioning could be used such as "Who kicks or hits other kids?" or "Who do you usually sit with on the bus?" Discrepancies in the administering of such measures therefore can affect the decisions made by youth in nominating their peers (Poulin & Dishion, 2008). Second, researchers must decide whether or not to limit the number of nominations that each participant may give. An unlimited amount of nominations (i.e., placing no limit on the number of peers a youth can nominate in a given category) has been shown to produce a more reliable

measure of peer status, while a limited amount of nominations is believed to provide a clearer identification of close friendships or other outcomes (Terry, 2000). A third consideration is the method in which subjects are asked to provide their responses, either in free-recall or from a full list. In free-recall, having to write out the names of one's peers considered to be friends can limit the total number of nominations given while suggesting a stronger relationship between the youth and those recalled, lowering the potential for a nomination to be given over-generously. Choosing from an alphabetized list of one's peers, on the other hand, is easier and more time efficient for participants, but this method can produce response bias, especially with large populations where it would be necessary to scour a long list. For example, a participant could be nominated more often by peers simply because his or her name is at the top of the list.

As previously suggested, sociometric nominations can be used to assess multiple dimensions of peer group functioning. Peer group functioning has been studied often through the constructs of peer acceptance, popularity, and number of friendship nominations received by other youth. While these constructs aimed primarily at determining social status bear similarities, they also carry certain distinctions. These differentiations are not without contention in the field, and the following sections outline existing definitions of the constructs and clarification of constructs as they pertain to the current study.

Peer acceptance has been operationalized in past research as an index of likeability derived from the scores of one's peers in assessing who among their classmates they like the most (Coie & Dodge, 1983). In research, this would take form by asking youth to select, from a list of peers, "Who do *you* like the most?", the focus being

on the social experience and perspective of the responder but also on the number of nominations each youth receives from their peers as an index of acceptance. Peer acceptance was later distinguished from the construct of perceived popularity, which in past research has been operationalized as a shared understanding among peers as to who has attained social prestige, or high social status (Adler, Kless, & Adler, 1992).

Methodologically, popularity can also be assessed through sociometric nominations, where subjects are elicited to choose from a list of peers those whom they consider to be popular (Brown & Larson, 2009). Popularity is distinct from peer acceptance, for instance, in that an individual may be perceived to be popular, or of high prestige by his or her peers, but may not be particularly well-liked or accepted by many. Due to this distinction, the way which researchers conceptualize one's perceptions by his or her peers becomes important to investigating broader peer relationships and peer group functioning.

Substantial evidence shows that forming a large social network early helps to afford a child more opportunities for establishing friendships (Nangle et al., 2003). This would suggest that greater peer acceptance through childhood and into adolescence may be critical for formation of the dyadic friendships which fulfill important roles in adolescence such as the aforementioned drive for intimacy and self-disclosure. Dyadic friendships, an important dimension of adolescent peer group functioning, are distinct from peer acceptance and popularity, and are defined as "a bilateral construct referring to a child's participation in a close, mutual, dyadic relationship" (Nangle et al, 2003 p. 546). In selecting friends, romantic partners, or friendship groups, young people grow more sensitive to the ramifications of a specific relationship for their status or reputation within

the broader peer system (Brown & Larson, 2009). As a result, peer acceptance, popularity, and friendship can be understood as reciprocally influencing factors.

Relatedly, researchers have also been interested in the number of friends a youth has as another index of peer group functioning. Number of friends also can be assessed using sociometric nominations by simply asking youth to identify who their friends are (Brown & Larson, 2009). These friendship nominations can be limited or unlimited in number. Of note is that friendship nominations can then be used to pair youth into reciprocal friendship dyads at varying levels of closeness (best friends, close friends, etc.). The focus of the current study is use of friendship nominations to identify the total number of peers who identify any given youth as a friend. Specifically, number of friends was assessed as the total number of friendship nominations he or she received by same-grade peers who answered the question, "Please select up to 5 of your friends you spend the most time with from this list of students."

The negative outcomes associated with poor adolescent peer relationship functioning have been the subject of much recent literature. Be it that positive peer relationships in adolescence are beneficial to normative development and positive mental health adjustment, a large amount of research attention has been placed on the negative mental health outcomes of deficient, or negative peer relationships. Lack of acceptance among peers makes a distinct impact on the self-esteem and perceived well-being of rejected youth, and both externalizing problems and internalizing problems have been associated with peer rejection in adolescence. More specifically, Parker and Asher (1987) review that children who experience less group acceptance later have increased risk of poor personal adjustment, including greater propensity to drop out of high school.

Interestingly, Nangle and colleagues (2003) suggest that feelings of loneliness and social dissatisfaction are buffered by greater size and quality of a friendship network of popular children. It is thought that lack of acceptance and/or rejection by peers may confer risk for negative outcomes because these constructs offers direct feedback for adolescents' sense of worth and their self-concept.

Depressive symptoms have been one negative outcome researched with regard to poor peer functioning. Lower levels of closeness with a best friend, less contact with friends, and more experiences of peer rejection are shown to contribute to increases over time in depressive affect (Vernberg, 1990). Prinstein and Aikins (2004) also provide evidence that, among adolescents who advocate placing high importance on peer acceptance, rejection over a 17-month span was predictive of an increase in depressive symptoms. Across the literature, there is evidence for the notion that peer rejection in adolescence is detrimental to normative development. The current study focuses itself on symptoms of depression as a specific unfavorable outcome of experiences of peer rejection.

Depression in Adolescence

Adolescence is an important developmental period in which researchers attempt to understand the nature, course, and treatment of depression. The wholly inaccurate lay view of adolescence as a period which is meant to be endured, with mental health obstacles around every corner, may unfortunately have contributed to under-treatment of symptoms due to the belief that adolescents would grow out of their condition (Petersen, Compas, Brooks-Gunn, Stemmler, Ey, & Grant, 1993). What is more, research into the population of youth that does show behavioral issues in adolescence finds that these

individuals frequently develop depression in adulthood, suggesting that these difficulties are not necessarily normal adolescent manifestations (Petersen et al., 1993).

Petersen and colleagues (1993) make the distinction of how we classify depression in adolescence based on severity. They include three classifications of observable, obtrusive depression problems in adolescence: depressed mood, depressive syndromes, and clinical depression. Depressed mood is the least severe of these classifications and refers to the regularly-occurring negative feelings associated with difficult or unhappy situations such as the termination of a relationship, loss of a loved one, or termination of employment, for example. Depressed mood is generally temporary and mild but may also be connected with other problems such as anxiety, or other negative feelings such as regret or guilt. Depressive syndromes refer to the “constellation of behaviors and emotions that have been found statistically to occur together in an interpretable pattern at a rate that exceeds chance, without implying any particular model for the nature or cause of these associated symptoms” (Petersen et al., 1993, p.156). Positive correlations have been observed between the presence of depressive syndromes and other social and/or behavioral concerns including social withdrawal and destructive behavior, for example. Clinical depression often refers to diagnosis of a depressive disorder, such as Major Depressive Disorder (MDD). MDD is the definitive, identifiable impairment in daily functioning caused by at least five of nine recognized symptoms (APA, 2013).

These include:

1. Depressed mood (in adolescents this may include irritable mood.)
2. Diminished interest or pleasure in most activities day to day
3. Significant, unintentional weight loss or weight gain
4. Insomnia or hypersomnia
5. Psychomotor agitation or retardation
6. Fatigue or loss of energy
7. Feelings of worthlessness or excessive guilt
8. Diminished ability to think or concentrate, and
9. Recurrent thoughts of death, dying or suicide

Other mood disturbances involving depressed affect and/or symptoms of depression are observable in those suffering from related mood disorders, such as Persistent Depressive Disorder (APA, 2013). The severity and classifications of depression for each individual determines the type of interventions necessary, whether a health professional is needed for counseling, and whether an individual is needed to take medications to mediate their symptoms.

