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Reciprocal Friendships in Children Grow with Age

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DECLARATION

I declare that I have written this thesis myself and on my own. I have duly referenced and quoted all the sources and literature that I used in it. I have not yet submitted this work to obtain another degree. I will sign this declaration and consent by handwritten signature.

In Prague, Czech Republic, 5th of May, 2023   Signature:

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AUTHOR'S CONTRIBUTION TO THE PROJECT

I am responsible for the formulation of the research question, literature review interpretation of the results and writing. I also assisted in the scoring of tests and statistical analysis.

Abstract

As children mature, their friendships change, which could have an impact on their development including the development of their sense of self. This thesis investigates how the number of reciprocal friendships changes with age and relates to self-esteem in children aged 8 - 14 years. Using a cross-sectional research design, we recruited 6 classes (Grades 2 to 8) from publicschools throughout Prague with a total of 120 children (58 girls, 62 boys). We asked each child to nominate who their friends were within their given class and measured their self-esteem by self- report. A friendship was considered reciprocal if both children nominated each other as friends. We hypothesized that the number of reciprocal friendships would increase with age, and that children with a higher number of reciprocal friendships would have higher self-esteem. Contrary to our hypotheses, we found that the number of reciprocal friendships was not significantly associated with age or with self-esteem. However, the study found that self-esteem was significantly positively associated with the total number of friends a child nominates. This research contributes to the understanding of the factors that shape children's social development and well-being and highlights the importance of considering multiple factors when studying the relationshipbetween friendship and self-esteem.

Contents

1. Introduction

Friendships are an essential part of a child's social development and play a crucial role in shaping their identity. Not all friendships are equally beneficial. It is therefore important to identify the specific characteristics of friendships that are most likely to benefit children's health and development. One key aspect that has received considerable attention throughout the years is reciprocity. Reciprocity refers to the mutual exchange of support, care, and emotional connection between friends. A reciprocal friendship is one where both individuals consider each other as friends, whereas a non-reciprocal friendship occurs when one individual regards another as a friend, but the other does not reciprocate these feelings. Reciprocal friendships are more meaningful, enduring, and satisfying than non-reciprocated friendships (Clark & Ayers, 1988; Lang & Fingerman, 2003; Litwack et al., 2012). Numerous studies suggest that children form friendships from an early age. However, the ability to form both temporary and more stable reciprocal friendships continues to develop during the preschool years and beyond (Howes et al., 1988). The formation of reciprocal friendships may become more important as children develop because friends become a significant source social support. As children mature, their capacity to form friendships changes, and the role that friends play in the child's life also changes. Also, as children mature, they face challenges in the school environment that require emotional support, and friends provide this support, so the capacity to establish reciprocal friendships likely becomes more important. This capacity becomes even more important for the next phase of development, adolescence, which is characterized by the expansion of friend networks and increased autonomy and independence from parents (Lang & Fingerman, 2003). According to this perspective, the number of reciprocal friendships grows with a child's age, as children beginto depend more on peers and less on family for social support, affirmation and other resources.

As I review in greater detail, self-esteem is an important aspect of friendships because it influences how individuals interact and communicate with their friends. Thus, past research examined the correlation between self-esteem and the quantity and quality of friendships. Metzler and Scheithauer (2017) found that adolescents with a larger number of friends exhibited higher self-esteem. The quality of friendships is also important. According to Parker and Asher (1993), children who have more supportive friendships tend to be more accepted within their peer group, exhibit higher social competence, display greater motivation and involvement in school, and demonstrate fewer behavioral issues than their counterparts who have less supportive relationships. However, most significantly, researchers identify that the relationship between self-esteem and the quality friendship support is bidirectional in its nature; those with high self-esteem may find the formation and maintenance of friendships easier – a finding supported by both Azmita et al. (2005) and Bosacki et al. (2007), whilst in turn those who have well-established/well-functioning friendship groups are likely to report higher levels of self-esteem (Sánchez-Queija, 2017, Raboteg-Saric and Sakic, 2013). In terms of the mechanisms of this bidirectional relationship, different authors have explored the different directional components of it, i.e. – that of self-esteem impacting friendship, and that of friendship impacting self-esteem. Thus, Orth and Robins (2022) identify that in relation to the way self-esteem operates upon the quality of friendship development, the presence of high self-esteem allows individuals to produce more satisfying social interactions whilst Gorrese and Ruggieri (2013) explore the impact of friendship quality on self-esteem, and identify that well-functioning friendships allow individuals to experience greater emotional closeness and acceptance, which in turn fosters a greater sense of individual worth and value. The bidirectional nature of self-esteem and friendship are explored in greater detail in further chapters of this literature review.

In terms of what constitutes a 'well-functioning' or supportive friendship, a key issue is that of reciprocity – or, as Vaquera and Kao (2008) phrase it, the issue of "Do You Like Me as Much as I Like You?". Individuals are more likely to obtain support from reciprocal friendships compared to non-reciprocal friendships, especially as children grow older and become more dependent on peers for affirmation (Vaquera and Kao, 2008). An assumption thus follows that the number of reciprocal friendships may therefore be more related to children's self-esteem than the total number of friends a child nominates, and further, that the importance of this reciprocity (especially in relation to self-esteem) changes with age. Despite this, there is relatively little research on the extent of reciprocity in friendship with specific relation to its *change* from childhood to adolescence, and the associated effects on self-esteem.

The present study thus seeks to investigate how the number of reciprocal friendships develop as children grow older. The hypothesis is that children's friendships become more reciprocal with increasing age. In addition, this study will explore the relationship between reciprocal friendships and self-esteem. Thus, we further hypothesize that children who have more reciprocal friends also have higher self-esteem. This research is important because reciprocity may be part of what distinguishes beneficial friendships from less beneficial ones, in terms of their impact on an individual's mental health and well-being. Reciprocal friendships, as opposed to non-reciprocal ones, may be more beneficial to children's self-esteem. Understanding how self-esteem relates to social factors is important, because self-esteem is a critical component of an individual's psychological and physical development (Harter, 1999). Finally, reciprocal friendships and self-esteem are essential for individuals in different contexts, such as in schools, workplaces, and social networks, and understanding their connection can contribute to the development of healthy social and emotional environments.

2. Literature Review

First, I provide basic definitions of friendship and self-esteem. I then provide a more detailed review of how friendships change from childhood to adulthood and why friendships, specifically reciprocal friendships, are important. I then provide a review of research on self-esteem, before finally describing the theories and evidence relating self-esteem and friendship.

Definition of friendship

In our daily lives, the nature of friendship often takes on an ambiguous nature: whilst we may use the term frequently and broadly, in reality there are subtle distinctions as to how we view our relationship with others and whether we define it as a friendship, or something else – an acquaintance, a colleague, etc. Two aspects which are identified as crucial to the definition of friendship are that of its voluntary nature, and its mutuality (Dunn, 2004). For instance, Newcomb and Bagwell (1995) describe friendship as "a mutual dyadic relationship that provides more affection than other peer-relationships". Relating specifically to the issue of 'mutuality', it is important to recognize that not all friendships are mutual: an individual may consider someone to be their friend, when the feeling is not returned. This leads researchers to distinguish between reciprocal and non-reciprocal friendships (Lodder et al., 2017), and is often assessed with reference to friendship 'nomination', in which subjects list those that they consider friends. Any non-congruence between the lists – i.e., when one person nominates the other but this is not reciprocated by that other – marks the friendship as non-reciprocal (Asher et al, 2014). The distinction is one of some significance: Hartup (1996) identifies that reciprocity in friendship marks a tendency towards higher social and emotional support within that friendship, which in turn means that the friendship exerts greater influence upon the individuals involved. According to Hartup, keeping these reciprocal friendships is connected to good things happening during important life changes. It is important to know this is just one part of the many quality aspects of the friendship that can affect how people handle different

stages of growing up. Nonetheless, Hartup asserts that it is reasonable to assume that the outcomes of reciprocal friendships differ from those of non-reciprocal friendships, which is a conclusion of some importance when it is identified that in younger children (ranging from 8 to 15 years) an average of 10 – 25% of friendships held by individuals are non-reciprocal in nature (Parker and Asher, 1993, Parker and Seal, 1996).

Self-esteem: definitions and features

"Definitions of self-esteem" encompass a subjective and personal assessment of one's value and worth, as articulated by Rosenberg (1965). Baumeister et al. (2003) emphasize its distinctiveness from objective metrics, presenting it as a purely personal evaluation that can be rooted in either accurate recognition or a conceited sense of superiority. Orth and Robins (2014) echo this perspective, underlining the subjectivity of self-esteem and its potential detachment from external measures. Despite the lack of competitive quality, self-esteem is intimately tied to social belongingness, serving as an internal monitor crucial for overall well-being, success, and survival (Leary & Baumeister, 2000). This concept, while not necessarily innate or stable, experiences changes across the lifespan.

Self-esteem is not a fixed construct, as indicated by Robins et al. (2002). Their study shows that self-esteem generally decreases during adolescence due to various developmental changes, including biological, cognitive, social, psychological, and academic factors (Finkenauer et al., 2002; Robins et al., 2002). Crocker and Park (2004) assert that the ability to compare oneself to others, acquired during childhood, contributes to this decline. This comparative ability, in line with Rosenberg's non-competitive understanding, helps develop awareness of the 'minimum bar to entry' in terms of social acceptance, belonging, and value. In adulthood, self-esteem generally follows a trend of increasing until midlife and subsequently declining in old age (Orth et al., 2010; 2014). Considering the protective functions of

friendships, high-quality friendships may serve as a buffer against age-related decreases in self-esteem.

2.1. Perspectives on friendships

The aim of this section is to describe how friendships differ from other social relationships and to understand the purpose of friendships. LeCroy (1988) defines friendship as a mutual involvement between two people that is characterized by affection, satisfaction, enjoyment, openness, respect and a sense of feeling important to the other. The norms and characteristics of friendship are often loosely defined and determined by those involved. Additionally, unlike kinship ties which are often formalized through rituals and celebrations, friendships are typically not treated in the same manner (Rotheram-Fuller et al., 2022). The following sections provide adevelopmental perspective on the characteristics and functions of friendships across the life span.

Blieszner et al., (2003) propose that friendship is a voluntary relationship that plays a role in fostering and sustaining an individual's development. In early life phases such as infancy and early childhood, however, adults decide when, where and with whom infants and toddlers interact with because children at this stage do not yet possess physical or cognitive capabilities to initiate and sustain voluntary relationships. Behavioral observations show that regular interactions with familiar peers have a positive impact on the psychosocial development of infants and toddlers, promoting interpersonal and social responsiveness, enhancing social development and play skills, and contributing to the development of friendships with some children and not the others (Arnold, 1979; Howes et al., 1988). In later childhood and early adolescence, individuals become more selective, with friendships becoming more homogeneous concerning individual characteristics such as gender, age, socioeconomic status, and ethnicity (Maccoby, 1990).

During the transition from childhood to adolescence, the importance of peer relationships and particularly peer groups sharply increases. About 75% of preschool children are involved in reciprocal friendships with their peers, which rises to 80–90% in teenage years when adolescents enter larger peer groups during the transition to middle school (Hinde et al., 1985). According to Harter (2012), when adolescents shift their attention from parents to friends, friends become a core influence on their development. In addition, the homogeneity of friendships decreases from this period until middle adulthood (Lempers & Clark-Lempers, 1993). There are multiple explanations for this trend. Furman et al. (2017) in suggest that as children progress into adolescence, they move into a variety of more 'specialized' arenas, where different aspects and components of their life focus in more specific ways. For instance, clubs, societies, part-time jobs and even the move from single-class schooling to subject-specific schooling all mean that older children begin to operate in an environment that is far less broad and generic than in their younger years. With this, they come into contact with others operating in similarly focused contexts but displaying far more varied, less homogenous underlying characteristics, and as such their friendships develop in a way; one that orientates itself initially around the specific elements of the shared interest or context, but otherwise does not necessarily share such unified demographic qualities.

The gendered-nature of friendships also takes on a new context at the time of transition to puberty decreasing the same-sex homogeny of younger friendships and setting the basis for exploration of future romantic and sexual attraction. Sometimes sexual or romantic attraction will form the basis of the friendship, or alternatively sexual/romantic arises from friendship (Hohnmann et al., 2017). In both cases though, these relationships form the basis for exploration of gender concepts more generally (Hohnmann et al., 2017). Boisvert and Poulin (2016) assert that it is precisely this understanding that gives those who form cross-gender friendships more of an advantage when they go on to form romantic relationships in later life. Both Hohnmann

and Boisvert and Poulin suggest that the reciprocal nature of friendships proves to be the key factor in fostering meaningful connections and contributing to personal growth across various aspects of relationships and gender exploration.

Reitz et al. (2014) state that the phenomenon of reciprocal friendships being crucial for developing meaningful connections, personal growth in relationships and gender exploration aligns with group socialization theory, which suggests that peer groups significantly influence the socialization of children and adolescents, with adolescence representing a key period in which individuals highly value their peer groups and become increasingly focused on gaining social acceptance within these groups. Adolescents compared to people of other ages may be especially sensitive to peer acceptance because they are less dependent on their parents than younger children but have still not developed a stable sense of self (Pfeifer & Berkman, 2018).

The existing literature emphasizes the significant impact of peer relationships on adolescent development, highlighting peer groups as a core influence. However, these findings have talked about peer relationships in a wide sense – which, whilst important – differ in their impact and mechanism of operation to that of 'close dyadic friendships'. Marion et al. (2013) identify that close dyadic friendships offer a particular form of psychological security and comfort to an individual, and in this sense operate as a familiar base from which an individual may feel more secure and confident when engaging in novel experiences or encounters. Conversely, the absence of the base that a close dyadic friendship provides may make new encounters more challenging and anxiety-inducing for individuals (Ladd and Troop-Gordon, 2003, as cited in Marion et al., 2013). Moreover, not only is the initial emotional well-being of an individual often impacted negatively if they lack a secure dyadic friendship base with a peer, but this potentially perpetuates and increases in severity over time, as the individual's self-worth is eroded, and as others begin to view them negatively for lacking such companionship (Birch & Ladd, 1996). In effect, as others begin to view them negatively for lacking such

companionship, the individual may face further ostracization, which in turn leads the individual to "rejection, victimization, or increased aggression" (Antonopoulou et al., 2019, p. 2) in contrast to those who cultivate mutual best friendships (Hodges et al., 1999; Rubin et al., 2004; as cited in Antonopoulou et al., 2019). This leads Boivin et al. (2001) to emphasize that friends play a protective role against adverse social experiences, providing support and comfort during times of adversity. The study across both genders and across different age groups reveal that children without close friends tend to experience more feelings of loneliness than those with at least one close friend (Parker & Seal, 1996) – a phenomenon that may continue to have psychological significance well into adulthood. The next section will address exactly this.