The prevalence of adolescent depressive symptoms and syndromes is significant, and rates of major depressive episodes (MDE), defined as a period of depressed mood lasting two weeks or more, among adolescents are above global averages for other ages (NIMH, n.d.). Each year almost 1 in 11 adolescents and young adults have an MDE, and the prevalence of these episodes increased between 2005 and 2014 (Mojtabai, Olfson, & Han, 2016). According to the National Institute of Mental Health (NIMH), an estimated 3.1 million adolescents aged 12 to 17 in the United States had at least one MDE during the last twelve months (NIMH, n.d.). This number represented 12.8% of the U.S. population aged 12 to 17. The prevalence of major depressive episodes was higher among adolescent females (19.4%) compared to males (6.4%) (NIMH, n.d.). What is also clearly observed from lifetime prevalences of depressive disorders is that there is a sharp incline

in rates beginning in early adolescence, and rates escalate throughout the teen years, with 5% of 12 year olds and 17% of 17 year olds having documented depressive disorders (NIMH, n.d.).

Many factors could explain the recorded post-pubertal rise in prevalence. As stated, adolescence is a developmental period characterized by pronounced biological and social changes. The most commonly hypothesized contributors to the development of depression symptoms in adolescence are puberty, which incorporates both physical and social changes, and brain and cognitive maturation (Giedd, Keshavan, & Paus, 2008). This includes enhanced social understanding and self-awareness and increased reported stress levels, especially in girls (Thapar, Collishaw, Pine, & Thapar, 2012). From a social perspective, this then implies that adolescents may become increasingly at risk for depression at least in part due to negative assessments of themselves, which as has been discussed, are in large part derived from one's relationships with peers. Therefore, understanding the roles peer relationships have in the underlying mechanisms for the development of depression in adolescence has been an important part of developmental psychological research.

As stated earlier, rejection by one's peers during adolescence has been shown to increase levels of depressed affect (Parker and Asher, 1987; Prinstein and Aikins, 2004; Vernberg, 1990). Tragically, the inverse of this has been shown also. That is, those with elevated depressive symptoms are often rejected by their peers (Coyne, 1976).

Coyne's *Toward an Interactional Description of Depression* (1976) was among the first works to explore the idea that aversive patterns of depressed behaviors negatively affect the people in the environment of the depressed individual. Coyne writes

that “what is customarily viewed as some internal process is, I believe, at least in part a characteristic of interaction with the environment, and what is customarily viewed as cognitive distortion or misperception is characteristic of information flow from the environment” (p. 29). This idea reflected different thinking of previous understanding which would have assumed that suffering from depression is like being blocked off from the outside world, left to one’s own despair. Coyne’s theorized interpersonal dynamics of depression are self-propagating. The person with depression elicits negative feelings in those in their environment through displayed aversive behaviors, and these people then reject the depressed individual to avoid these negative feelings, leaving the depressed individual without the social support necessary to adjust their depression. This then results in increased symptoms of depression, and the cycle continues.

Coyne goes on in some detail about the interpersonal behaviors used by “the depressive,” as he calls them. First, and most importantly, the depressed individual engages in behavior that aims to test the viability of his or her acceptance by others and the security of these relationships. The depressive seeks reassurance from others that they still find their relationship tolerable. The problem is that the depressed individual will then doubt the sincerity of any reassurance given, due to low self-worth and self-esteem, and will have to then engage in the same action of excessive reassurance seeking (ERS), to the point that those in the relationship with this person will become irritated or impatient with the depressed individual. Coyne put it this way in his original work, “essentially the depressed person finds himself in the awkward situation of wanting to avoid rejection, yet at the same time fearing acceptance” (p. 35, 1976). Rarely, Coyne suggests, does this result in outward lashes by the people close to the afflicted person.

Instead, others will persist through the aversive excessive reassurance seeking (ERS) behaviors of their depressed companion until the relationship can no longer be tolerated, at which point the depressed person will be rejected and the depressed individuals' symptoms are exacerbated by this loss of social support.

Self-verification theory (Swann, 1983) suggests that in an attempt to maintain clear and consistent views of the self, people strive to verify their identity through those around them by means of soliciting feedback which confirms their self-concept. Negative feedback seeking (NFS) is one interpersonal behavior observed among depressed people which fits into the self-verification theory. Swann, Wenzlaff, & Tafarodi (1992) examined the propensity to engage in NSF in a population of college undergrads. The authors found that not only do depressed individuals more often prefer an evaluator which measures them unfavorably, but that they will also be more likely to ask for negative feedback when there is an option to receive positive or negative feedback. This process of self-verification when operated by depressed individuals is counterproductive to remediating depressive symptoms, and further removes the depressed individual from their social relationships.

Further maladaptive interpersonal behaviors of those with depression have been introduced in recent years, including the construct of conversational self-focus (CSF). CSF, according to Schwartz-Mette & Rose (2009) "is defined as the tendency of one person to redirect conversations toward the self and away from others" (p. 1263). It is important to note that this dominance of an interaction is not the same as normal, healthy self-disclosure in a relationship, as it is neither reciprocal nor elicited by those around the depressed individual. Especially when focused exclusively on negative content, such as

one's own problems, Schwartz-Mette & Rose demonstrated that this sort of self-focusing behavior may not only be associated with depressive symptoms but also may be damaging to friendships (2009). In a second study, Schwartz-Mette & Rose (2016) found that those depressed adolescents who engaged in CSF were reliably rejected by their close friends over time.

As Coyne states, "it should be made clear that [the interpersonal behavior] perspective does not deny the existence of important intrapersonal factors in depression" (p.29). Indeed, when not compiled with social-cognitive variables, these interpersonal behaviors may not manifest. Such social-cognitive factors include rejection sensitivity (RS), which is a cognitive bias to perceive and expect rejection from those close to oneself without what would normally be considered just cause (London, Downey, Bonic, & Paltin, 2007). Drawing on both attachment and attributional frameworks, the RS model supposes that experiences of rejection can sensitize an individual to the negative feelings associated with rejection and sharpen the reflexes which lead to these negative feelings in situations where rejection is possible (London, et al., 2007). The defensive reaction associated with RS in adolescents is generally either aggressive or anxious, and regardless of the type of reaction, increased feelings of loneliness have been predicted for youth who experienced RS (London, Downey, Bonic, & Paltin, 2007). This is not surprising, given that experiencing, or even perceiving, rejection from peers when an opportunity for intimacy exists would be a stressful and negative outcome. In one recent study among a group of adolescents with multiple relationship stressors, the development of depression was moderated by RS (Chango, McElhaney, Allen, Schad, & Marston, 2012). Importantly, this study demonstrated that several social/relationship stressors

which are individually only moderately predictive of development of depression were much more strongly correlated with depressive symptoms in adolescents with high RS.

Taken together, Coyne's original theory and more contemporary understanding of maladaptive, depression-related interpersonal behaviors indeed suggest a depression-rejection cycle, with the end result being worsening depressive symptoms. This depression-rejection pathway is one potential trajectory examined in the current study. What has received far less attention in research and is thus less well understood is if, and how, those affected by symptoms of depression can sustain their relationships with others, and even relieve their depressive symptoms. Especially during the important developmental period of adolescence, understanding the effects that maladaptive interpersonal behaviors have on relationship trajectories is paramount. This is an additional primary endeavor of the current research.