Romantic relationships and friendships

During adulthood, peer networks tend to become more gender-inclusive, and friendships formed during adolescence can serve as a valuable preparation for establishing significant relationships later in life, including romantic partnerships (McCormick et al., 2011; Fraley & Davis, 1997). However, the mechanism behind this proposition requires further examination. During early adolescence, there is a growing need to seek emotional closeness with same-gender friends outside of the family (Sullivan, 1953). This need intensifies as adolescents grow older. Researchers taking a social development perspective propose that the skills and abilities gained in such friendships, as well as the ability to share intimacy, can be extended to romantic relationships (Buhrmester & Furman 1987; Seiffge-Krenke 2003). Therefore, young adolescents who can manage to fulfill this need for intimacy by cultivating the necessary skills and competencies to form close friendships are more likely to have higher quality and more stable romantic relationships in the future. Over time, peers from the opposite gender are gradually included in the friendship network (Poulin & Pedersen, 2007). Developing friendships with peers of the opposite gender at an earlier age can confer certain advantages when it comes

to establishing romantic relationships. This is partly because having a more diverse group of friends can provide greater opportunities for social interaction and learning (Connolly et al., 2000). Yet, even during late adolescence, exploration remains to be the main trajectory and maintaining a single romantic relationship for a prolonged period is not yet a dominant trend (Arnett, 2000; Cohen et al., 2003).For instance, at age 18, the majority of adolescents are not in a stable committed romantic relationship at any given point in time (Rauer et al., 2013). Moreover, the majority of young people between 16 to 24 years old have not yet established a pattern of engaging in longer-termromantic relationships (Boisvert & Poulin, 2016). In contrast, nonromantic close friendships arefavorable contexts for developing relationship closeness and stability skills.

Allen et al. (2020) examined predictors during adolescence that significantly influenced satisfaction in romantic life during young adulthood. The findings of their study align with the developmental tasks' perspective, which suggests that the ability to form and maintain strong non-romantic intimate relationships during adolescence serves as a foundation for contentment in romantic relationships later in life (Waters & Sroufe, 1983, as cited in Allen et al., 2020). During early adolescence, Allen et al. (2020) identified two peer competencies as key predictors of future competence in romantic relationships: appropriate assertion with peers and positive expectations of peer interactions. These findings support theories proposing that self-concept-related competencies, rather than overt romantic behaviors, play a central role during the initial phase of adolescent romantic development (Brown, 1999; Seiffge-Krenke, 2003, as cited in Allen et al., 2020, p. 9). In late adolescence, Allen et al. identified the ability to establish and maintain close friendships as a predictor of future romantic competence, partially mediating the impact of previously assessed qualities. For males aged 16-18, high ratings of closeness from selected friends and stable friendships over a 2-year period were identified as significant indicators of future romantic competence. However, this effect was not observed

among females. This sex difference underscores the significance of establishing close friendships for male adolescents, who may have different developmental trajectories in building intimate relationships compared to females (De Goede et al., 2009; McNelles & Connolly, 1999; Radmacher & Azmitia, 2006, as cited in Allen et al., 2020). Overall, the results of Allen and colleagues' study suggest that the ability to establish strong and stable close friendships in late adolescence serves as a significant predictor of future romantic satisfaction in adulthood. Kansky et al. (2019) come to the same conclusion suggesting adolescents with high social competence can effectively transfer their emotional intelligence and skills from close friendships to romantic partnerships. Consequently, these individuals often encounter romantic relationships characterized by diminished hostile conflict and heightened perceived emotional well-being in adulthood (Kansky et al., 2019).

Positive and negative impacts of friendships

Friendships have the potential to bring a number of positive influences to an individual's life, but they also bring with them a range of challenges and psychological stressors which an individual will need to learn to deal with. This section addresses both.

From a positive standpoint, La Greca and Harrison (2005) have demonstrated through their research that close friendships have a significant impact on the development of "interpersonal intimacy, empathy, and perspective-taking skills", and furthermore, a reciprocal friendship has been found to alleviate the adverse effects of low peer acceptance (Bishop & Inderbitzen, 1995). This finding is particularly interesting in light of the findings of Birch and Ladd (1996), discussed above (in section 2.1) which suggested that peer acceptance was generally higher for those who demonstrated the ability to maintain close dyadic friendship. In this sense, there seems to be a 'dual operation' in terms of peer acceptance; close friendships generally lower the risk or wider peer rejection, but further offer a psychological buffer against

its impact in cases where wider peer rejection does somehow still occur. La Greca and Harrison (2005) identify that it is these close peer friendships – more so than those of family relationships, are a key source of intimacy and support which in turn reduce social anxiety (La Greca & Lopez, 1998; Vernberg et al., 1992 as cited in La Greca & Harrison, 2005) and increase positive self-esteem (Buhrmester, 1990; Compas et al., 1986), thus delivering overall improved generalized mental health outcomes for those with close friendships as compared to those without.

One important component of this set of wider mental health benefits pertains to the issue of stress and the impact of friendship thereon. Although the majority of research pertaining to the relationship of stress and friendship has been conducted on adults (Meyer (2011), there are nonetheless still a range of studies within the extant literature which suggest that friendship can operate on a protective basis against the negative impacts of stress in children and adolescents also (see for instance, Thompson et al. 2006). In a similar vein, Van Harmelen et al. (2016) identified that children who experienced social support when encountering stress experienced fewer depressive symptoms, though it should be noted that this study integrated both peer friendship *and* family when examining social support structures.

Interestingly, some studies suggest that it is not the *actual,* objective level of support being obtained from these friendships which provides this inoculation against the effects of stress, but instead the *perception* of support. Thus, both Meyer (2011) and Powers et al., (2009) highlight the significant role of *perceived* support from friends as a protective factor against the impact of emotional abuse and neglect on depression among adults whilst Burk and Laursen (2005) measured perception of friendship against the actual level of daily disagreements experienced in dyads, and found that it was those who perceived their friendship as lacking support and comprising of negative aspects (rather than those who – by mother reporting - objectively encountered more frequent friendship conflict but did not *perceive* the friendship

as negative) who were more likely to experience academic and behavioral troubles at school. Similarly, La Greca and Harrison's (2005) findings and Waldrip et al. (2008)'s study indicated that adolescents who perceived their friendships as possessing more positive qualities in their closest friendships reported lower levels of social anxiety.

However, close friendships do not exclusively deliver positive benefits to their participants, and may give rise to negative elements, including conflict, pressure, stress, and exclusion (La Greca and Harrison, 2005). Whilst the studies above suggest that the *quality* of the friendship (or at least, the *perceived* quality of the friendship) may be determinative in giving rise to negative effects, conflict is an inherent aspect of any social relationship and can yield both positive and negative outcomes that impact the overall quality and stability of the relationship (Bowker, 2004), and adolescents who encounter this conflict – even in friendships which were generally solid and marked by positivity – frequently report higher levels of anger or hostility, depressed mood, and tension or anxiety the following day (Vannucci, 2018). Indeed, friendships which are marked by negative characteristics have an even greater chance of manifesting negative mental health outcomes for those involved; for instance, Gorrese & Ruggieri (2013) identify that close attachment to peers who display unresponsive or rejective behaviors in return can result in negative self-perception for the individual being rejected.

In general, negative interactions within reciprocal best friendships can potentially give rise to feelings of social anxiety, amplifying discomfort or distress in peer interactions and fostering worries about negative peer evaluations. Paradoxically, instead of alleviating stress, the friendship itself may become a source of it. Nevertheless, as proposed by Berndt (1989), the support embedded in reciprocal friendships can act as a buffer against stress, particularly if the friendship endures the stressor. Moreover, individuals have the capacity to forge new friendships during or after stressful events, offering an additional avenue for support and coping. This underscores the dynamic nature of reciprocal friendships in not only potentially

mitigating stress within the existing relationship but also in creating opportunities for new supportive connections.

Social withdrawal and friendships

Children who avoid interacting with their peers are viewed negatively, in contrast to thosewho have mutual best friendships (Hodges et al., 1999; Rubin et al., 2004). Indeed, further evidence supporting the significance of friends during adolescence is provided by studies on socially withdrawn children. Social withdrawal, the behavioral tendency to avoid both familiar and unfamiliar peers, was initially neglected in developmental research but is now a widely studied individual characteristic in children and adolescents (Rubin & Coplan, 2004; Rubin et al., 2009). Speculatively, reciprocal friendships may play a crucial role in protecting individuals from the detrimental consequences of social isolation. This is particularly evident in studies on socially withdrawn children, a characteristic associated with an increased risk of psychopathological outcomes like social anxiety and depressive symptoms (Chronis-Tuscano et al., 2009). On the dyadic level, anxious and socially withdrawn adolescents benefit significantly from having at least one mutual friend. Friendships can reduce the risk of depression in young adolescents who are anxious and withdrawn (Bowker et al., 2021), while Markovic and Bowker (2017) found that reciprocal friendship involvement can help protect such adolescents from increasing lonelinessand depressive symptoms over time. In addition, a study by Bowker and Spencer (2010) foundthat having a friend in the same school but a different grade can serve as a protective factor against victimization for adolescent boys who exhibit anxious withdrawal. This may be because different-grade friendships can decrease the perception of isolation and anxious vulnerability inthese individuals. Importantly, the negative effects of social withdrawal during childhood and adolescence appear to be long-term, with

implications for psychological health and well-being in emerging and middle adulthood (Nelson & Millett, 2021).

Friendships and risky behavior

The influence of friendship quality on risky behavior and the reciprocal effect of risky behavior on friendship quality have been relatively understudied. According to Meyer (2011), adolescents who exhibit aggressive tendencies may face rejection from their peers and form friendships with others who are also aggressive and rejected, leading to a negative cycle of low-quality friendships (Dishion & Kavanaugh, 2003, as cited in Meyer, 2011), It can be speculated that low-quality friendships may lack reciprocity, as the negative cycle described may hinder the establishment of balanced and mutually supportive relationships. This, in turn, becomes correlated with higher rates of conduct disorder and aggressive behavior in adolescents (Melberg, 2020), highlighting the importance of reciprocal and positive aspects in fostering high-quality friendships and mitigating risky behaviors.

However, research on the relationship between friendship quality and risky behavior in adolescence has yielded mixed results. Certainly, some studies have indicated that the behavior of one individual in a friendship can act as a predictor for the behavior of the paired friend also; Maxwell at al. (2002) used peer network data which recorded behaviors and nominated reciprocal relationships, and identified from it that researchers could pick a subject from the data set at random and use that to predict the behaviors of a same-sex nominated peer, specifically, in relation to how peers influenced the initiation of cigarette and marijuana use, as well as both the initiation and cessation of alcohol and chewing tobacco use. In essence, they identified that a friend who engaged in a risky behavior increased the likelihood of the other friend doing so. However, other studies indicate that it is not a simple issue of behavioral mirroring in friendships – the *quality* of the friendship constitutes a factor of influence, though

again, the results here are contested: McElhaney et al. (2006, as cited by Meyer) identified that adolescents with more supportive and higher quality friendships were *less* likely to engage in delinquent behavior, whilst Nijhof et al. (2010) identified that it was possible for friendships to maintain either high or low quality friendship elements regardless of delinquency in one or both parties, *but* found the relationship between an adolescent's violent delinquency and vandalism and their friend's delinquency depends on the reciprocity of the friendship, with reciprocal relationships more likely to result in a positive correlation between the behavior of the two parties – and thus specifically, having a reciprocal friend who engages in property offenses increases the adolescent's risk of committing similar offenses. The inconsistent findings between Nihjhof et al. (2010) and McElhaney et al. (2006) may be methodological, due to differences in how friendship quality is measured and the failure to examine positive and negative friendship qualities separately.

It is also important to note gender differences in risky behavior. Adolescent boys are reported to engage in more risky behavior, such as drug and tobacco use (Myers, 2010) and risky driving (Rhodes & Pivik, 2011), compared to girls. Miller et al., (2010) found that adolescent boys had a significantly higher base rate of delinquent behavior, but girls and boys showed similar developmental trajectories and patterns in delinquent behavior across time. Therefore, the relationship between risky behavior and friendship quality may differ between boys and girls, given that boys may engage in risky behavior earlier than girls depending on their age.

Clearly, friendships play a major role in adolescence because they influence individual's social competence, emotional regulation, and personality traits. Furthermore, there is a positive correlation between high-quality friendships and sociability and leadership (Cairns et al., 1988; Berndt et al., 1999). High-quality friendships can also enhance a child's social network position (Ladd et al., 1997). These skills can have a long-lasting outcome into adulthood, such as

employment status, income, marriage involvement, psychological and physical well-being (Hartup, 1996; Parker, & Asher, 1993; Almquist & Brännström, 2014; Ehrlich et al., 2015; Nelson & Millett, 2021).

In summary, this chapter has emphasized the definition of friendships as voluntary relationships characterized by mutual preference and enjoyment, and the ability to engage in and maintain social interactions, yet the definition and characteristics friendships are not strict. Throughout different life stages, friendships play a vital role in fostering and sustaining an individual's development. In early phases, they promote interpersonal and social responsiveness, enhance social development, and play skills, and contribute to the development of close friendships with some children and not others. During adolescence, the importance of peer relationships sharply increases, and close dyadic friendships become a secure base that fosters comfort and security in new situations. The absence of close friendships may lead to anxiety and negatively impact emotional well-being. Furthermore, friends offer children various benefits such as validation of self-worth, emotional stability, chances for self-expression, guidance and assistance, dependable allies, companionship (Rose & Asher, 2000). We also acknowledge that while friendships can have positive impacts on mental health, they can also have negative features such as conflict, pressure, and exclusion. Positive qualities such as intimacy and support in close friendships have been associated with lower levels of social anxiety, better psychosocial adjustment, and positive self-esteem. However, negative interactions within friendships are linked to self-esteem issues, problems with school adjustment, and potential contributions to depressive symptoms, and in certain cases peers may influence children in ways that increase delinquency and risky behavior. Another significant element of friendships is their potential influence on adult romantic relationships. As cross-sex friendships become more prevalent during mid to late adolescence, they often give rise to romantic relationships within the interpersonal network of friends (Feiring, 1999). In

conclusion, the reviewed evidence strongly suggests that studying children's and adolescent's friendships and specifically reciprocal friendships is essential due to their influence on adulthood outcomes. Reciprocal friendships, characterized by mutual support and positive interactions, emerge as crucial elements in fostering positive mental health and social development of an individual. One of the mentioned benefits associated with friendships is validation of one's self-esteem. This concept will be further explored in the next chapter, delving into current perspectives on self-esteem.

2.2. Perspectives on self-esteem

Gender differences in self-esteem among children and adolescents

As identified in the section above, younger children tend to have higher self-esteem compared to adolescents (Robins et al, 2002, citing research conducted by Kling et al., 1999). This drop in self-esteem coincides with (and may be impacted by) a range of challenges which adolescents experience at this time, including the onset of reproductive maturity, theacquisition of formative thinking, decreased time with family, increased importance of friendships and romantic relationships, and the transition from primary to secondary school. These changes can make adolescents feel socially inadequate and vulnerable. Although these challenges impact upon almost all teenagers to some degree - with Bleidorn et al. (2016) identifying a cultural universality to lowered self-esteem in adolescence – a difference is observed across the genders, with Robins et al. (2002) males report higher self-esteem than females. The cross-cultural nature of Bleidorn's research thus suggests that age and gender differences in self-esteem are not solely a Western phenomenon but may actually be at least partially universal (Bleidorn et al., 2016). However, whilst male reports on self-esteem in general remain higher than females at adolescence, a longitudinal study by Gestsdottir et al. (2015) found that from ages 15 to 23, females experienced a more substantial *increase* in self-esteem compared to

males, exhibiting higher life satisfaction than men at the age of 23. For those 60 years old and over, no gender difference in self-esteem was found (Kling et al., 1999). Bleidorn et al. (2016) conclude that the connection between cultural variances in gender, age, and the combined effects of age and gender on self-esteem can be observed in a consistent manner with a wide range of socio-economic, socio-demographic, gender equality, and cultural value indicators. When examining the development of self-esteem, it is therefore important to take gender/sex into consideration.

There are several possible explanations for why girls as a collective group tend to have lower self-esteem is that athletic participation correlates positively with self-esteem for both genders, but historically, the opportunities for athletic participation have been lower for girls than for boys (Holland & Andre, 1994; Lirgg, 1991). This would explain the trend for lower self-esteem in women when measured across gender populations as a whole. On a more individual level though, Girls consistently report greater dissatisfaction with their appearance than boys, and this discrepancy is more strongly correlated with self-esteem for females than for males (Allgood-Merten et al., 1990). A possible explanation for the pronounced difference in appearance satisfaction across the adolescent period particularly is that boys tend to develop more muscle and move closer to the ideal masculine body, whereas girls tend to gain fat, moving them further from the ideal of female beauty (Harter, 1993). This divergence in physical maturation may also contribute to thediscrepancy in self-esteem between genders. Girls' perceptions of their physical attractiveness tend to decline from 4th to 11th grade, whereas boys' perceptions of their attractiveness remainstable during this period (Harter, 1993) – matching to a relatively close degree movements in relation to self-esteem.

Additionally, girls may feel less powerful, capable, and important than boys in mixed-gender groups, which are dominated by boys' influence (Maccoby, 1990). This perception may be related to the fact that possessing traditionally masculine qualities - such as power -

correlates positively with self-esteem for both boys and girls (Whitley, 1983). There are thus multiple factors that may contribute to gender/sex differences in self-esteem.

Self-esteem and adulthood outcomes

Self-esteem is an extensively researched concept that has been associated with various outcomes, such as mental and physical well-being, academic success, relationship fulfillment, and job performance (Baumeister et al., 2003). The exploration of factors that contribute to the formation and preservation of self-esteem has become an important focus of research (Baumeister et al., 2003).

Baumeister et al. (2003) state that cross-sectional studies indicate a positive correlation between self-esteem and relationship satisfaction. This could be because individuals with high self-esteem exhibit more relationship-enhancing behaviors, while those with low self-esteem exhibit more dysfunctional, relationship-damaging behaviors. For instance, people with low self-esteem are more vulnerable to rejection and tend to withdraw and reduce interpersonal closeness after conflicts, which negatively affects satisfaction in close relationships (Murray et al., 2002, as stated in Baumeister et al., 2003). On the other hand, fulfilling relationships can have a positive impact on self-esteem by enhancing one's perception of their own relational worth. This is supported by the research conducted by Andrews and Brown (1995), who found that women who reported a closer bond with their partners experienced an increase in self-esteem over the subsequent years.

According to Judge and Bono (2001), cross-sectional studies have indicated a positive association between self-esteem and job satisfaction. Meanwhile, longitudinal studies have suggested that self-esteem predicts changes in job satisfaction (Judge et al., 2000; Judge & Hurst, 2008). However, these studies have been limited by a lack of control for the prior level of job satisfaction when examining the prospective impact of self-esteem on job satisfaction.

Low self-esteem has been identified as a risk factor for depression in previous research, with consistent findings across short and long-time intervals (Metalsky et al., 1993; Orth et al., 2008; Ralph & Mineka, 1998; Roberts & Monroe, 1992; Trzesniewski et al., 2006). This association holds true for both genders and across all age groups (Orth et al., 2009). Moreover, most studies have failed to provide evidence for the reverse causal relationship (Ormel et al., 2004; Orth et al., 2008, 2009), suggesting that low self-esteem predicts depression rather than the other way around (Orth et al., 2008; Shahar & Davidson, 2003; Shahar & Henrich, 2010).

High self-esteem has been linked to better physical health, potentially due to increased social support, reduced stress, and adaptive coping behaviors (Benyamini et al., 2004; Mäkikangas et al., 2004). Longitudinal studies support the notion that self-esteem predicts future health outcomes, with low self-esteem in adolescence predicting more physical health issues in adulthood (Christie-Mizell et al., 2010; Stinson et al., 2008; Trzesniewski et al., 2006). While one study has found a reciprocal relationship between self-esteem and functional health across a two-year period, no other research has examined the possibility of health predicting changes inself-esteem (Reitzes & Mutran, 2006).

To conclude, this chapter defined self-esteem as an individual's personal and subjective assessment of their worth as a human being, and it serves as an internal psychological monitor for social belongingness, a fundamental human need. In addition, we emphasized that self-esteem changes throughout an individual's lifespan, with a significant drop during adolescence and a general trend of increasing until midlife and declining in old age. The drop in self-esteem may be greater in adolescent females compared to males. Evidently, studying self-esteem is critical because it is linked to a wide range of outcomes, including mental and physical health, academic achievement, relationship satisfaction, and job performance. Research conducted using cross-sectional studies has identified a positive association between self-esteem and both relationship satisfaction and job satisfaction. Conversely, low self-esteem has been recognized

as a risk factor for depression and physical health problems. Consequently, it is crucial for future research to delve into the factors that contribute to the formation and preservation of self-esteem.

Global self-esteem vs. domain-specific self-esteem

The definitions, characteristics, and evidence presented and reviewed in this thesis thus far pertain to global self-esteem, which is defined as "the level of global regard that one has for the self as a person" (Harter, 1993). However, the concept of domain-specific self-esteem, which refers to self-satisfaction in specific areas such as appearance, academics, and social interactions, has not been specifically addressed. Gender differences in self-esteem may vary considerably across different domains, with some domains exhibiting larger differences than others (Sondhaus et al., 2001), and these may be discussed in turn.

Two theoretical approaches to domain-specific self-esteem are most frequently forwarded within the extant literature. The first, the 'Reflected Appraisals' model, asserts that our self-esteem is primarily influenced by our relationships with others and their perceptions of us (Leary et al., 1998; Leary et al., 1995, as cited in Gentile et al., 2009). In essence, people define themselves by internalizing the beliefs of others (Mead, 1934), and our ability to undertake this process of internalization develops sharply through adolescent years, as the significance of sense of self galvanizes, the complexity for self-evaluation grows, and the exposure to and impact of the opinions of others takes on greater import (van Buuren et al., 2022). An important distinction here is between that of the 'actual' versus 'perceived' quality of the reflected appraisal; i.e – the difference between 'what you think of me', versus 'what *I think* you think of me' (Pheifer and Peake, 2012). As was identified with the phenomenon of self-esteem more generally, objective status (i.e., our measurable value or actual statements of value as from peers) may not matter as much as our own internal perception of what that status

might be. Regardless though of whether reflected appraisal operates on an actual or perceived basis, overall, Gentile et al.'s (2009) meta-analysis concludes that the reflected appraisals model highlights the importance of our interactions with others and their opinions in shaping our self-esteem.

In contrast, James (1890) forwards the 'Competencies' model, which asserts that individuals derive their self-esteem from accomplishments in specific areas. Again, adolescence proves to be a key period for the development of the self-assessment/self-evaluation needed to ascertain personal competency; Magro et al. (2019) suggest the development of skills to compare oneself to others and to accept negative feedback helps children to form more accurate assessments of their own competencies. Their longitudinal research however found that social comparisons of ability and relative successes and failures may influence short-term fluctuations in self-esteem but do not play a significant role in the long-term development of trait self-esteem during middle childhood (Magro et al., 2018). However, Gentile et al. (2009) conceptualize the model as maintaining a longer-term effect – at least in certain domains such as academics and athletics – where there is a continual, reciprocal feed-back loop; self-esteem influences the development of competency, but assessment of that competency further increases domain-specific self-esteem.

As with the Reflected Appraisals model, the distinction between the objective reality of one's competency and one's perception – accurate or not – may not be overly important for how one construct's their domain-specific self-esteem; with some theorists suggesting that a 'belief' (i.e. self-efficacy) in one's competency is sufficient to increase self-esteem (for example, Hajloo, 2014). However, the Dunning-Kruger curve (Kruger & Dunning, 1999) suggests that actual increases in competency at a certain point will dramatically lower one's perception of competency, and by extension, one's self-esteem: the initial perceived gain in competency by the individual is a fiction supported by a failure to see the full scope of the domain, but when a

certain level of competency is reached, this scope suddenly becomes apparent, and the individual recognizes that they are much less competent in the overall scheme of things than they had initially believed (Ehrlinger et al., 2008). After this initial steep drop, a much more gradual and steady increase in both actual competency and perceived competency develops, with a resulting increase in domain-specific self-esteem. Empirical evidence for the phenomenon is found in studies such as those of Serafin et al., (2022), who identified that the nurses with highest competence were actually more likely to display the lowest levels of self-esteem but were also less likely to leave the profession. Relevant to the thesis topic, the interplay of objective and perceived competency, as demonstrated by the Dunning-Kruger curve, may influence the growth and dynamics of reciprocal friendships with age, affecting how individuals navigate social relationships and self-perception over time.

Gender differences in domain-specific self-esteem

Both models of domain specific self-esteem listed above have implications for understanding how gender impacts self-esteem. Turning first to the model of Reflected Appraisal', it can be identified that there may either be real or perceived differences in the way that individuals appraise us based on gender; both with gender as a widely defined trait in itself (how do others perceive/how do *I think* others perceive my 'performance' of masculinity or femininity as a whole), but also the variation that gender gives to how other traits are perceived in their performance (i.e. how do others view my ability in X based on whether I am performing/embodying X as a man or a woman). These variations in how certain traits are appraised (or how women *believe* they are being appraised) can lead to gendered differences in domain-specific self-esteem. For instance, as was identified above, Gestsdottir et al. (2015) found that whilst women's general self-esteem reaches parity with men's and they express greater life satisfaction by the age of 23, women still experience significantly lower

scores for body image, higher levels of depression and anxiety, and more somatic complaints compared to men. The authors assert that this occurs because domain specific elements such as appearance demonstrate gendered differentiation in how they are perceived; in other words, women's physical appearance is often scrutinized and discussed, leading to negative interactions that can impact their self-esteem in this domain (Fredrickson & Roberts, 1997, as cited in Gentile et al., 2009).

Jaret et al. (2005) present an alternative explanation for the formation of self-esteem. They identify that those who believe that reflected appraisals are formed by others mostly on the basis of their sex, race, occupation, marital status or social class (i.e., role and status-based reflected appraisal) experienced lower self-esteem than those who believed that the perceptions others held on them were not tightly tied to these roles. Whilst the effect of this role/status-based reflected appraisal belief was similarly correlated for both men and women (i.e., a woman who believed they were being appraised according to role/status was as likely as a man who believed the same thing to experience lower self-esteem), overall, more women were likely to hold a belief that they were being judged by status. Thus, the effect was similar for genders, but the *prevalence* of that effect was higher for women.