Relevant Gender Differences

To further understand the implications of adolescent peer relationship functioning for emotional adjustment, researchers have worked to elucidate potential gender differences that may be present in the relationship styles and emotional adjustment of boys and girls. Many gender differences have been consistently documented, beginning very early in youths' development (Rose & Rudolph, 2006). Gender differences in the structure of peer groups, the types of interactions amongst peers, and the frequency of group engagement contribute to this distinction. Deciphering the potential implications which may exist for this pattern of differences has been a meaningful scientific endeavor in the study of peer relations. Major gender differences in peer relations and emotional adjustment as they pertain to the current study will be briefly described here. For a more

complete examination, of gender differences in peer experiences see Rose & Rudolph, 2006.

Possibly one of the more robust findings related to gender is that of homophily, which is the general propensity for both boys and girls to interact with similar peers. In accordance with the homophily hypothesis, boys and girls tend to interact with same-gender peers more often than opposite-gender peers, and this finding has been successfully replicated in numerous studies (Bukowski, Gauze, Hoza, & Newcomb, 1993; Kovacs, Parker, & Hoffman, 1996; Maccoby & Jacklin, 1987). The term homophily could be used to refer to other means of determining likeness, such as shared interests or hobbies, or engagement in extracurricular activities, or any other means by which groups hold a shared sense of similarity, but it certainly corresponds strongly with gender differences.

Observable beyond the propensity to interact more with similar as opposed to different peers are important gender differences which exist with regard to a variety of social and emotional variables. Gender differences in peer behaviors are minimally present in early childhood but begin to emerge more drastically in the elementary school years and are at their strongest at the time of transition into adolescence. For instance, Maccoby (1990) found that boys and girls in middle school can be contrasted by play styles, leisure-time activities, group strength and power, and total number of friendships. Among these contrasts, boys are observed in large groups, taking up larger spaces during play in comparison to girls, who tend to prefer small groups, or parallel play, a type of interaction where children play side-by-side but without attempting to influence each

other's activities. Further, boys are more likely to engage in structured, organized play such as sports or games with rules (Moller, Hymel, & Rubin 1992).

Another structural difference between boys' and girls' relationship styles involves social network density. Parker and Seal (1996) found in a population of middle schoolers attending a sleep-away summer camp that over time boys had greater success in integrating friend groups than girls did. In other words, over time, friends of boys were more likely to become friends with one another. This has strong implications for aforementioned benefits of popularity in childhood when attempting to successfully secure close friendships later in adolescence.

Boys also engage more often in rough-and-tumble play with peers than do girls. Boys' overt-aggression style of interaction has been suggested to afford them the opportunities necessary to establish stable social hierarchies based on shows of strength, and this may have implications for boy's self-image in the context of social power (Savin-Williams, 1979). Savin-Williams (1979) found that whereas boys were likely to assert social dominance through physical means, girls were more likely to ignore group members, effectively shunning them. It can be said that during childhood, boys will seek to self-promote to climb social ranks, while girls will relegate others.

Whereas boys are observed more often than girls engaging in large group interactions, girls' interactions with peers tend to involve extended dyadic involvement. Though boys may interact in dyads as frequently as girls do, a key difference lies with the duration of these interactions, as girls' dyadic interactions have been recorded to last significantly longer than boys' (Benenson, Apostoleris, & Parnass, 1997). Interestingly, girls spend more of their time in social conversation than boys, most likely in part due to

this difference of duration of interaction at the dyad (Moller, Hymel, & Rubin 1992). Self-report studies with youth in the sixth grade and older also consistently find medium and large significant effects indicating that girls report more self-disclosure in friendships than do boys (Buhrmester & Furman, 1987). Girls have also been shown to strive for intimacy and mutual dependence with friends and respond more severely to social anxiety and social exclusion on scales meant to measure such constructs (La Greca & Lopez, 1998). Elevated levels of social anxiety were in turn linked to poorer social function in both boys and girls, as seen by both number of close friendships as well as general peer acceptance.

Although gender differences were not originally incorporated into Coyne's model, there is reason to believe that the effects of the aforementioned maladaptive interpersonal behaviors may be stronger for either girls or boys. Gender differences in Coyne's (1976a) primarily postulated maladaptive interpersonal behavior, ERS, have been found to be relatively consistent across studies (Starr & Davila, 2008). In one meta-analytical study assessing findings on ERS as moderated by gender, studies with higher percentages of female participants found greater association linking ERS to worsened depressive symptoms, implying a potentially stronger sensitivity to ERS in the development of depression in women (Starr & Davila, 2008). In studies focusing on NFS, it is not usually the case that there is a gender difference found in the frequency of this behavior. However, Borelli and Prinstein (2006) did find that NFS uniquely contributes to the development of depression in girls. In particular, their results showed significant effect of NFS on depression among girls, but not boys, when controlling for adolescent's symptoms of social-anxiety and low self-esteem (Borelli and Prinstein 2006).

Interconnected with both girls' play style of quieter, dyadic activities as well as communication behaviors, girls may be more likely to engage in CSF than boys, if for no other reason than simply from the time spent in conversation. This was the case for Schwartz-Mette & Rose (2016), who, in a study of same-gender adolescent friendships found that girls reported engaging in CSF more often than boys. Interestingly, however, in this study girls also rated their friendship quality higher than boys did even in the presence of greater CSF, indicating that higher levels of intimate self-disclosure in the form of CSF may not be detrimental to the relationship, at least for girls. In an earlier study, Schwartz-Mette & Rose (2009) also state that "gender differences favoring girls also were observed for the subscales of conflict resolution, intimate exchange, and validation and caring" (p. 1272). Girls' greater social communication skills may therefore be at play when examining CSF, such that positive relationships are those in which talking about one's problems is not only an acceptable activity, but also a source of affectionate bonding.

Finally, in one study, RS was more strongly associated with women's than with men's pessimism about the course and outcome of conflicts with romantic partners (Downey, Khouri, & Feldman, 1997). Specifically, RS was a stronger predictor of concern about rejection during conflict, and of feeling lonely and unloved after conflict, in women than in men. Given girls' greater concern over social relationships, (Rose & Rudolph, 2006) it may be that girls report higher levels of RS.

What is relatively clear in the evaluation of gender differences in youth's peer relations is that girls appear to be at somewhat of a disadvantage with regard to negative outcomes of peer experiences. The negative emotional developmental outcomes

associated with poor social adjustment congruent with social well-being seem to target girls over boys in these findings. La Greca and Lopez (1996) put it very well in the discussion of their findings, “These results are troubling, as they suggest that social anxiety may interfere substantially with girls' close interpersonal relationships. Intimacy and emotional support from close friends are salient features of adolescent girls' friendships, as our findings [and others'] have indicated; thus, factors that interfere with the development of close, intimate friendships-such as feelings of social anxiety-may have a greater negative impact on girls than on boys” (pg. 93). In combination with elevated levels of self-disclosure and need for intimate reassurance, less robust development of large friend groups, and greater perceived anxiety dealing with rejection, girls are understood to be at a greater risk for the development of depression within the context of social rejection. Indeed, this is what the epidemiologic data on depression demonstrates. In 2016, adolescent girls were more than three times as likely as adolescent boys to suffer from a major depressive episode (NIMH, n.d.). The current study explores gender differences with regard to adolescents' number of friends, depressive symptoms, and depression-related interpersonal variables including excessive reassurance seeking (ERS), negative feedback seeking (NFS), conversational self-focus (CFS), and rejection sensitivity (RS).