Gender differences also have relevance if the competency model of self-esteem is adopted. According to the competencies model, gender differences in self-esteem within specific domains are likely to reflect the gender differences in performance within those same domains (Gentile et al., 2009). Consequently, the competencies model (and the related area of self-efficacy theory) predicts that when females tend to perform better in a particular area (such as in academics below the university level), the gender difference in that area will favor females. In essence, this implies that as females excel in certain domains, they are likely to experience a positive impact on their self-esteem within those areas, suggesting a nuanced connection between gender differences in performance and corresponding self-esteem

outcomes. This is likely to occur through two mechanisms (Gentile et al., 2009). This connection between gender differences in performance and corresponding self-esteem outcomes operates through both average competency linking and individual awareness of gender-related trends. In terms of the average, in a domain where women typically do better, the phenomenon of actual competency linking with higher domain specific self-esteem (Arshad et al., 2015) means that the *average* female in that domain is more likely to perform better in a given area, and as a result the *average* self-esteem of women – being correlated – is likely to be higher among females than males. However, setting aside though the issue of collective results and their impact on the average; on an *individual* level, individual self-esteem might be derived from knowledge about wider trends for the gender; i.e., women may be aware that their gender group performs better in a specific area, which raises their self-esteem in that area independently of their own individual performance – with Jetten et al. (2015) identifying that individuals may derive self-esteem from their belonging to a group of prestige or particular ability, regardless of their ability within that. However, this mechanism may break down if people compare themselves solely *within* gender groups by applying shifting standards (Biernat & Manis, 1994). Overall, the competencies model predicts that gender differences in self-esteem in specific domains will reflect the gender differences in performance within those domains. The competencies model predicts that gender differences in self-esteem in specific domains will align with the performance variations within those domains, shedding light on the nuanced relationship between gender, competence, and self-esteem, which has implications for the formation and dynamics of reciprocal friendships over time.

In terms of measuring domain-specific self-esteem, a range of instruments are used, with the Harter Self-Perception Profile (Harter, 2012), the Self-Description Questionnaire (Marsh, 1990), the Tennessee Self-Concept Scale (Fitts, 1965), and the Piers-Harris Self-Concept Scale (Piers-Harris, 1963) amongst the most commonly utilized scales to measure self-esteem (Butler

& Gasson, 2005). These scales incorporate ten domains, including physical appearance, athletic ability, academic performance, social acceptance, family relationships, behavioral conduct, emotional state, personal identity, overall satisfaction with oneself, and moral-ethical values (Butler & Gasson, 2005). We will now explore gender differences in various domains of self-esteem. Research suggests males tend to have significantly higher scores than females in domains associated with physical appearance (Bleirdon et al., 2016; Arens & Hasselhorn, 2014), athletic participation (Kling et al., 1999), personal satisfaction (Gentile et al., 2009). On the other hand, females tend to score higher than males in domains related to behavioral conduct (Zuckerman et al., 2016). Gentile et al. (2009) point out no significant gender differences were observed in domains like academic, social acceptance, family, and affect self-esteem. Notably, specific domains such as physical appearance, athleticism, and moral-ethical self-esteem exhibited gender differences that were more than double the magnitude observed in overall self-esteem measures (Gentile et al., 2009). A significantly lower physical appearance in females usually explained by the greater societal pressure, and due to the greater attention on females' beauty (Zuckerman et al., 2016).

Throughout all ages, males had a significant advantage in physical appearance self-esteem, which was particularly pronounced during adulthood (Gentile et al., 2009). The gender gap did not consistently increase from childhood to adulthood but showed an increase from childhood to junior high before decreasing throughout high school and college and rising again in adulthood. Hargreaves and Tiggemann (2002) and Harter (1990, 1993) found that female body satisfaction decreases during adolescence, while males' body satisfaction stabilizes or increases. Furthermore, Forbes et al. (2001) and Tiggemann and Rothblum (1997) discovered that femalebody dissatisfaction persists during adulthood. Before adulthood, the largest gender gap in self-esteem occurs in junior high school. This could be because females begin puberty earlier than males and are more concerned about their development than their male peers, who

are more delayed in their development. This is in line with the traditional theory that lower self-esteem in females is linked to the physical changes of puberty (Kearney-Cooke, 1999).

Gender differences in specific domains of self-esteem have shown variability over time. Gentile et al. (2009) conducted a meta-analysis and found that the gender disparity in appearance-specific self-esteem was not statistically significant in the 1970s. However, starting from the 1980s, the difference increased to approximately one-third of a standard deviation and remained relatively stable. This shift in gender difference may be attributed to the growing emphasis on appearance in the media during the 1980s and beyond. It is in line with the predictions of objectification theory, suggesting that increased objectification could contribute to decreased self-esteem related to appearance among women through reflected appraisals (Gentile et al., 2009).

Academic self-esteem did not show any significant gender differences (Gentile et al., 2009). This finding is consistent with research indicating that despite their superior academic performance, females may undervalue their academic abilities (Eccles et al., 1993; Hyde et al., 1990; Jacobs et al., 2002). It appears that actual competencies may be overshadowed by self-perceived or socially influenced appraisals.

Gentile et al. (2009) further found that females demonstrated significantly higher scores on behavioral conduct self-esteem, which aligns with research demonstrating that females display better behavior (Bosacki, 2003; Cole et al., 2001; Wu & Smith, 1997 as cited in Gentile et al., 2009), whereas males tend to exhibit more misbehavior (Wicks-Nelson & Israel, 2003). This gender difference seemsto become more pronounced as children age, suggesting that school experiences may reinforcethese beliefs. Females also had significantly higher scores on moral-ethical self-esteem, indicating greater religiosity among women in Christian populations, as observed in previous studies. The gender gap is most significant during high

school, which may suggest that femalesmature faster than males in their moral reasoning (Wark & Krebs, 1996). Over the years, this gender difference has increased; there was no significant gender difference in the 1970s, but the effect size now surpasses half a standard deviation.

On the personal self and self-satisfaction subscales among the four questionnaires the scores do not significantly differ from each other. All indicated males had significantly higher scores than females. These subscales are akin to measuring global self-esteem, as they also evaluate anindividual's contentment with themselves as a person. The gender disparities found by Gentile et al. (2009) are greater than those discovered in prior meta-analyses that focused on global self- esteem. However, they are comparable to the meta-analytic effect sizes for adolescents, who constituted most of the sample for these domains in this analysis. Speculatively, one could argue that an adequate and stable self-esteem, as reflected in the consistent scores across personal self and self-satisfaction subscales, may serve as a foundational element in the development and sustainability of reciprocal friendships in children.

2.3. Friendships and self-esteem

In the previous chapter, we established that friendships are voluntary relationships characterized by mutual preference and enjoyment that offer various benefits to children and adolescents such as emotional stability, self-expression, guidance, and intellectual stimulation. They also play a crucial role in providing support during adolescence, as reliance on parents decreases. Understanding the influence of childhood and adolescent friendships on adulthood outcomes, including self-esteem, is important to study. Self-esteem, on the other hand, is an individual's assessment of their worth as a human, which changes throughout their lifespan, and is linked to mental and physical health. Low self-esteem is a risk factor for depression and physical health issues, while positive correlations have been found between self-esteem and

relationship and job satisfaction. There are also age and gender related differences in self-esteem. Age and gender should therefore be taken into consideration when studying the relationship between self-esteem and other variables, such as friendship. In this chapter, we shall review the existing literature pertaining to the relationship between friendship and self-esteem in children, adolescents, and adults.

Friendships influence self-esteem

Cooley (1902), Leary and Baumeister (2000), and Mead (1934) are among the theorists who have proposed that significant relationships affect self-esteem. Whilst some of the outlined theories for self-esteem above have indicated that one's own perception of what others might be thinking about us is enough to impact self-esteem levels through a process of subjective perception of 'reflected appraisals', sociometer theories such as those proposed by Leary & Baumeister (2000) suggest that self-esteem fluctuates in response to the actual expressed approval of others, suggesting that it serves as a direct system for monitoring reactions of others to the self, and this section will discuss these theories in more depth below. As research within other sections of this study has suggested, during both childhood and – more particularly – adolescence, participation in close dyadic reciprocal relationships benefits mental health by providing a basis of support, then it follows that of all the types of interaction/relationship which provide potential approval/affirmation and thus inform self-esteem, close dyadic friendships may be amongst the most important (Alsarrani, 2022).

The relationship between friendship and the development of self-esteem can then further be understood by adding in concepts of attachment theory, which suggests that the bonds we form in relationships are closely connected to how we feel about ourselves (Bretherton & Munholland, 1999), and further, that the sense of security we develop with our main caregiver during infancy becomes a part of us and affects how we relate to others, including our friends

and romantic partners later in (Bretherton, 1992). Early close friendships thus go on to set the patterns of interaction for future friendships and relationships, and, it might be thus assumed, also impact the development and maintenance of self-esteem.

Empirical research does indeed suggest that friendships and self-esteem are linked. Numerous studies have found that children's peer relations significantly impact social and emotional development. Sullivan (1953) suggested friendships are essential in maintaining self-worth during pre-adolescent and adolescent years, and these friendships thus continue to play a crucial role in developing and maintaining self-esteem (Bishop & Inderbitzen, 1995; Buhrmester, 1990) by fostering "ego support, emotional security, and intimacy" for children (Bishop and Inderbitzen (1995, p.477), while also contributing to the development of a positive self-image. Subsequent research by Bowker et al. (2021) found that children who have at least one reciprocal friend demonstrate higher levels of self-esteem compared to those without a reciprocal friend.

Along with the *quantity* of friends, the *quality* of friendships is an essential aspect in assisting the development of self-esteem in individuals (Hartup & Stevens, 1997). Positive attributes such as prosocial behavior, closeness, and help provision are commonly associated with high-quality friendships (Stotsky & Bowker, 2018), which also tend to display lower levels of conflict, dominance, and rivalry (Berndt, 2002). However, it's worth noting that cultivating high-quality friendships benefits from having healthy conflict resolution skills, implying that while conflicts may exist, they are managed constructively (Stotsky & Bowker, 2018). Authors such as Buhrmester (1990), Keefe and Berndt (1996), and Updegraff and Obeidallah (1999) have then gone on to demonstrate that adolescents who maintain friendships with the above listed 'high quality elements' tend to exhibit better adjustment, competence, and self-esteem, along with greater levels of happiness (Demir et al., 2007; Demir &

Weitekamp, 2007), reduced social anxiety (La Greca & Lopez, 1998; La Greca & Harrison, 2005), and fewer internalizing problems (Rubin et al., 2004).

Pro-social behavior may contribute to the development of self-esteem through the formation and maintenance of positive and supportive friendships (Eisenberg., 2006; Markiewicz et al., 2001; Zuffianò et al., 2016). Key to this idea is the development of sociometer theory, referenced at the outset of this section, which has undergone significant evolution in the past 20 years and offers more nuanced insights into the role of friendships. Scholars have devoted considerable attention to sociometer theory as a key concept in psychological literature (Leary, 2005; Leary & Baumeister, 2000). According to this theory, self-esteem functions as a social thermometer that reflects the extent to which individuals feel accepted and included in the social groups that matter to them (Leary, 2005; Leary & Baumeister, 2000). The theory posits that people have an innate drive to seek social approval and establish meaningful social connections, as these were vital for human survival in the past. Unlike other theorists who have suggested that self-esteem is related to the degree of alignment between a person's real and ideal selves (Rogers, 1959), sociometer theory emphasizes the role of social connections in shaping human self-worth (Leary, 2005). According to Leary and Baumeister (2000), self-esteem functions as an indicator of how individuals perceive their acceptance and appreciation by others. Perceived acceptance by others contributes to positive social connections, ultimately enhancing an individual's self-esteem (Leary & Baumeister, 2000). Consequently, individuals strive to establish and sustain social ties to experience acceptance and view themselves as valuable.

Many scholars agree that high-quality friendships, characterized by supportiveness, intimacy, and closeness, are essential for human social life and have significant implications for psychological adjustment and self-esteem, consistent with sociometric theory (Hartup & Stevens, 1997). Friendships are reciprocal, with individuals expecting emotional support and

trust from their friends in return for providing the same. Therefore, providing care and help to friends can strengthen friendships, giving positive feedback about the relational value of the individuals involved in the relationship (Berndt, 2002; Hartup & Stevens, 1997). Keefe and Berndt (1996) found a positive correlation between positive features of friendships, such as support and intimacy, and global self-worth and social acceptance in early adolescence. Additionally, Rawlins et al. (1994) argued for the significance of friends in early adulthood for promoting positive changes in self-conceptions. Empirical studies have supported the role of friends in counteracting depression and anxiety (Cambron et al., 2010). Interestingly, Denissen et al. (2008) found that interaction quality with one's closest friend positively predicted feelings of self-worth, rather than the quantity of interaction or the time spent with the best friend.

Zuffianò et al. (2016) hypothesized that pro-sociality can positively affect self-esteem by improving the positive and supportive social bonds that people have with their friends. In a longitudinal study, Zuffianò et al. (2016) discovered that individuals who exhibited greater pro-social behavior at Time 1 demonstrated higher levels of self-esteem four years later. This relationship was found to be mediated by the quality of their friendships. Zuffianò et al. (2016) findings provide further state that social inclusion is critical for fostering a positive sense of self-worth. A cross-sectional study by Magro et al. (2019) found that having support from others, both from people around us and from within ourselves, can positively influence our self-esteem. This supports the idea that our self-esteem is connected to how supported and connected we feel socially, especially during middle childhood. This research adds to previous studies that also showed how our self-esteem can change based on the level of support we receive from others (Magro et al., 2019). Findings by Zuffianò et al. (2016) and Magro et al. (2019) further support sociometer theory of self-esteem. Gorrese and Ruggieri (2013) further emphasize that establishing close, secure, and highly reliable friendships in adolescence could potentially influence individuals to appraise their personal qualities and value more positively.

Friendships can serve as a compensatory factor in preserving self-esteem. Sherman et al. (2006) conducted a study involving young adults to explore the combined influence of friendships and sibling relationships on individuals' psychological well-being, specifically self-esteem and loneliness. According to the study, individuals who foster high-quality friendships with individuals of the same gender and experience ambivalent relationships with their siblings exhibit elevated self-esteem and reduced loneliness, implying that friendships may dysfunctional sibling relationships (Sherman et al., 2006). Studies by both Bellotti (2008) and Takasaki (2017) support this, indicating that friends often become characterized as 'chosen families' for those who experience dysfunctional relationships, particularly women, older people and LBTQ+ people. However, it is important to note that both Smorti and Ponti (2018) and Sherman et al. (2006) found positive sibling relationships were linked to positive friendships, whereas conflictual sibling relationships, marked by fighting and hostility, predicted conflictual friendships (Smorti & Ponti, 2018; Sherman et al., 2006).

Similar conclusions were reached by Li et al. (2022) in relation to the role of friendships in compensating for self-esteem deficiencies arising from upbringing. The authors discovered that when parents respond to their children's performance with a focus on failure, it has a detrimental effect on the parent-child relationship and the children's self-esteem, evoking negative emotions like disappointment and disregard for the children's need for connection. However, this type of response was found to be positively associated with the quality of friendships, with individuals turning to friendships to compensate for parental inability to provide interpersonal support (Li et al., 2022). However, whilst the above listed studies do identify the potential for friendships to provide some compensatory support in self-esteem development, Baumeister and Leary (1995) suggest that these friendships cannot *completely* substitute other significant relationships such as those forged with family or with romantic partners.

The latter finding is interesting because it combines family and romantic partners and positions them as occupying a place hierarchically higher than that of friendships in terms of self-esteem support, but in reality, much of the research suggests that the role of family and romantic relationships take on differing levels of significance at different stages of life and should be considered separately, (though this is culturally dependent, to a degree). Thus, in cultures that prioritize romantic relationships, when people reach adulthood, it is common for individuals to prioritize such relationships to fulfill their need for belongingness (Gere et al., 2013; Baumeister& Leary, 1995 as cited in Fisher et al., 2021), indicating that the relative value attached to friendships, family and romantic partners change through various life stages. However, some studies contest that friendships do in fact take a 'backseat' compared to the importance of family and romantic partners; not everyone has a romantic partner due to personal choice or circumstances, and there are many individuals who spend a significant portion of their lives being single (DePaulo, 2006, as cited in Fisher et al, 2021). Girme et al. (2022) assert that various studies have consistently shown that single individuals often exhibit superior social support functioning compared to those in romantic partnerships. This includes stronger connections with friends and siblings, as well as more abundant and higher-quality social interactions and practical assistance from friends and family. Notably, friendships may have a crucial impact on promoting the well-being of single individuals (Girme et al., 2022). Fisher et al. (2021) found that individuals who are not in a romantic partnership tend to invest more in their friendships. Moreover, these authors showed that higher levels of investment in friendships predict greater friendship quality and self-esteem over time. Interestingly, while partnered individuals experienced a decline in friendship quality as time passed, singles were able to maintain their level of friendship quality. This does not necessarily indicate that friendships by their nature provide naturally better levels of support, but instead that when a person is single they are both more able and more inclined to invest in the quality of their

friendship and work to foster its positive characteristics, and as has been established throughout this review, the positive characteristics create a friendship which deepens feelings of belongingness and has positive effects on self-esteem (Fisher et al., 2021).

Self-esteem shapes friendships

In the previous sections we have indicated friendships are crucial to the development and maintenance of self-esteem. However, some studies suggest that the relationship between self-esteem and friendships is bidirectional, with self-esteem influencing the formation and maintenance of friendships. Whilst the research in this area tends to examine *all* social relationships and the way that they might be impacted by self-esteem rather than focusing only on those of friendship (Harris & Orth, 2020), it is asserted here that examining these studies is still of value – particularly in light of assertions by authors such as Furman and Rose (2015), who indicate that although different types of social relationship do carry with them particular and distinctive characteristics, there are nonetheless a range of areas of cross-over in their features and mechanism of operation.

Two central models are forwarded which suggest self-esteem causes and shapes social relationships: the risk regulation model and self-verification theory. Turning first to the risk regulation model, it asserts that internal ideas about self-worth and deservingness of love – already formed *before* entering the relationship – impact the way in which individuals approach a relationship (romantic or friendly) and behave within it (Jeremka et al., 2011, Richter et al., 2021, also Murray et al., 2000; Murray et al., 2006, as cited in Harris & Orth, 2020). This therefore has the potential to impact the way friendships are conducted because individuals with low self-esteem may see risk of rejection in their friendships or partnerships, and therefore engage in behaviors which reduce this risk – often by being avoidant and distanced (Heimpel et al., 2006).

Conversely, self-verification theory suggests that individuals maintain a sense of self – again, developed *before* entry into a particular friendship or relationship (though possibly in part impacted by exposure to previous relationships) and then seek out verification of this sense-of-self by acting in ways which are consistent with that self-view, and which will reinforce in others a corresponding impression (Swann, 1983; Swann, Chang-Schneider, & Angulo, 2007, as cited in Cameron & Granger, 2019, also Letrig, 2010). In the case of this theory, people with low self-esteem who perceive themselves as 'introverted, less agreeable, lacking supportiveness, and having limited social skills' (Cameron et al., 2019, p. 2) are likely to behave in ways that reinforce that – by being reticent to seek out friendships (Emery et al, 2018), or by seeking friendships where the other person acts or treats the individual in a way which corresponds with this self-notion (which they achieve by what Srivastava and Beer (2005) and Zeigler-Hill et al. (2013) refer to as 'self-broadcasting'). Wherein they enter friendships where this reflected appraisal does not match with their own sense of self, Swan and Read (1981) identify that an individual is more likely to withdraw and disengage.

In this way then, an individual's self-esteem may influence their choice of friend, the way they act within that friendship, and their proclivity for remaining in that relationship, as self-esteem informs the relationship partners whether to choose to pursue a connection or form expectations for the relationship. Self-evaluations have been found to be associated with the frequency of conflicts in dating or married partners (Murray et al., 2000) and individual differences in conflict resolution strategies (Diamond et al., 2010, as cited by Harris & Orth, 2020). Specifically, individuals who are low in neuroticism and high in agreeableness, traits linked to self-esteem, are more likely to exhibit positive affect, accommodating and constructive responses to partner transgressions, and affectionate expression during conflicts. These behaviors contribute to preventing negative events from escalating and facilitate constructive resolution (Diamond et al., 2010), as outlined by Harris and Orth (2020).

As stated above, the findings regarding self-esteem and its bi-directional relationship with relationship characteristics has tended to focus on romantic engagement, or alternatively has generalized social relationships in general, combining friendship, family and romantic relationships. Only a few studies exist which pertain specifically to the bi-directional relationship of self-esteem and *friendship,* of which Azmita et al. (2005) and Bosacki et al. (2007) are identified. Azmita et al. (2005) conducted a study to explore how adolescents with varying levels of self-esteem perceive and experience friendships. Despite similar aspirations in what would constitute an ideal friendship, adolescents with low self-esteem tend to recount more negative experiences within their friendships compared to those with high self-esteem. Resolution skills within the friendship also differed based on the self-esteem exhibited by individuals; adolescents with high self-esteem demonstrate a greater tendency to address and resolve the issues, enabling them to move forward, whilst those with lower self-esteem would dwell on the negativity of the occurrence and develop a preoccupation with their own thoughts. This corresponded with Bosacki et al. (2007), who identified that self-esteem was a mediating force in friendships and particularly impacted the extent to which an individual would internalize an issue arising from friendship conflict, thus inhibiting the potential to overcome that conflict and move on with the friendship in a healthy manner. Conversely, Azmita et al. (2005) found adolescents with high self-esteem exhibit a greater belief in their ability to overcome the challenges associated with the transition compared to their low self-esteem peers.

This chapter discussed the relationship between friendships and self-esteem. It highlighted that extensive literature supports the notion that friendships are essential in maintaining self-worth during pre-adolescent and adolescent years. The chapter also emphasized high-quality reciprocal friendships have positive impacts on adolescents' social and emotional development, making them better adjusted, more competent, and happier, although the relationship between reciprocal friendships and self-esteem is less clear during pre-adolescence. Furthermore, the

chapter examines how friendships can play a compensatory role in maintaining self-esteem and how self-esteem can also influence the formation and maintenance of friendships, and perhaps help develop conflict resolution skills. Reciprocal friendships, unlike other friendships, are more emotionally supportive and intimate, thus we find them important at all developmental stages throughout an individual's lifespan. We further conclude that reciprocal friendships and self-esteem influence each other and vice versa. This reflects a positive feedback loop between the two constructs.

2.4. Research questions

The aim of this thesis is to examine how the number of reciprocal friendships changes as children grow older. Based on the reviewed literature, we hypothesize that children's friendships become more reciprocal with increasing age. In addition, this study will explore the implications of reciprocal and non-reciprocal friendships on self-esteem. We further hypothesize that children with a greater number of reciprocal friends will have higher self-esteem.

3. Method

3.1. Participants, recruitment, procedure

This study makes secondary use of data. The data were obtained by Dr. Jitka Lindová and her lab as part of a larger project examining social behavior, personality and friendship in school children. Dr. Lindová's project is ongoing, so the results have not been published. Dr. Lindová provided permission to use the data. My supervisor, Dr. Ellen Zakreski, and I performed all data analyses in this thesis exclusively for the purpose of this thesis. We recruited a total of 6 classes (Grades 2 to 8) resulting in a sample of 120 Czech children (58 girls, 62 boys) enrolled in public schools throughout Prague. The average age of participants ranged from 8 to 14 ($M_{age} = 10.625$,

SD = 2.231). Participants were recruited through cooperation with teachers and the headmasters of selected schools. Consent forms were obtained from the parents of children who agreed to participate in the study. We explained to students, parents and teachers that the purpose of this research was to examine friendships and self-esteem in children and adolescents. Students were assured of anonymity and were provided with the option not to participate in the project. All questionnaires and testswere administered by trained research assistants. The research assistants were trained to ensure that the administration of the questionnaires and tests was standardized across all participants. The research instruments used in this study include a reciprocal friendship questionnaire, and Rosenberg's self-esteem questionnaire translated into the Czech language. Each class was assessed on separate day in their respective classroom during regular school hours. Research assistants arrived at the classroom at approximately 8:00 AM, administered the self-report measure of self-esteem and other questionnaires beyond the scope of this thesis. After completing the questionnaires, each child was escorted by research assistant outside the class to a private area in the hall way and interviewed about their friendships.

3.2. Variables and Measures

Reciprocal Friendship Questionnaire

Each child was individually interviewed by research assistant to determine who their friends were in their class. During the interview the research assistant administered the reciprocal friendship questionnaire assesses the number of reciprocal friendships the participants have. Children were given a list of all students in their class and were asked to nominate their friends. A reciprocal friendship is defined as a friendship where two individuals nominate each other as friends. This measure thus takes into account the total number of classmates a child nominates as a friend, as well as the number reciprocal friends.

Self-esteem

The study employed the Rosenberg Self-Esteem Scale, Rosenberg (1965), which is a commonly used self-report tool to assess overall self-esteem. The scale comprises 10 items and participants rated each item on a five-point scale ranging from strongly disagree (1) to strongly agree (5). Example items include "On the whole, I am satisfied with myself"' and "I wish I could have more respect for myself." To generate a score, the five negatively worded items were reverse-scored and then averaged with the remaining five items (Rosenberg, 1965). In the present study, the Cronbach's α was 0.67, indicating good internal consistency. The Rosenberg Self-Esteem Scale is a widely used measure of self-esteem (Sinclair et al., 2010) and has demonstrated good validity and reliability (Schmitt & Allik, 2005).

3.3. Data analysis

To test our hypotheses, we performed general linear modelling (GLM) using MATLAB 2021b (MathWorks, Inc. Massachusetts, United States). To test our hypothesis that the number of reciprocal friendships would increase with age, we constructed a GLM regressing the number of reciprocal friendships onto age. Sex, class size, number of same-sex peers, and overall number of friends the child nominated were included as covariates. Sex was included as a covariate since males and females may differ in rate of their social development. We controlled for class size, since children in larger classes have more opportunities to form friends in their respective classes. We also controlled for number of same sex peers since children tend to prefer to form friends with same-gender peers (Bukowski & DeLay, 2020). We also controlled for the total number of peers the child nominated as a friend since children who nominate more peers have a higher probability of having a reciprocal friend. To test our hypothesis that children with more reciprocal friendships have higher self-esteem, we made a separate GLM regressing self-esteem onto the number of reciprocal friendships, with age, sex, class size, number of nominated

friendships, and number of same sex children included as covariates. We controlled for age and sex since, as I discussed in the literature review, self-esteem has been shown to vary by age and gender. For both GLM's, to test for violations of the normality assumption, we performed the Anderson-Darling test on the model residuals. To ensure that there was not excessive multicollinearity among the predictors, for each model, we calculated Variance inflation factor (VIF) for each predictor, for each model. VIF is considered acceptable if it is below 5 (Sheather, 2009).

We used G*Power (Faul et al., 2007) to determine whether we had enough participants to test our hypotheses. Specifically, to detect a moderate effect ($f^2 = 0.015$) (Cohen, 1992), with power = 0.80. For the first GLM predicting number of reciprocated friendships, with 6 predictors, a minimum sample size of 43 is required. For the second GLM predicting self-esteem, with 7 independent variables, a minimum sample size of 43 is required. With 120 individuals participating in the study, we therefore had a sufficient sample size to detect at least a moderately sized effect for both hypotheses.

4. Results

4.1. Descriptive statistics

Descriptive statistics of the measures used in the study are displayed in Table 1. The final sample consisted of 120 children (58 girls, 62 boys) with an average age of 10.625 ($SD = 2.231$). Due to a record keeping error beyond the author's control, we only have the average age of each class and not the individual ages of each student. The sample included one second grade class, two fourth grade classes, one sixth grade class, one seventh grade class, and one eighth grade class. Self-esteem data was missing from 5 participants. On average 63.3%, ($SD = 30.8\%$) of friendships were reciprocal.

4.2. Reciprocal friendships and age

To test how first hypothesis, we constructed a GLM regressing number of reciprocated friendships onto age, controlling sex, class size, number of same-sex peers, and overall number of friends the child nominated. Model residuals were normally distributed according to the Anderson-Darling test. VIF for all predictors was below 5 suggesting that multicollinearity was not excessive. Table 2 provides statistics for this GLM. As expected, the number of reciprocal friendships was significantly positively associated with total number of nominated friendships ($t[114] = 7.483$, $p < 0.001$). Contrary to our hypothesis, age was not significantly associated with number of reciprocal friendships ($t[114] = 0.851$, $p = 0.397$). Figure 1 is an adjusted response plot which shows association between number of reciprocal friends and age, controlling for the effects of sex, class size, number of same-sex peers, and overall number of friends the child nominated.