The Current Study

The present study examined the interplay of depressive symptoms, rejection by friends (as indexed by loss of friendship nominations over time), and depression-related interpersonal behaviors in a sample of adolescent males and females at a private, preparatory middle and upper school. This study was aimed towards extending our

understanding of the general impact of levels of depression on adolescent peer relationships. Specifically, the current study aims to examine the trajectory of depressive symptoms in the context of adolescent peer relations and how this trajectory may be moderated by the maladaptive interpersonal behaviors and social-cognitive state (ERS, NFS, CSF, RS) of the depressed youth. Inspired by the work of Coyne's interpersonal theory (1976), this research is meant to extend current understandings of these behaviors within an adolescent population. Further, this research endeavors to add to our knowledge on the importance of peer acceptance to the development of depression.

The current work supposes two trajectories. First, greater initial depressive symptoms were expected to result in increased peer rejection over the course of the study, as operationalized by a decrease in the number of friendship nominations received by peers. This rejection-trajectory is expected to be further moderated by higher levels of depression-related interpersonal and social-cognitive variables including ERS, NFS, CSF and RS. A second, resilience-trajectory will also be examined. Specifically, it is hypothesized that adolescents' depressive symptoms would decrease under conditions of having higher numbers of peer-nominated friendships. Further, potential gender differences in each of these trajectories will be explored. It is expected, given the literature reviewed, that females within the target population will have greater overall scores of depressive symptoms than their male counterparts, and will engage more often in the potential aversive relational behaviors described, and show higher distress to peer rejection.

METHOD

Participants

Participants were students from the middle school ($n = 29$) and upper school ($n = 53$) of a private, preparatory academy in southern Maine (grades 5-12; total $N = 82$; 46% female). Of the 207 students between both schools, 117 were consenting participants (56.52%). This was equivalent to 39 consenting/72 total middle school students (54.17%), and 78 consenting/135 total upper school students (57.78%). The age of participants ranged from 11 to 18 years of age ($M = 14.8$ years old, $SD = 2.05$). The self-reported racial/ethnic group distribution of the sample is reflective of the state of Maine: 4% Hispanic ($n = 3$), 4% American Indian/Alaskan Native ($n = 3$), 6% Asian ($n = 5$), 0% Hawaiian/Pacific Islander ($n = 0$), 1% Black ($n = 1$), 96% White ($n = 79$). These counts total greater than 100%, as some participants self-identified as more than one race.

Procedure

This study was reviewed and approved by the University of Maine Institutional Review Board. Prior to participation in the study, written parental consent was obtained for each youth participant. Child assent was obtained at the time of participation, and each participant was notified that they could terminate their participation in the study at any point of time. All data collection took place online during student's free time. Specifically, each participant was provided with a link to online questionnaires and a secure log-in ID so that they and they alone could access their individual questionnaire for a period of up to one week after the survey was initially opened.

Participants completed two identical surveys spaced approximately six weeks apart. A third assessment was a part of the larger research project but is not of centrality to the current study. The surveys included multiple self-report questionnaires assessing participants' emotional adjustment, friendship functioning, and interpersonal behavior. Participation in the study itself did not pose specific identifiable risks to participants beyond what distress could be expected from daily life (e.g., reflecting on one's own emotional adjustment or friendships). Given that participants were reporting on emotional adjustment outcomes such as depressive symptoms, a clear plan was outlined for identifying those participants with significantly elevated symptoms. Specifically, the names of those participants who reported depressive symptoms above the recognized limit for clinical adolescent depression scores (CES-D sum score of 19 or greater) were distributed to selected NYA staff (school social worker, head of school) within 24 hours of data collection. The school social worker then directly contacted the student and their parent(s)/guardian(s) and provided additional resources for support. The primary investigator of the project, a licensed psychologist, worked closely with school staff to provide resource and referral information for each identified case.

Each participant was compensated for their time with a \$10 Amazon gift card for each survey they completed. Participants who completed each of the assessments for the larger project were entered into a drawing for a chance to win a pair of Beats® Headphones. Participants who withdrew from the study at any point, were compensated for each portion of the project they completed.

Measures

Because the current study is derivative of a larger research project, not all of the measures utilized will be described here. Of interest to the current study are the measures used to assess depressive symptoms, excessive reassurance-seeking (ERS), negative feedback seeking (NFS), conversational self-focus (CFS), and rejection sensitivity (RS), as well as peer sociometric nominations.

Depressive symptoms. To assess current symptoms of depression, participants completed the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). It consists of 20 items aimed to assess the presence and severity of depressive symptoms over the past two weeks. Each item is rated on a 0-4 Likert scale including the following response options: “Not at all or less than one day last week” (0), “One or two days last week” (1), “Three to four days last week” (2), “Five to seven days last week” (3), and “Nearly every day for two weeks” (4). A score was created for each participant by summing all item responses. Sum scores 19 or greater indicate clinically significant depressive symptoms in adolescence. Internal consistency of the CES-D was high at both time points (Time 1 $\alpha = .90$; Time 2 $\alpha = .90$).

Excessive Reassurance-Seeking (ERS). ERS was assessed through participant answers to four questions about their own general tendency to engage in ERS with friends and family members. Items were adapted for use in this study from the Depressive Interpersonal Relationships Inventory (Metalsky et al., 1999). Each item was rated on a 5-point Likert scale ranging from “Not at all true” (1) to “Always true” (5). An example item is, “I always need to ask my parents and friends if they like me.” An

average ERS score was computed for each participant reflecting the mean of all items. Internal consistency of the ERS scale was good ($\alpha = .80$).

Negative Feedback-Seeking (NFS). Participants' NFS scores were derived from answers to questions from the Feedback Seeking Questionnaire (Swann, Wenzlaff, Krull, & Pelham, 1992) as modified by Joiner, Katz, and Lew (1997) for use with adolescent samples. The questionnaire assesses tendencies to seek negative feedback in five areas of self-worth including social competency, academic skills, athletic skills, creative skills, and physical attractiveness. There are six questions dedicated to each of these domains, three of which are coded negatively (e.g., "Why do you think other people would find me unattractive?"), and three positively (e.g., "What academic subjects would you expect me to be especially good at? Why?") Participants could select up to three positive or three negative areas of feedback (or some combination of positive and negative therein) they wished to seek from their friends. Participants received an NFS score reflecting the total number of pieces of negative feedback they reported wishing to receive from friends. The internal consistency of the NFS negative feedback items was good ($\alpha = .86$).

Conversational Self-Focus. Participants rated six items which assess their own tendencies to self-focus during conversation (Schwartz-Mette & Rose, 2004). Each item was rated on a 1-5 scale ranging from "Not at all true" (1) to "Always true" (5). An example item is, "When my friend tells me about a problem, I often interrupt to tell her about my own problem." Internal consistency of the self-focus items was good ($\alpha = .81$).

Rejection Sensitivity. Participants rated 12 items of the Children's Rejection Sensitivity Questionnaire (Ayduk et al., 2000). The questionnaire includes six scenarios presenting a situation in which youth may perceive rejection. An example scenario is

“Imagine you had a really bad fight the other day with a friend. Now you have a serious problem and you wish you had your friend to talk to. You decide to wait for your friend after class and talk with your friend. You wonder if your friend will want to talk to you.” Two items follow each scenario and assess the degree to which they would be nervous (six items total, one item per scenario) or mad (six items total, one item per scenario) in response to experiencing the situation. An example item to accompany the example scenario is, “How NERVOUS would you feel RIGHT THEN, about whether or not your friend will want to talk to you and listen to your problem?” Each item is rated on a 1-6 Likert scale ranging from “Not nervous” (1) to “Very, very nervous” (6). An average rejection sensitivity score for each participant was created by taking the mean of the 12 items. Internal consistency of the rejection sensitivity items was acceptable ($\alpha = .72$).