4.3. Reciprocal friendships and self-esteem

Next, to test our second hypothesis, we created another GLM regressing self-esteem onto number of reciprocated friendships, controlling for age, sex, class size, number of same-sex peers, and overall number of nominated friends. Model residuals were normally distributed according to the Anderson-Darling test. VIF for all predictors was below 5 suggesting that multicollinearity was not excessive. Table 3 provides the statistics for this GLM model.

Also contrary to our hypothesis, there was no significant association between the number of reciprocal friendships and self-esteem ($t[108] = -0.993$, $p = 0.323$). Figure 2 shows the association between number of reciprocal friends and age, controlling for the effects of age, sex, class size, number of same-sex peers, and overall number of nominated friends. Self-esteem was however significantly higher in boys compared to girls ($t[108] = 3.292$, $p = 0.001$), and was

significantly lower in older children compared to younger children ($t[108] = -4.051, p < 0.001$). While self-esteem was non-significantly associated with number of reciprocal friendships, children who nominated more friends had significantly higher self-esteem ($t[108] = 2.026, p = 0.045$).

5. Discussion

The aim of this research was to investigate how the number of reciprocal friendships develops as children grow older. We hypothesized that children's friendships become more reciprocal with increasing age. In addition, we aimed to examine the relationship between the number of reciprocal friendships on children's self-reported self-esteem. Thus, we further hypothesized that children who have a higher number of reciprocal friends have higher self-esteem. Contrary to our first hypothesis, the number of reciprocal friendships did not increase with age controlling for other variables (sex, class size, number of nominated friendships, and number of same sex children). Our next hypothesis was not confirmed either, children with more reciprocal friendships did not have significantly higher self-esteem controlling for age, sex, class size, number of nominated friendships, and number of same sex children. Nevertheless, we found that children with higher self-esteem nominated more children as their friends. Self-esteem was therefore more strongly associated with the total number of friends a child nominates, rather than the number of reciprocal friendships.

5.1. Reciprocal friendships and age

In contrast to our first hypothesis, friendships did not become more reciprocal with increasing age. In other words, the number of reciprocal friendships did not significantly differ between older children and younger while controlling for sex, class size, number of same-sex peers, and overall number of nominated friends. In this section, we will review our results in

detail. First, the author emphasizes they had sufficient statistical power to find at least a moderately sized effect of age on number of reciprocal friendships. A more likely explanation for the non-significant association between age and the number of reciprocal friendships could be our imprecise measure of age as the author only had access to the average age of each class rather than the individual age of each child in a class.

It would be beneficial to have the exact age of each individual student that includes months and years. Thus, a more precise measure of age, this includes months, may have yielded a significant association reciprocal friendships and age. Precise age (that takes into consideration differences of a few months) is important especially when we investigate children because they experience rapid changes in biology, physiology, and mental capacities (Paus, 2010). An age difference of a few months may make substantial difference in terms of social development. It is also possible that a restricted age range could have influenced the results; our sample consisted of children aged only from 8 to 14. Therefore, it could be that the number of reciprocal friendships changes significantly when you take into consideration younger children and older children.

Another possible explanation for the non-significant association between number of reciprocal friends and age is that this association is non-linear. It could be that the number of reciprocal friendships peaks at a certain age then decreases later. Furthermore, instead of a cross-sectional study design we could have used a longitudinal one. This would allow us to determine variable patterns over time. In other words, observation of changes over time in the same person makes the results more accurate. In longitudinal research, age differences are not confounded by individual differences like they are in cross-sectional studies. Longitudinal research however requires more resources than what were available for this study. In our cross-sectional design, we could have used a different method to measure friendships rather than self-report, such as behavioral observation of children during an interactive task. Through behavioral observation

techniques, we can gather a wide range of data that offers valuable insights and aids in various psychoeducational decision-making processes. Furthermore, behavioral observation is free from subjective biases and other factors that can distort self-report measures. Behavioral observation is especially useful in everyday scenarios and allows for the systematic recording of behavior (Spielberger, 2012). Other modifications to our methodology may also lead to different results. We could look at a degree of friendship (i.e., best friends) and whether it is reciprocated rather than treating friendship reciprocity as a binary value (i.e., friendships are either reciprocal or non-reciprocal).

5.2. Reciprocal friendships and self-esteem

Our second objective was to examine the relationship between the number of reciprocal friendships and self-esteem. Inconsistent with our prediction, children who had a higher number of reciprocal friends did not significantly have higher self-esteem.

Nevertheless, our other findings are consistent with the research on the development of self-esteem, particularly in relation to gender. As was identified in the literature review, other studies have shown that girls have lower self-esteem than boys, particularly during adolescence (Kling et al., 1999; Allgood-Merton et al., 1990; Maccoby, 1990; Harter, 1993; Thomas & Daubman, 2001) for reasons that have been attributed to the physical changes that occur during puberty in girls, resulting in lower self-esteem, dissatisfaction with appearance, and fewer opportunities for athletic participation (Gentile et al., 2009; Rosenberg, 1986) (alongside the fact that even when these opportunities are available for girls, those who participate in sports often face challenges in reconciling their athleticism with traditional femininity standards, which reject muscular, strong and functional bodies in favor of beauty norms which tend to operate as mechanisms directly designed to restrict the practical, physical ability and movement of a woman (Krane et al., 2004). In contrast, boys tend to have higher self-esteem,

with the gender gap being most significant during high school years (effect size of 0.21) (Kling et al., 1999; Thomas & Daubman, 2001).

Furthermore, the significantly lower self-esteem in the domain of physical appearance among females is often attributed to greater societal pressure and the increased focus on female beauty (Zuckerman et al., 2016) and the fact that in adolescence, women's physiological development tends to move *away* from the ideal (with the acquisition of greater fat), whilst men's moves *towards* it (with the acquisition of muscle) (McCabe, 2002).

The self-esteem difference we observed between girls and boys has important implications given that self-esteem is associated with a number of health and development outcomes such as better academic performance (Vaquera & Kao, 2008), lower anxiety (La Greca & Lopez, 1998; Vernberg et al., 1992). It may be useful to include additional interventions such as school programs to improve girls' self-esteem. For instance, Gentile et al. (2009) emphasize that such interventions intended to aid girls and women in avoiding the detrimental effects of low appearance self-esteem should be specifically centered on appearance rather than on general self-esteem. The core causes of undesirable results, such as eating disorders, might be immediately targeted, which would be an even faster course of action than focusing on appearance self-esteem. By using the appraisals model as a foundation, such interventions could assist girls and women in moving away from depending on media representations as universal norms and toward a more objective understanding of how others see them. This might work better than self-esteem-boosting techniques that ignore this crucial social context. "You're beautiful just for being you" is ignored by girls and women who assume that others will only find them attractive if they conform to certain standards.

We also found that younger children have higher self-esteem compared to older children. These results are in line with previous research on self-esteem, which has indicated that older children tend to have lower levels of self-esteem (Harter, 2012). As children develop the ability

to make comparisons with their peers, their self-esteem tends to decrease (Crocker & Park, 2004).

We expected children with more reciprocal friendships to have higher self-esteem, however our results did not support it. This could be because having just one reciprocal friend is enough to benefit self-esteem. For example, Bishop and Inderbitzen (1995) found that children who had at least one reciprocal friend scored higher on self-esteem measures compared to those who did not have any reciprocal friendships. Having more than one reciprocal friendship may therefore not offer significant additional benefits over having just one reciprocal friendship. Another potential explanation for the non-significant association between the number of reciprocal friends and self-esteem is that the quantity of reciprocal friendships relates to specific domains of self-image such as social self-efficacy rather than self-esteem. The concept of social self-efficacy, denoting an individual's belief in their ability to cultivate supportive social relationships that contribute to life satisfaction and positive outcomes such as positive thinking and happiness, has been extensively examined in the context of adolescents (Caprara et al., 2010; Caprara et al., 2006, as cited in Baiocco et al., 2019). Baiocco et al. (2019) findings indicate that females with lower levels of perceived social self-efficacy exhibit lower levels of happiness in comparison to males with similar perceptions. This difference may be attributed to the greater emphasis that females place on the quality, satisfaction, attachment, trust, and loyalty of their friendships, often opting for smaller, more intimate social circles, while males tend to favor larger, less intimate networks with shared interests (Baiocco et al., 2019). Dissatisfaction with social relationships is more likely to decrease the happiness of female children, as relationships hold importance irrespective of age. Rather than examining global self-esteem, as was done in this study, future research should examine whetherthe number of reciprocal friendships relates to specific domains of self-concept, such as social self-efficacy.

Alternatively, the association between self-esteem and the number of reciprocal friends could become significant during stages of development we did not assess such as later in adolescence when children become more independent from their parents and rely more on friends as confidants, particularly in early and middle adolescence (Buhrmester, 1996). Future research should thus examine the association between the number of reciprocal friendships and self-esteem across a wider range of ages.

Another explanation for the non-significant association between self-esteem and the number of reciprocal friendships concerns our measure of friendships. We only examined friendships among classmates and did not take into consideration possible children's friendships outside of the classroom because we could not confirm whether such relationships are reciprocal. It is possible that children with few reciprocal friendships within their classroom, had reciprocal friendships with children outside of their classroom, for instance while playing specific sports or while engaging in the same extracurricular club or activity (Hohmann et al., 2017).

Although the number of reciprocal friendships did not significantly predict self-esteem in this study, children with higher self-esteem tended to nominate more peers as friends. Since this study is correlational, we cannot determine causal direction. It is possible that self-esteem is not a product but rather an influence on children's self-esteem. Indeed, children who see themselves in a more positive light may be more confident to declare another child their friend. For example, children with a positive social self-image may be likely to approach and be approached by peers, whereas a child with a negative social self-image may be reluctant to initiate social contact and may even attract rejection from others (Fine, 1981). Using a longitudinal research design can contribute insight into whether self-esteem is a cause or consequence of number of friends. For instance, a longitudinal study can see if self-esteem at Time 1 predicts number of friendships at Time 2 or vice versa. We find it important to continue

studying children's friendships and its relationship to self-esteem because the ability to form and maintain reciprocal friendships helps develop self-confidence and self-esteem and vice versa. Thus, future research may identify and promote interventions and school programs for enhancing friendships among children in the classroom.

The relationship between reciprocal friendships and self-esteem could also be bidirectional which means self-esteem could influence the formation and maintenance of friendships and vice versa. Several studies reported that friendships influenced self-esteem, self-image, and happiness. For instance, friendships help children to build positive self-images while also acting as a source of ego support, emotional security, and intimacy (Boivin & Begin, 1989; Asher & Parker, 1989; Bukowski & Hoza, 1989). According to later studies, participants who had at least one reciprocal friendship performed better on self-esteem tests than participants who did not (Bishop & Inderbitzen, 1995). The caliber of friendship is just as important as the quantity of friends (Hartup & Stevens, 1997). Positive traits like prosocial conduct, intimacy, and loyalty, as well as low levels of negative traits like conflicts, dominance, and rivalry, define high-quality friendships (Berndt, 2002). According to research, teenagers who have more meaningful friendships are typically better adjusted, more capable, and have higher self-esteem (Buhrmester, 1990; Keefe and Berndt, 1996; Updegraff and Obeidallah, 1999). In addition, compared to teenagers with lower quality connections, they are happier (Demir et al., 2007; Demir & Weitekamp, 2007), less socially anxious (La Greca & Lopez, 1998; La Greca & Harrison, 2005), and have less internalized difficulties (Rubin et al., 2004).

Numerous studies indicated that friendships influence individuals' self-esteem (Bishop & Inderbitzen, 1995; Buhrmester, 1990; Keefe and Berndt, 1996). self-esteem plays a significant role in the perception, experience, and maintenance of friendships among adolescents. Azmita et al. (2005) conducted a study focusing on the relationship between self-esteem and friendships. Their findings support the notion that self-esteem predicts the formation and

maintenance of friendships. Adolescents with low self-esteem tend to recall more negative experiences within their friendships, while those with high self-esteem demonstrate a greater ability to address and resolve conflicts, allowing them to move forward. Similarly, Bosacki et al. (2007) found that self-esteem acts as a partial mediator in the connection between certain difficulties in peer relationships and internalizing problems. These researchers provide further evidence that self-esteem plays a crucial role in interpersonal dynamics. Moreover, Azmita et al. (2005) discovered that adolescents with high self-esteem possess a stronger belief in their ability to overcome challenges associated with transitions compared to their peers with low self-esteem. Thus, self-esteem not only influences friendship experiences but also acts as a facilitator in conflict resolution and coping with adversities (Azmita et al., 2005). Overall, these studies collectively highlight the importance of self-esteem in shaping the quality of peer relationships and its impact on internalizing outcome.

When interpreting the findings of the present study, some limitations and suggestions for future research need to be pointed out. The first limitation has to do with our use of self-report measures. People are often biased when they report on their own experiences (Devaux & Sassi, 2016). For example, many individuals are either consciously or unconsciously influencedby social desirability, therefore they are more likely to report experiences that are socially acceptable or preferred. However, self-report measures are time, cost-effective and we could measure many more participants compared to observation or other methods. Our measure of self- esteem has also demonstrated good validity and reliability (Schmitt & Allik, 2005). Yet, it is possible that children may have been reluctant to nominate someone as their friend in the self-report questionnaire. Therefore, we advise using an alternative measure of friendship such as behavioral observation in future research. Nonetheless, behavioral observation provides only alimited period, and specifically for our study, observing children's interactions during one singleday might not be representative of their friendship in general. In

our research we used a cross-sectional research design, however we suggest that longitudinal design may be used in the futurebecause it can contribute insight into whether self-esteem is a cause or consequence of numberof friends. For instance, a longitudinal study can see if self-esteem at Time 1 predicts number of friendships at Time 2 or vice versa. We further suggest that we should test a wider range of ages in the future, it is possible that our age range, 8 to 14 years, may have influenced the results. Lastly, we only considered friendships among classmates, however it is evident, that with the increasing age children may engage in friendships outside of their classroom. The present research could not establish whether these friendships were reciprocal.