Sociometric Nominations: Number of Friendships. Participants were given an alphabetized list of all of the students in their respective schools (i.e. upper school students could nominate fellow upper school students; middle school students could nominate fellow middle school students). They were invited to complete a limited friendship nominations procedure in which they could choose up to five of their friends with whom they spend the most time.

Data Analytic Plan

Planned analyses included calculating frequencies, means, and standard deviations for all demographic and primary variables of interest. To address mean-level gender and grade group differences, t-tests were used. To examine primary hypotheses regarding the depression-rejection trajectory and the resilience trajectory, multiple linear regression analyses were used. Moderated regression analyses tested whether the

trajectories were moderated by hypothesized moderator variables and whether any of the relations of interest were further moderated by gender. All analyses were conducted using SPSS, Version 24.0.

RESULTS

Descriptive Statistics

Means and standard deviations were calculated for all study variables. These descriptive statistics are presented in Table 1. The possible range for friendship nominations was determined by the total number of youth who provided friendship nominations data at Time 1 (middle school $n = 29$, upper school $n = 52$) and Time 2 (middle school $n = 22$, upper school $n = 35$). The observed range of friendship nominations each youth received at Time 1 was 0 to 5 nominations ($M = 1.33$, $SD = 1.36$) and was 0 to 7 at Time 2 ($M = 2.26$, $SD = 1.47$). Change in friendship nominations over time also was calculated by obtaining the difference between nominations received at Time 1 and Time 2, with positive numbers reflecting nominations gained and negative numbers reflecting nominations lost. On average, youth gained almost one nomination over time ($M = 0.93$, $SD = 1.83$). The observed range for depressive scores at Time 1 was 0 to 40 ($M = 9.36$, $SD = 8.74$), and at Time 2 was 0 to 37 ($M = 8.22$, $SD = 8.90$). Participants reported relatively low Time 1 levels of conversational self-focus ($M = 1.27$, $SD = .49$), excessive reassurance-seeking ($M = .09$, $SD = 0.27$), negative feedback-seeking ($M = 4.91$, $SD = 3.99$), and rejection sensitivity ($M = 2.10$, $SD = 0.62$). Descriptive statistics are presented in Table 1.

Mean-Level Gender Group Differences

Mean-level gender differences in all study variables were examined using t-tests. Significant mean-level gender differences were found for CES-D scores at Time 1 (girls $M = 11.94$, $SD = 9.02$; boys $M = 7.14$, $SD = 7.93$), but this gender difference was no

longer significant by Time 2. Girls also reported higher levels of excessive reassurance-seeking (girls $M = 0.15$, $SD = 0.35$; boys $M = 0.03$, $SD = 0.14$). Girls reported slightly higher levels of rejection sensitivity, but this difference was not statistically significant (girls $M = 2.23$, $SD = 0.57$; boys $M = 1.99$, $SD = 0.64$). No significant gender differences were found for conversational self-focus, negative feedback-seeking, or number of friendship nominations received or gained. Table 2 presents means of all study variables by gender as well as results of mean-level gender difference t-tests. Results are presented in Table 2.

Mean-Level Grade Group Differences

Mean-level grade group differences in all study variables were examined using t-tests. Significant mean-level grade group differences were found for number of friendship nominations at Time 1 (middle school $M = 2.62$, $SD = 1.29$; upper school $M = 0.62$, $SD = 0.72$), change in number of friendship nominations (middle school $M = -0.52$, $SD = 1.24$; upper school $M = 1.73$, $SD = 1.68$), CES-D at Time 1 (middle school $M = 6.65$, $SD = 7.34$; upper school $M = 10.85$, $SD = 9.15$), and negative feedback-seeking (middle school $M = 2.84$, $SD = 3.15$; upper school $M = 6.02$, $SD = 3.99$). No significant grade group differences were found for CES-D at Time 2, conversational self-focus, excessive reassurance-seeking or rejection sensitivity. Table 3 presents means of all study variables by grade group as well as results of mean-level grade group difference t-tests.

Correlations

Correlations among study variables for the whole sample are presented in Table 4. Number of friendship nominations at Time 1 were not correlated with number of

friendship nominations at Time 2, suggesting a fairly fluid social environment.

Depressive symptoms at Time 1 were correlated with friendship nominations at Time 1 ($r = -.25, p < .05$); however depressive symptoms at Time 2 were not significantly related to friendship nominations at Time 2, though this relationship did approach significance ($r = .25, p = .072$). Changes in friendship nominations over time were related with scores on conversational self-focus ($r = .35, p < .001$), negative feedback-seeking ($r = .30, p < .01$) and with depressive scores only at Time 2 ($r = .278, p < .05$). Friendship nominations at Time 1 were correlated with negative feedback-seeking ($r = -.28, p < .05$). Scores in depressive symptoms were stable across both time points ($r = .51, p < .001$). Scores in depressive symptoms at Time 1 were related to each hypothesized moderator: conversational self-focus ($r = .25, p < .05$), excessive reassurance-seeking ($r = .44, p < .001$), negative feedback-seeking ($r = .27, p < .05$) and rejection sensitivity ($r = .42, p < .001$). All moderators except for negative feedback-seeking remained significantly related to scores in depressive symptoms after six weeks at Time 2: conversational self-focus ($r = .44, p < .001$), excessive reassurance-seeking ($r = .32, p < .05$), and rejection sensitivity ($r = .34, p < .01$). Significant relationships between Time 1 friendship nominations and negative feedback-seeking ($r = -.28, p < .05$) and between Time 2 friendship nominations and conversational self-focus ($r = .32, p < .01$) were observed. Other significant relationships were observed between negative feedback-seeking and conversational self-focus ($r = .26, p < .05$) and between negative feedback seeking and rejection sensitivity ($r = .24, p < .05$). Correlations are presented in Table 4.

Depression-Rejection Trajectory

The first major hypothesis of the current study was that initial depressive scores would predict a loss of total number of friendship nominations over time—the depression-rejection trajectory. A regression model was tested in which Time 1 CES-D scores predicted Time 2 friendship nominations; Time 1 friendship nominations were controlled. The stability of friendship nominations from Time 1 to Time 2 (i.e., main effect of Time 1 friendship nominations) was not significant ($\beta = 0.12, p = .29$). The main effect of Time 1 CES-D scores was also not significant ($\beta = -0.02, p = .99$).

Additionally, it was expected that the relation between Time 1 depressive scores and changes in friendship nominations over time would be moderated by aversive interpersonal behaviors, namely conversational self-focus, excessive reassurance-seeking, negative feedback-seeking, and rejection sensitivity. A model identical to the one described above was tested except that the main effect of the interpersonal behavior and the interaction of Time 1 depressive scores and the interpersonal behavior were added.

Regarding the model testing moderation by conversational self-focus, the stability of friendship nominations over time was not significant ($\beta = 0.15, p = .19$); the main effect of Time 1 CES-D scores also was not significant ($\beta = 0.15, p = .68$). The main effect of conversational self-focus was significant ($\beta = .46, p < .01$), such that higher levels of self-focus were associated with increased numbers of friendship nominations at Time 2. The interaction between Time 1 CES-D scores and conversational self-focus was not significant ($\beta = -0.29, p = .48$).

The model testing moderation by excessive reassurance-seeking again showed no significant stability of friendship nominations over time ($\beta = .13, p = .28$), as well as no

main effect for Time 1 CES-D scores ($\beta = -.03, p = .88$). No main effect was found for excessive reassurance-seeking ($\beta = .15, p = .53$). Finally, there was no significant effect for the interaction of Time one CES-D scores and excessive reassurance-seeking ($\beta = -.08, p = .77$).

Similar observations were made for the model testing negative feedback-seeking. Friendship nomination stability over time was not significant ($\beta = .16, p = .18$). The main effect of CES-D score was insignificant ($\beta = .05, p = .79$). No main effect was found for negative feedback seeking ($\beta = .24, p = .13$). The interaction of CES-D score and negative feedback-seeking also was nonsignificant ($\beta = -.14, p = .56$).

As well, the model testing rejection sensitivity showed no significant effects, neither for friendship stability ($\beta = .13, p = .29$) nor for effect of CES-D score ($\beta = -.07, p = .88$). No main effect was shown for rejection sensitivity ($\beta = .08, p = .70$). No effect for the interaction of CES-D score and rejection sensitivity was shown ($\beta = .04, p = .95$). Results of these regression analyses are presented in Table 5.

Finally, the main effect of gender and all possible interactions with gender were added to each of the regression models described above. None of the interactions with gender were significant, suggesting that none of the hypothesized paths were further moderated by gender.

Depression-Resilience Trajectory

The second major hypothesis of the current study was that adolescents' depressive symptoms would decrease as a function of having higher numbers of peer-nominated friendships—the depression-resilience trajectory. A regression model was tested in which Time 1 friendship nominations predicted Time 2 CES-D scores; Time 1 CES-D scores

were controlled. The main effect of time 1 CES-D scores (i.e. stability of symptoms of depression over time) was significant ($\beta = .45, p < .01$). The main effect of Time 1 friendship nominations was in the expected direction but was not significant ($\beta = -1.20, p = .28$). The interaction between Time 1 CES-D scores and number of friendship nominations was entered into the model to determine if the impact of friendship nominations depended on initial levels of depressive symptoms but was not significant ($\beta = .20, p = .10$). Results are presented in Table 6.

As before, the main effect of gender and all possible interactions with gender were added to the above model. None of the interactions with gender were significant, suggesting that these paths were not further moderated by gender.

DISCUSSION

The study of depression and depression related disorders in the social context is still an incomplete venture for researchers, and current work to elucidate the pathways of degrading social networks of those with elevated symptoms depression is still revealing important information in regard to the intervention efforts to alleviate the pathology of the mental illness. Coyne's (1976) interpersonal theory of depression is a powerful conceptualization of the social context surrounding those with elevated symptoms of depression, and as such is useful in this research. The current study aimed to examine the interplay between adolescent depressive symptoms and depression related interpersonal behaviors with friendship rejection. This research is important as it studies an under scrutinized and vulnerable age-group and population. Increasing our general understanding of depression and functions of peer acceptance in this developmental period has broad implications for raising awareness and sensitivity about mental health and developmental outcomes. Further, the current study used a relatively very new research concept in this field, conversational self-focus, which is a behavior that has been observed to correlate with depressive symptoms, yet still requires further research to understand its full implications to youth development.

Correlational findings were generally consistent with those of previous research. For instance, scores in depressive symptoms were related with each of the interpersonal behaviors and social-cognitive variables at Time 1 with very strong correlations observed between depressive symptoms and excessive reassurance-seeking and rejection sensitivity. Similarly, all interpersonal behaviors were associated with depressive

symptoms at Time 2, with the exception of negative feedback-seeking. These results suggest a strong foundation of the connection between these conceptualized interpersonal behaviors and the likelihood for people with depression to engage in them.

At least at Time 1, depressive scores were found to correlate with lower number of friendship nominations, giving evidence to the struggle that many youths with elevated depression face when it comes to securing friend groups. As Nangle and colleagues (2003) suggested, friendship quantity, as well as quality, play important roles in feelings of loneliness and inadequacy. Changes in the number of friendship nominations received was also correlated with the interpersonal behaviors of conversational self-focus and negative feedback-seeking. Interestingly, depressive scores at Time 2 were also shown to correlate with an increase in friendships over time. This is rather contradictory to the proposed interactional model of depression. Further, this result may be telling of the environment of this adolescent population. Since depressive symptoms were shown to be correlated with the interpersonal behaviors studied here, students may have a good sense of awareness of who among them is showing signs of distress, and be likely to offer emotional support through intimate friendship. This is only one postulation, and further research should take into account what factors may be contributing to this trend. For instance, it is known that friendship functioning and peer rejection in adolescence is not the only source of potential stress-related mood disturbances, and future studies may take into account other environmental factors that could affect the trajectory of depressive symptomology, such as influence from family members, the loss of loved ones, or changing SES. The diathesis-stress model of the development of depression is immensely complex, and should further lead researchers to take into account the environmental

factors which may impact this disorder, especially in youth populations in the midst of their development.

Age was an important factor in the findings of this study, with significant differences observed between the two grade groups (middle and upper school students). Results indicated that grade group discrepancies existed for friendship nominations at Time 1 favoring participants from the middle school, who on average received two more nominations than did upper school students. This finding is intriguing; since there were fewer total middle school participants in this study, there were therefore fewer total available nominations to be received. Nevertheless, middle school students did average a higher number of nominations received each. It may be indicative of late adolescents' greater intimacy in friendships than in early adolescence that these students were less likely to elect acquaintances as their close friends (Buhrmester, 1987). However, this difference was not noted at Time 2, with upper school students showing much higher rates of friendship nominations than before, and actually receiving marginally more friendship nominations than middle schoolers. The reasons underlying this sharp gain among this group are difficult to determine at the time of the current study, and further research could undertake looking into social-environmental considerations that such a trend exists.

It was also observed in this study that upper school students showed more depressive symptoms than did middle school students, even though this finding only reached statistical significance for Time 1. This is consistent with information reported by the National Institute of Mental Health regarding the development of depression across the adolescent period. An additional grade group difference was observed for

negative feedback-seeking. This was the only grade group difference observed for the interpersonal behaviors and social-cognitive variables of interest. Specifically, it was shown that middle school students reported to engage in negative feedback-seeking far less frequently than upper school students. However, compared to a study done by Borrelli and Prinstein (2005), using the same measure to assess negative feedback-seeking in 478 students aged 11 to 14, i.e. middle school age, the current study found much higher rates of negative feedback-seeking in this group. The observation that older adolescents sought to self-verify negatively is not surprising, given that they reported higher levels of depressive symptoms at Time 1, and negative feedback-seeking was correlated with scores of depressive symptoms.

Gender differences in the current study were likewise notable. Girls reported higher levels of depressive symptoms than their male counterparts, which again is consistent with information reported by the National Institute of Mental Health. The general finding that women suffer from depression more so than men has far-reaching implications for their health and safety and must still be a subject of research and for the creation and implementation of evidence-based interventions. The only other gender difference regarded excessive reassurance seeking, specifically that girls engaged in this behavior more than boys. This is also not surprising; as previously discussed, girls' friend groups foster more intimate conversations than boys' friend groups (Moller, Hymel, & Rubin 1992). This is also reflective of the finding of Starr and Davila, (2008), which reported that studies examining excessive reassurance-seeking with larger female populations report more of this behavior.

The current study was unable to confirm the hypothesized depression-rejection trajectory, in which, as first theorized by Coyne (1976), elevated symptoms of depression lead to deteriorating social spheres and the loss of close friendship. The main effect of scores on depression at the time of first observations was not significantly predictive of a loss of friendship nominations over time. The question of the directionality of the relationship between depressive symptoms and peer rejection has been asked in the past, and while the bulk of research makes an unambiguous correlation between depression and peer rejection, there is also evidence of a bidirectional relationship (Platt, Kadosh, & Lau, 2013). This being said, there are several studies where peer rejection was found to precede the manifestation of or worsening of depressive symptoms (Nolan, Flynn, & Garber, 2003; Prinstein & Aikins, 2004), and that a lack or loss of close friends (i.e., peer rejection) is predictive of increased feelings of loneliness and symptoms of depression. With this trend somewhat established, part of the goal of the current research was to offer up support for the bidirectional model of interaction, and to reaffirm Coyne's interactional description of depression among a group of adolescents.