6. Conclusion

In conclusion, this research aimed to investigate the development of reciprocal friendships in children and their relationship with self-esteem. However, the hypothesis that children's friendships become more reciprocal with age was not confirmed. Similarly, the hypothesis that children with more reciprocal friends have higher self-esteem was also not confirmed. The study did reveal that children with higher self-esteem nominate more peers as their friends, which may suggest that self-esteem is an influence on children's self-image rather than a product. The study also found that self-esteem was lower in girls and higher in boys and that younger children had higher self-esteem compared to older children. The imprecise measure of age, restricted age range, and the non-linear association between reciprocal friendships and age may have influenced the results. Future studies could use a longitudinal design, a different method to measure friendships, and observe changes in the degree of friendship and whether it is reciprocated. Future research should continue to study children's friendships and its relationship to self-esteem. Indeed, research may identify and promote interventions and school programs for enhancing friendships in children in classroom, including the knowledge of those

predictors that may contribute to forming and maintaining reciprocal friendships. We consider it essential because an ability to form and maintain reciprocal friendships benefits overall happiness, mental health and increases the sense of belonging. Friendships also help develop self-confidence and self-esteem (and vice versa) and can also reduce stress, depression, or other disorders. Thus, they potentially determine happiness and quality of life. Hence, analyzing the mechanisms behind children's friendships may help with understanding adulthood outcomes. Overall, this study provides insight into the complex nature of friendships and self-esteem in children.

References

Allen, J. P., Narr, R. K., Kansky, J., & Szwedo, D. E. (2020). Adolescent peer relationship qualitiesas predictors of long-term romantic life satisfaction. *Child Development*, *91*(1), 327–340. https://doi.org/10.1111/cdev.13193

Allgood-Merten, B., Lewinsohn, P. M., & Hops, H. (1990). Sex differences and adolescent depression. *Journal of Abnormal Psychology, 99*(1), 55–63. https://doi.org/10.1037/0021-843X.99.1.55

Almquist, Y. B., & Brännström, L. (2014). Childhood peer status and the clustering of social, economic, and health-related circumstances in adulthood. *Social Science & Medicine, 105,* 67–75. https://doi.org/10.1016/j.socscimed.2014.01.011

Alsarrani, A., Hunter, R. F., Dunne, L., & Garcia, L. (2022). Association between friendship quality and subjective wellbeing among adolescents: A systematic review. *BMC Public Health*, *22*(1). https://doi.org/10.1186/s12889-022-14776-4

Andrews, B., & Brown, G. W. (1995). Stability and change in low self-esteem: The role of psychosocial factors. *Psychological Medicine, 25(1),* 23-31.

Anthony, D. B., Holmes, J. G., & Wood, J. V. (2007). Social acceptance and self-esteem: Tuning the sociometer to interpersonal value. *Journal of personality and social psychology, 92(6),* 1024.

Antonopoulou, K., Chaidemenou, A., & Kouvava, S. (2019). Peer acceptance and friendships among primary school pupils: Associations with loneliness, self-esteem and school

engagement. *Educational Psychology in Practice, 35(3)*, 339–351.

https://doi.org/10.1080/02667363.2019.1604324

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the

twenties. *American Psychologist, 55(5),* 469–480. https://doi.org/10.1037/0003-

066X.55.5.469

Arnold, M. R. (1979). Early Child-Child Communication. *Theory Into Practice, 18(4),* 213–219.

JSTOR.

Arshad, M., Zaidi, S. M. I. H., & Mahmood, K. (2015). Self-Esteem & Academic Performance

among University Students. *Journal of education and practice, 6(1),* 156-162.

Asher, S. R., & Parker, J. G. (1989). Significance of peer relationship problems in childhood.

Social Competence in Developmental Perspective, 5–23. https://doi.org/10.1007/978-94-

009-2442-0_1

Asher, S. R., Guerry, W. B., & McDonald, K. L. (2014). Children as Friends. In G. Melton, A.

Ben-Arieh, J. Cashmore, G. Goodman, & N. Worley, *The SAGE Handbook of Child*

Research (pp. 169–194). SAGE Publications Ltd.

https://doi.org/10.4135/9781446294758.n10

Azmitia, M., Ittel, A., & Radmacher, K. (2005). Narratives of friendship and self in adolescence.

New Directions for Child and Adolescent Development, 2005(107), 23–39.

https://doi.org/10.1002/cd.119

Bagwell, C. L., Newcomb, A. F., & Bukowski, W. M. (1998). Preadolescent friendship and peer

    rejection as predictors of adult adjustment. Child *Development, 69(1),* 140–153.

    https://doi.org/10.1111/j.1467-8624.1998.tb06139.x

Baiocco, R., Verrastro, V., Fontanesi, L., Ferrara, M. P., & Pistella, J. (2019). The contributions of

    self-esteem, loneliness, and friendship to children's happiness: The roles of gender and

    age. *Child Indicators Research, 12(4),* 1413–1433. https://doi.org/10.1007/s12187-018-

    9595-7

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44(9),*

    1175–1184. https://doi.org/10.1037/0003-066X.44.9.1175

Baumeister, R. F., & Leary, M. R. (1995*).* The need to belong: Desire for interpersonal

    attachments as a fundamental human motivation. *Psychological Bulletin, 117(3*), 497–529.

    https://doi.org/10.1037/0033-2909.117.3.497

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem

    cause better performance, interpersonal success, happiness, or healthier lifestyles?

    Psychological Science in the Public Interest, 4(1), 1–44. https://doi.org/10.1111/1529-

    1006.01431

Bellotti, E. (2008a). What are friends for? elective communities of single people. *Social Networks*,

    30(4), 318–329. https://doi.org/10.1016/j.socnet.2008.07.001

Benyamini, Y., Leventhal, H., & Leventhal, E. A. (2004). Self-rated oral health as an independent

    predictor of self-rated general health, self-esteem and life satisfaction. *Social Science &*

    Medicine, 59(5), 1109–1116. https://doi.org/10.1016/j.socscimed.2003.12.021

Berndt, T. J. (2002). Friendship quality and social development. *Current directions in psychological science*, 11(1), 7-10.

Berndt, T. J. (2004). Children's Friendships: Shifts Over a Half-Century in Perspectives on Their Development and Their Effects. Merrill-*Palmer Quarterly, 50(3),* 206–223. https://doi.org/10.1353/mpq.2004.0014

Berndt, T. J., & Keefe, K. (1995). Friends' Influence on Adolescents' Adjustment to School. *Child Development, 66(5),* 1312. https://doi.org/10.2307/1131649

Berndt, T. J., Hawkins, J. A., & Jiao, Z. (1999). Influences of friends and friendships on adjustment to junior high school. *Merrill-Palmer Quarterly, 45,* 13–41.

Biernat, M., & Manis, M. (1994). Shifting standards and stereotype-based judgments. *Journal of Personality and Social Psychology*, 66(1), 5–20. https://doi.org/10.1037/0022-3514.66.1.5

Birch, S. H., & Ladd, G. W. (1996). Interpersonal relationships in the school environment and children's early school adjustment: The role of teachers and peers. In J. Juvonen & K. R. Wentzel (Eds.), *Social Motivation (1st ed.,* pp. 199–225). Cambridge University Press. https://doi.org/10.1017/CBO9780511571190.011

Bishop, J. A., & Inderbitzen, H. M. (1995). Peer acceptance and friendship: An Investigation of their relation to self-esteem. *The Journal of Early Adolescence, 15*(4), 476–489. https://doi.org/10.1177/0272431695015004005

Bleidorn, W., Arslan, R. C., Denissen, J. J. A., Rentfrow, P. J., Gebauer, J. E., Potter, J., & Gosling, S. D. (2016). Age and gender differences in self-esteem—A cross-cultural

window. *Journal of Personality and Social Psychology, 111(3),* 396–410.

https://doi.org/10.1037/pspp0000078

Blieszner, R., Roberto, K. A., Lang, F. R., & Fingerman, K. L. (2003). Friendship across the Life

Span: Reciprocity in Individual and Relationship Development. *In Growing Together:*

Personal Relationships across the Life Span (pp. 159–182). Cambridge University Press.

https://doi.org/10.1017/CBO9780511499852.007

Boisvert, S., & Poulin, F. (2016). Romantic relationship patterns from adolescence to emerging

adulthood: Associations with family and peer experiences in early adolescence. J*ournal of*

Youth and Adolescence, 45(5), 945–958. https://doi.org/10.1007/s10964-016-0435-0

Boivin, M., & Begin, G. (1989). *Peer status and self-perception among early elementary school*

children: The case of the rejected children. Child Development, 60(3), 591.

https://doi.org/10.2307/1130725

Boivin, M., & Hymel, S. (1997). Peer experiences and social self-perceptions: A sequential

model. *Developmental Psychology*, *33*(1), 135–145. https://doi.org/10.1037/0012-

1649.33.1.135

Boivin, M., Hymel, S., & Hodges, E. V. E. (2001). Toward a process view of peer rejection and

harassment. In J. Juvonen & S. Graham (Eds.), *Peer harassment in school: The plight of*

the vulnerable and victimized (pp. 265–289). The Guilford Press.

Bosacki, S. L. (2003). Psychological pragmatics in preadolescents: Sociomoral understanding,

self- worth, and school behavior. *Journal of Youth and Adolescence*, 32, 141-155.

Bosacki, S., Dane, A., Marini, Z., & Ylc-Cura. (2007). Peer relationships and internalizing problems in adolescents: Mediating role of self-esteem. *Emotional and Behavioural Difficulties, 12*(4), 261–282. https://doi.org/10.1080/13632750701664293

Bowker, A. (2004). Predicting friendship stability during early adolescence. *The Journal of Early Adolescence, 24*(2), 85–112. https://doi.org/10.1177/0272431603262666

Bowker, J. C., & Spencer, S. V. (2010). Friendship and Adjustment: A Focus on Mixed-Grade Friendships. *Journal of Youth and Adolescence, 39*(11), 1318–1329. https://doi.org/10.1007/s10964-009-9474-0

Bowker, J. C., White, H. I., & Etkin, R. G. (2021). Social withdrawal during adolescence: The role of peers. *The handbook of solitude: Psychological perspectives on social isolation, social withdrawal, and being alone,* 133-145.

Brendgen, M., Markiewicz, D., Doyle, A.-B., & Bukowski, W. M. (2001). The relations between friendship quality, ranked-friendship preference, and adolescents' behavior with their friends. *Merrill-Palmer Quarterly, 47*(3), 395–415. https://doi.org/10.1353/mpq.2001.0013

Bretherton, I. (1992). "The Origins of Attachment Theory: John Bowlby and Mary Ainsworth". *Developmental Psychology. 28* (5), 759–775.

Bretherton, I., Munholland KA (1999). "Internal Working Models in Attachment Relationships: A Construct Revisited". In Cassidy J, Shaver PR (eds.). *Handbook of Attachment: Theory, Research and Clinical Applications*. New York: Guilford Press. pp. 89–114

Brown, B. B. (1999). "You're Going Out with Who ?": Peer Group Influences on Adolescent

   Romantic Relationships. In W. Furman, B. B. Brown, & C. Feiring (Eds.), *The*

   Development of Romantic Relationships in Adolescence (1st ed., pp. 291–329). Cambridge

   University Press. https://doi.org/10.1017/CBO9781316182185.013

Buhrmester, D. (1990). Intimacy of Friendship, Interpersonal Competence, and Adjustment during

   Preadolescence and Adolescence. *Child Development, 61*(4), 1101.

   https://doi.org/10.2307/1130878

Buhrmester, D. (1996). Need fulfillment, interpersonal competence, and the developmental

   contexts of early adolescent friendship. *In The company they keep: Friendship in*

   childhood and adolescence. (pp. 158–185). Cambridge University Press.

Buhrmester, D., & Furman, W. (1987). The Development of Companionship and Intimacy. *Child*

   Development, 58(4), 1101. https://doi.org/10.2307/1130550

Bukowski, W. M., & Hoza, B. (1989). Popularity and friendship: Issues in theory, measurement,

   and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child*

   development (pp. 15–45). John Wiley & Sons.

Bukowski, W. M., & DeLay, D. (2020). Studying the same-gender preference as a defining

   feature of cultural contexts. *Frontiers in Psychology, 11*, 2020,

   https://doi.org/10.3389/fpsyg.2020.01863

Burk, W. J., & Laursen, B. (2005). Adolescent perceptions of friendship and their associations

   with individual adjustment. *International Journal of Behavioral Development*, *29*(2), 156–

   164. https://doi.org/10.1080/01650250444000342

Burton-Chellew, M. N., & Dunbar, R. I. (2015). Romance and reproduction are socially costly. *Evolutionary Behavioral Sciences, 9*(4), 229.

Cairns, R. B., Cairns, B. D., Neckerman, H. J., Gest, S. D., & Gariépy, J.-L. (1988). Social networks and aggressive behavior: Peer support or peer rejection? *Developmental Psychology, 24*(6), 815–823. https://doi.org/10.1037/0012-1649.24.6.815

Cambron, M. J., Acitelli, L. K., & Steinberg, L. (2010). When friends make you blue: The role of friendship contingent self-esteem in predicting self-esteem and depressive symptoms. *Personality & Social Psychology Bulletin, 36*, 384–397.