As for the hypothesized moderators of this trajectory, the only significantly predictive variable was of conversational self-focus. What is most intriguing is the finding that engaging in conversational self-focus in the current population actually witnessed a significant *increase* in friendship nominations over the study. To our knowledge, this finding has not been documented elsewhere in the literature. By understanding the environment that these youths were in, it is possible that conversational self-focus was beneficial to creating or maintaining friendship in two ways. The preparatory school which these youths attend is a competitive environment, with three-

season extracurricular activities mandatory, college placement being the norm, and advanced placement classes being quite popular throughout the school. If this is the case, then it is possible that conversational self-focus may either: be a source of intimacy between students who feel the pressure of this aggressive environment and who feel the need to disclose their issues, or be a sort of means of self-aggrandizement, where youth who boast their accomplishments, or perhaps qualify the gravity of their own problems against those of their peers, are perceived by others in a positive manner, and are therefore more accepted by peers. More research, both in the preparatory school environment as well as in more generalizable populations, is needed to more fully understand this finding.

Findings were also insubstantial for the second main hypothesis of this study, which conjectured that a greater number of friendships would signal a reduction in feelings of depression---the depression-resilience trajectory. This is an interesting finding, since in the past, deficits in perceived social support have been shown to predict increases in depressive affect (Stice, Ragan, & Randall, 2004). One may therefore assume that having greater number of friends, and more social support, would predict a decline in symptoms of depression. A key disparity may herein lie with the *perception* of social support. Where depression is often characterized by a negative self-concept and feelings of low global self-worth, depressed individuals may not perceive others to be readily available to offer social support even when they self-prescribe as friends of the depressed person. Therefore, having friends may not help the root cause of underlying intrapersonal factors which influence depressive pathology. Studies aimed to determine which, if any, intrapersonal variables may lead to feelings of isolation and despair are therefore

important to understanding depression in a social context. One such study includes work by Lewinsohn, Mischel, Chaplin, & Barton, (1980), where it was shown that depressed individuals actually only rate their social competencies *equal* to how others rate them, while non-depressed participants rated themselves *higher* than they were rated by others, suggesting that people with depression suffer from a stark sense of realism that can negatively affect their cognitive-emotional style.

The current study did have limitations that are important to discuss. First, the target population of the study was restrictive. Not only was this study focused exclusively on the age range of adolescence, but the participant pool was also limited by the size of the school in which data was collected. North Yarmouth Academy is a rather small preparatory school, with only 207 total students across the middle and upper schools, and so the opportunity to collect data from a larger number of participants was somewhat lost in this. Further, the study did not involve the entire student body, as noted by relatively small total number of participants in comparison to the total population of North Yarmouth Academy. This number was even further diminished through a high attrition rate. From the time of first data collection to that of second data collection, 25 of the original 82 participants had abandoned the study. This was representative of 24.1% (7) of the middle school participants, and 33.9% (18) of the upper school participants. One supposed contributor to this high rate of attrition could have been the manner which youth, as well as their parents, were contacted if they exhibited elevated levels of depression such that they reached the suggested cutoff of a score of 19 or higher on the CES-D. Surely, having school administration contact parents and intervene with the youth to offer psychiatric support could be viewed as an interference with the validity of

scores across the study. For instance, to avoid this uncomfortable situation, it is likely that participants may have answered falsely to measures asking about the topic of their mental health. While the current study witnessed stability in CES-D scores over time, effectively negating this concern, it should still be a matter for consideration in future research that intervention methods regarding mental health reports are primarily effective in the arbitration of treatment of youth mental disorders, while also ensuring scientific validity of study protocol.

Another limitation in the scope of the current study again deals with the school of interest. Preparatory schools like North Yarmouth Academy not only charge a costly tuition fee, likely making all of the participants in the current study at least upper-middle class, with all of the support which a comfortable lifestyle offers, but they are also competitive places. Therefore the students which attend these schools are often those with the cognitive-emotional style to overcome adverse situations. These are also places which emphasize success in academics and extracurricular activities, which may take away from adolescents' time spent in social contexts, and even affect the total number of friendships that a student could properly manage. The current study population, and indeed the population of the state of Maine in general is predominantly white. The current study therefore saw little ethnic/racial diversity, and as such the generalizability of results suffers.

Private school students are an understudied group, and so future research in this field should have two goals regarding this limitation. First, future research should replicate or modify the current research for studies of more generalizable populations of public schools, and second, future research should continue studying the preparatory

school population for insight into this poorly documented subpopulation. This study could also be conducted in groups with higher rates of depression, such as a clinical sample, to better assess the expression of interpersonal behaviors of interest across the spectrum of symptomology. For instance, the construct of conversational self-focus has never before been studied in groups with severely elevated depression.

Other limitations can be said to include the manner of data collection and conceptualization of variables. One simple matter of data collection pertained to the short-term longitudinal design of the study. The data collection points were six weeks apart from each other, and while this may seem like a lifetime at age fifteen, a study using data collection points farther from each other, or in six-week intervals across a longer time could have witnessed a greater amount of change within participants, their mental health, their scores on interpersonal variables and on their rejection or acceptance by their peers. Also, the specific way that friendship nominations were recorded may have affected the outcome of this study. These nominations were unilateral, meaning that only one friend had to nominate another in order for a nomination to be “received”. Had this variable been a bilateral (i.e., reciprocal) construct, which would have surely required a much larger sample size, then this research would be able to distinguish between those youth who had relatively stable friend groups, and those who had more turbulent friendships, but happened to receive the same number of nominations at both time points, albeit from different peers. These participants would likely have experienced the feelings of rejection associated with losing friendships, but the current unilateral structure would not have been able to capture this.

What is more, the current research utilized an alphabetized list to record friendship nominations, as opposed to a method involving free-recall of one's friends. It should be understood that either decision in this matter would have some effect on data outcome, however, the drawbacks commonly associated with friendship nominating from an alphabetized list (i.e., response bias; over-generosity of nominations) which could have affected the associations between depressive symptoms and rejection by one's peers were not witnessed in the current study. In fact, friendship nominations were given out quite conservatively. While participants were given the option to nominate up to five of their peers with whom they spend the most time, the average number of friendship nominations received was low at Time 1, (middle school $M = 2.62$, $SD = 1.23$; upper school $M = 0.62$, $SD = 0.72$) and only somewhat higher at Time 2, (middle school $M = 2.10$, $SD = 1.40$; upper school $M = 2.35$, $SD = 1.52$).

Lastly, the statistical model used in determining the predictive relationship between outcomes of depressive symptoms and rejection, as moderated by interpersonal and social-cognitive variables, may not have fully captured the profile of the participants. This is to say that, the model used only the scores reported on each of the four moderators at Time 1 to predict outcome variables. In a more perfect study, this model would have taken into account the participants' feelings on these moderators at both time points to ensure that their feelings were stable, and to control for other, external causes of these reported feelings. For instance, a participant could have rated quite low on negative feedback-seeking at Time 1, then over the course of the next six weeks, had any kind of innumerable tragic thing happen to them, and then by the time of second data collection call into question their own self-concept and be more eager to elicit negative feedback

from others. This sort of uncommon, but not altogether unforeseeable variance would be unaccounted for in the current model.

Notwithstanding the substantial room for improvement, the current study distinguishes itself as an extension of previous investigations of some well-established social phenomena in an understudied population. Regardless of the inability to provide concrete evidence for the hypothesized link between levels of depression and peer rejection, this research has given indication to previously unobserved or seldom studied trends, such as the connection of a new construct, conversational self-focus to an intriguing gain of friendships. Likewise, it adds to the discussion on the directionality of the connection of depression with social success. Future research can extend on these ideas by continuing to document trends in adolescent behavior. Studying these constructs, adolescence, depression, and human behavior, remains an important undertaking for this reason alone, that we continue to find new trends and create new understandings which impact and shape our views on the complexities and intricacies of interpersonal experiences.

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Table 1. *Descriptive Statistics of Study Variables*

<u>Study Variable</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Mean (SD)</u>
Age	11	18	14.84 (2.05)
Depressive symptoms (Time 1)	0.00	40.00	9.36 (8.74)
Depressive symptoms (Time 2)	0.00	37.00	8.22 (8.90)
Friendship nominations (Time 1)	0	5	1.33 (1.36)
Friendship nominations (Time 2)	0	7	2.26 (1.47)
Change in friendship nominations	-3	6	0.93 (1.87)
Excessive reassurance-seeking (Time 1)	0.00	1.50	0.09 (0.26)
Conversational self-focus (Time 1)	0.00	3.00	1.27 (0.48)
Negative feedback-seeking (Time 1)	0.00	15.00	4.91 (3.99)
Rejection sensitivity (Time 1)	1.00	4.75	2.10 (0.62)

Table 2. Mean Level Gender Differences in Study Variables

	Females (n = 38)	Males (n = 43)	<i>t</i>
	<u>Mean (SD)</u>	<u>Mean (SD)</u>	
1. Depressive symptoms (Time 1)	11.95 (9.02)	7.13 (7.93)	-2.57*
2. Depressive symptoms (Time 2)	8.83 (8.11)	7.46 (9.94)	0.56
3. Friendship nominations (Time 1)	1.26 (1.33)	1.40 (1.40)	-0.43
4. Friendship nominations (Time 2)	2.39 (1.62)	2.14 (1.34)	0.77
5. Change in friendship nominations	+1.13 (1.85)	+0.74 (1.90)	0.93
6. Excessive reassurance-seeking (Time 1)	0.15 (0.35)	0.03 (0.14)	2.04*
7. Conversational self-focus (Time 1)	1.28 (0.31)	1.26 (0.60)	0.14
8. Negative feedback-seeking (Time 1)	5.05 (3.92)	4.79 (4.10)	0.29
9. Rejection sensitivity (Time 1)	2.23 (0.57)	1.99 (0.64)	1.74

Notes. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. **** $p \leq .0001$.

Table 3. Mean Level Grade Group Differences in Study Variables

	Middle School (n = 29) Mean (SD)	Upper School (n = 52) Mean (SD)	<i>t</i>
1. Depressive symptoms (Time 1)	6.66 (7.34)	10.85 (9.15)	-2.12*
2. Depressive symptoms (Time 2)	6.32 (6.73)	9.53 (10.03)	-1.31
3. Friendship nominations (Time 1)	2.62 (1.23)	0.62 (0.72)	8.99****
4. Friendship nominations (Time 2)	2.10 (1.40)	2.35 (1.52)	-0.70
5. Change in friendship nominations	-0.52 (1.24)	1.73 (1.69)	-0.63****
6. Excessive reassurance-seeking (Time 1)	0.06 (0.14)	0.10 (0.31)	-0.71
7. Conversational self-focus (Time 1)	1.15 (0.35)	1.33 (0.54)	-1.66
8. Negative feedback-seeking (Time 1)	2.90 (3.15)	6.02 (4.00)	-3.63****
9. Rejection sensitivity (Time 1)	2.03 (0.66)	2.14 (0.60)	-0.79

Notes. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. **** $p \leq .0001$

Table 3. Mean Level Grade Group Differences in Study Variables

	1	2	3	4	5	6	7	8	9
1. Depressive symptoms (Time 1)	-	.51****	-.25*	-.03	.16	.44***	.25*	.27*	.42****
2. Depressive symptoms (Time 2)		-	-.10	-.03	.28*	.32*	.44***	-.04	.37**
3. Friendship nominations (Time 1)			-	.13	.63****	-.15	-.14	-.28*	-.12
4. Friendship nominations (Time 2)				-	.70****	.05	.32**	.12	.05
5. Change in friendship nominations (Time 1)					-	.15	.35***	.30**	.13
6. Excessive reassurance-seeking (Time 1)						-	-.04	.19	.18
7. Conversational self-focus (Time 1)							-	.26*	.08
8. Negative feedback-seeking (Time 1)								-	.24*
9. Rejection sensitivity (Time 1)									-

Notes. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. **** $p \leq .0001$.

Table 5. *Regression Analyses Relevant to the Depression-Rejection Trajectory*

Baseline model

<u>Independent Variable(s)</u>	<u>Dependent Variable = Friendship nominations (Time 2)</u>
	β
Friendship nominations (Time 1)	0.14
Depressive symptoms (Time 1)	0.00

Moderation analyses: Excessive reassurance-seeking

<u>Independent Variable(s)</u>	<u>Dependent Variable = Friendship nominations (Time 2)</u>
	β
Friendship nominations (Time 1)	0.14
Depressive symptoms (Time 1)	-0.00
Excessive reassurance-seeking (Time 1)	0.82
Depressive symptoms \times Excessive reassurance-seeking	-0.02

Moderation analyses: Conversational self-focus

<u>Independent Variable(s)</u>	<u>Dependent Variable = Friendship nominations (Time 2)</u>
	β
Friendship nominations (Time 1)	0.16
Depressive symptoms (Time 1)	0.03
Conversational self-focus (Time 1)	1.39**
Depressive symptoms \times Conversational self-focus	-0.03

Table 5 (continued)

Moderation analysis: Negative feedback-seeking

<u>Independent Variable(s)</u>	<u>Dependent Variable = Friendship nominations (Time 2)</u>
	β
Friendship nominations (Time 1)	0.18
Depressive symptoms (Time 1)	0.01
Negative feedback-seeking (Time 1)	0.09
Depressive symptoms \times Negative feedback-seeking	-0.00

Moderation analyses: Rejection Sensitivity

<u>Independent Variable(s)</u>	<u>Dependent Variable = Friendship nominations (Time 2)</u>
	β
Friendship nominations (Time 1)	0.14
Depressive symptoms (Time 1)	-0.01
Rejection Sensitivity (Time 1)	0.18
Depressive symptoms \times Rejection Sensitivity	0.00

Notes. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. **** $p \leq .0001$.

Table 6. *Regression Analysis Relevant to the Resilience Trajectory*

<u>Independent Variable(s)</u>	<u>Dependent Variable = Depressive symptoms (Time 2)</u>
	β
Depressive symptoms (Time 1)	0.45**
Friendship nominations (Time 1)	-1.24
Depressive symptoms \times Friendship nominations	0.20

Notes. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$. **** $p \leq .0001$.

AUTHOR'S BIOGRAPHY

Tyler R. Hicks was born in Gray, Maine on February 15th, 1996 to Cheryl and Dale Hicks. In high school he was captain of the varsity football team and vice president of the senior class. He attended the University of Southern Maine in Portland, Maine for his freshman year before transferring to the University of Maine, Orono where he completed his degree in Developmental Psychology with minors in Spanish and International Affairs. During his time with the Honors College he attended the 2017 National Conference of Honors Colleges in Seattle, Washington where he presented his work with Dr. Nico Jenkins. He also traveled with the Honors College to Washington D.C. in the spring of 2017. Tyler was awarded the John W. Nichols Scholarship for his work in research in Psychology.

After graduation, Tyler is continuing his education by becoming certified in Teaching English as Second Language (TESL), and will be travelling to Cartagena, Spain to teach English to high school aged students.