Cameron, J. J., & Granger, S. (2019). Does Self-Esteem Have an Interpersonal Imprint Beyond Self-Reports? A Meta-Analysis of Self-Esteem and Objective Interpersonal Indicators. *Personality and Social Psychology Review, 23*(1), 73–102. https://doi.org/10.1177/1088868318756532

Cantin, S., & Boivin, M. (2004). Change and stability in children's social network and self-perceptions during transition from elementary to junior high school. *International Journal of Behavioral Development, 28(*6), 561–570. https://doi.org/10.1080/01650250444000289

Christie-Mizell, C. A., Kimura Ida, A., & Keith, V. M. (2010). African Americans and physical Health: The consequences of self-esteem and happiness. *Journal of Black Studies*, *40*(6), 1189–1211. https://doi.org/10.1177/0021934708325457

Chronis-Tuscano, A., Degnan, K. A., Pine, D. S., Perez-Edgar, K., Henderson, H. A., Diaz, Y., Raggi, V. L., & Fox, N. A. (2009). Stable early maternal report of behavioral inhibition predicts lifetime social anxiety disorder in adolescence. *Journal of the American Academy of*

Child & Adolescent Psychiatry, *48*(9), 928–935.

https://doi.org/10.1097/CHI.0b013e3181ae09df

Clark, M. L., & Ayers, M. (1988). The role of reciprocity and proximity in junior high school

friendships. *Journal of Youth and Adolescence*, *17*(5), 403–411.

https://doi.org/10.1007/BF01537882

Cohen, P., Kasen, S., Chen, H., Hartmark, C., & Gordon, K. (2003). Variations in patterns of

developmental transmissions in the emerging adulthood period. *Developmental Psychology*,

39(4), 657–669. https://doi.org/10.1037/0012-1649.39.4.657

Cole, D. A., Maxwell, S. E., Martin, J. M., Peeke, L. G., Seroczynski, A. D., Tram, J. M., Hoffman,

K. B., Ruiz, M. D., Jacquez, F., & Maschman, T. (2001). The development of multiple

domains of child and adolescent self-concept: a cohort sequential longitudinal design. *Child

development*, *72*(6), 1723–1746. https://doi.org/10.1111/1467-8624.00375

Compas, B. E., Wagner, B. M., Slavin, L. A., & Vannatta, K. (1986). A prospective study of life

events, social support, and psychological symptomatology during the transition from high

school to college. *American Journal of Community Psychology*, *14*(3), 241–257.

https://doi.org/10.1007/BF00911173

Conduct Problems Prevention Research Group, Miller, S., Malone, P. S., & Dodge, K. A. (2010).

Developmental Trajectories of Boys' and Girls' Delinquency: Sex Differences and Links to

Later Adolescent Outcomes. *Journal of Abnormal Child Psychology*, *38*(7), 1021–1032.

https://doi.org/10.1007/s10802-010-9430-1

Connolly, J., Furman, W., & Konarski, R. (2000). The role of peers in the emergence of

    heterosexual romantic relationships in adolescence. *Child development*, *71*(5), 1395-1408.

Cooley, C. H. (1902). *Human nature and the social order*. Transaction Publishers.

Crocker, J., & Park, L. E. (2004). The Costly Pursuit of Self-Esteem. *Psychological Bulletin*,*130*(3),

    392–414. https://doi.org/10.1037/0033-2909.130.3.392

Crocker, J. (2001). Self-esteem in adulthood. *International Encyclopedia of the Social &*

    Behavioral Sciences, 13822–13826. https://doi.org/10.1016/b0-08-043076-7/01724-1

De Goede, I. H. A., Branje, S. J. T., & Meeus, W. H. J. (2009). Developmental changes and gender

    differences in adolescents' perceptions of friendships. *Journal of Adolescence*, *32*(5), 1105–

    1123. https://doi.org/10.1016/j.adolescence.2009.03.002

Demir, M., Özdemir, M., & Weitekamp, L. A. (2007). Looking to happy tomorrows with friends:

    Best and close friendships as they predict happiness. *Journal of Happiness Studies*, *8*(2),

    243–271. https://doi.org/10.1007/s10902-006-9025-2

Denissen, J. J. A., Penke, L., Schmitt, D. P., & van Aken, M. A. G. (2008). Self-esteem reactions to

    social interactions: Evidence for sociometer mechanisms across days, people, and nations.

    Journal of Personality and Social Psychology, *95*(1), 181–196. https://doi.org/10.1037/0022-

    3514.95.1.181

DePaulo, B. M., & Morris, W. L. (2006). The unrecognized stereotyping and discrimination against

    singles. *Current Directions in Psychological Science*, *15*(5), 251-254.

Donnellan, M. B., Trzesniewski, K., & Robins, R. W. (2011). *Self-esteem: Enduring issues and controversies*.

Dunn, J. (2004). *Children's friendships: The beginnings of intimacy*. Blackwell.

Eccles, J., Wigfield, A., Harold, R. D., & Blumenfeld, P. (1993). Age and gender differences in children's self-and task perceptions during elementary school. *Child development*, *64*(3), 830-847.

Ehrlich, K. B., Hoyt, L. T., Sumner, J. A., McDade, T. W., & Adam, E. K. (2015). Quality of relationships with parents and friends in adolescence predicts metabolic risk in young adulthood. *Health Psychology*, *34*(9), 896–904. https://doi.org/10.1037/hea0000213

Eisenberg, N. (2006). Prosocial Behavior. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention* (pp. 313–324). National Association of School Psychologists.

Emery, L. F., Gardner, W. L., Carswell, K. L., & Finkel, E. J. (2018). You can't see the real me: Attachment avoidance, self-verification, and self-concept clarity. *Personality and Social Psychology Bulletin, 44*(8), 1133–1146. https://doi.org/10.1177/0146167218760799

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, *39*(2), 175–191. https://doi.org/10.3758/BF03193146

Feiring, C. (1999). Other-Sex Friendship Networks and the Development of Romantic Relationships in Adolescence. *Journal of Youth and Adolescence*, *28*(4), 495–512. https://doi.org/10.1023/A:1021621108890

Fine, G. A. (1981). Impression management and preadolescent behavior. In S. Asher & J. Gottman (Eds.), *The Development of Children's Friendships* (pp. 29–50). Cambridge University Press.

Finkel, E. J., Simpson, J. A., & Eastwick, P. W. (2017). The psychology of close relationships: Fourteen core principles. *Annual Review of Psychology*, *68*, 383-411.

Finkenauer, C., Engels, R. C. M. E., Meeus, W., & Oosterwegel, A. (2002). Self and identity in early adolescence: The pains of growing up. In T. M. Brinthaupt & R. P. Lipka (Eds.), *Understanding early adolescent self and identity: Applications and interventions* (pp. 25–56).State University of New York Press.

Fisher, A. N., Stinson, D. A., Wood, J. V., Holmes, J. G., & Cameron, J. J. (2021). Singlehood and Attunement of Self-Esteem to Friendships. *Social Psychological and Personality Science*, *12*(7), 1326–1334. https://doi.org/10.1177/1948550620988460

Forbes, G. B., Adams-Curtis, L. E., Rade, B., & Jaberg, P. (2001). Body dissatisfaction in women and men: The role of gender-typing and self-esteem. *Sex Roles*, *44*, 461-484.

Fraley, R. C., & Davis, K. E. (1997). Attachment formation and transfer in young adults'close friendships and romantic relationships. *Personal Relationships*, *4*(2), 131–144. https://doi.org/10.1111/j.1475-6811.1997.tb00135.x

Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification Theory: Toward Understanding

   Women's Lived Experiences and Mental Health Risks. *Psychology of Women Quarterly*,

   21(2), 173–206. https://doi.org/10.1111/j.1471-6402.1997.tb00108.x

Furman, W., & Buhrmester, D. (1992). Age and Sex Differences in Perceptions of Networks of

   Personal Relationships. *Child Development*, *63*(1), 103. https://doi.org/10.2307/1130905

Furman, W., & Rose, A. J. (2015). Friendships, romantic relationships, and peer

   relationships. Handbook of child psychology and developmental science, 1-43.

Furman, W., Hohmann, L., & Berger, L. (2017, January 26). *Friendship | Building Lasting

   Connections*. Encyclopedia Britannica. https://www.britannica.com/topic/friendship

Gentile, B., Grabe, S., Dolan-Pascoe, B., Twenge, J. M., Wells, B. E., & Maitino, A. (2009). Gender

   differences in domain-specific self-esteem: A meta-analysis. *Review of General Psychology,*

   13(1), 34–45. https://doi.org/10.1037/a0013689

Gere, J., & Schimmack, U. (2013). When romantic partners' goals conflict: Effects on relationship

   quality and subjective well-being. *Journal of Happiness Studies*, *14*, 37-49.

Gestsdottir, S., Arnarsson, A., Magnusson, K., Arngrimsson, S. A., Sveinsson, T., & Johannsson, E.

   (2015). Gender differences in development of mental well-being from adolescence to young

   adulthood: An eight-year follow-up study. *Scandinavian Journal of Public Health*, *43*(3),

   269–275. https://doi.org/10.1177/1403494815569864

Girme, Y. U., Park, Y., & MacDonald, G. (2022). Coping or Thriving? Reviewing Intrapersonal,

   Interpersonal, and Societal Factors Associated With Well-Being in Singlehood From a

Within-Group Perspective. *Perspectives on Psychological Science*, 174569162211361.

https://doi.org/10.1177/17456916221136119

Gorrese, A., & Ruggieri, R. (2013). Peer attachment and self-esteem: A meta-analytic review. *Personality and Individual Differences*, *55*(5), 559–568. https://doi.org/10.1016/j.paid.2013.04.025

Hajloo N. (2014). Relationships between self-efficacy, self-esteem and procrastination in undergraduate psychology students. *Iranian journal of psychiatry and behavioral sciences*, *8*(3), 42–49.

Hargreaves, D., & Tiggemann, M. (2002). The role of appearance schematicity in the developmentof adolescent body dissatisfaction. *Cognitive Therapy and Research*, *26*(6), 691.

Harris, J. R. (1995). Where is the child's environment? A group socialization theory of development. *Psychological Review*, *102*(3), 458–489. https://doi.org/10.1037/0033-295X.102.3.458

Harris, M. A., & Orth, U. (2020). The link between self-esteem and social relationships: A meta-analysis of longitudinal studies. *Journal of Personality and Social Psychology*, *119*(6), 1459–1477. https://doi.org/10.1037/pspp0000265

Harris, M. A., & Orth, U. (2020). The link between self-esteem and social relationships: A meta-analysis of longitudinal studies.Journal of Personality and Social Psychology, 119(6), 1459–1477.

Harter, S. (1993). Causes and Consequences of Low Self-Esteem in Children and Adolescents. In

Harter, S. (1999a). Symbolic interactionism revisited: Potential liabilities for the self constructed in the crucible of interpersonal relationships. *Merrill-Palmer Quarterly*, *45*, 677–703.

Harter, S. (1999b). *The construction of the self: A developmental perspective.* (pp. xv, 413). Guilford Press.

Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed). Guilford Press.

Hartup, W. W. (1996). The Company They Keep: Friendships and Their Developmental Significance. *Child Development*, *67*(1), 1. https://doi.org/10.2307/1131681

Heimpel, S. A., Elliot, A. J., & Wood, J. V. (2006). Basic personality dispositions, self-esteem, and personal goals: an approach-avoidance analysis. *Journal of personality*, *74*(5), 1293–1320. https://doi.org/10.1111/j.1467-6494.2006.00410.x

Hinde, R. A., Titmus, G., Easton, D., & Tamplin, A. (1985). Incidence of "Friendship" and Behavior toward Strong Associates versus Nonassociates in Preschoolers. *Child Development*,*56*(1), 234. https://doi.org/10.2307/1130190

Hodges, E. V. E., Boivin, M., Vitaro, F., & Bukowski, W. M. (1999). The power of friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology*, *35*(1),94–101. https://doi.org/10.1037/0012-1649.35.1.94

Holland, A., & Andre, T. (1994). Athletic Participation and the Social Status of Adolescent Males and Females. *Youth & Society*, *25*(3), 388–407. https://doi.org/10.1177/0044118X94025003005

Howes, C. (1983). Patterns of Friendship. *Child Development*, *54*(4), 1041.

https://doi.org/10.2307/1129908

Howes, C., Rubin, K. H., Ross, H. S., & French, D. C. (1988). Peer Interaction of Young Children.

Monographs of the Society for Research in Child Development, *53*(1), i.

https://doi.org/10.2307/1166062

Hyde, J. S., Fennema, E., & Lamon, S. J. (1990). Gender differences in mathematics performance:a

meta-analysis. *Psychological bulletin*, *107*(2), 139.

Israel, A. C., & Ivanova, M. Y. (2002). Global and dimensional self-esteem in preadolescent and

early adolescent children who are overweight: Age and gender differences. *International*

Journal of Eating Disorders, *31*(4), 424–429. https://doi.org/10.1002/eat.10048

Jacobs, J. E., Lanza, S., Osgood, D. W., Eccles, J. S., & Wigfield, A. (2002). Changes in children's

self-competence and values: Gender and domain differences across grades one through

twelve. *Child development*, *73*(2), 509-527.

James, W. (1890). *The principles of psychology, Vol I.* Henry Holt and Co.

https://doi.org/10.1037/10538-000

Jaret, C., Reitzes, D. C., & ShapkinA, N. (2005). Reflected appraisals and self-esteem. *Sociological*

Perspectives, *48*(3), 403–419. https://doi.org/10.1525/sop.2005.48.3.403

Jetten, J., Branscombe, N. R., Haslam, S. A., Haslam, C., Cruwys, T., Jones, J. M., Cui, L., Dingle,

G., Liu, J., Murphy, S. C., Thai, A., Walter, Z., & Zhang, A. (2015). Having a lot of a good

thing: multiple important group memberships as a source of self-esteem. *PloS one*, *10*(5), e0124609. https://doi.org/10.1371/journal.pone.0124609

Joiner, T. E. (1995). The price of soliciting and receiving negative feedback: Self-verification theory as a vulnerability to depression theory. *Journal of Abnormal Psychology*, *104*(2), 364–372. https://doi.org/10.1037/0021-843X.104.2.364

Jordan, C. H., Zeigler-Hill, V., & Cameron, J. J. (2020). Self-esteem. *Encyclopedia of Personality and Individual Differences*, 4738–4748. https://doi.org/10.1007/978-3-319-24612-3_1169

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits—self-esteem, generalized self-efficacy, locus of control, and emotional stability—with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology*, *86*(1), 80–92. https://doi.org/10.1037/0021-9010.86.1.80

Judge, T. A., & Hurst, C. (2008). How the rich (and happy) get richer (and happier): Relationshipof core self-evaluations to trajectories in attaining work success. *Journal of Applied Psychology*, *93*(4), 849–863. https://doi.org/10.1037/0021-9010.93.4.849

Judge, T. A., Bono, J. E., & Locke, E. A. (2000). Personality and job satisfaction: The mediatingrole of job characteristics. *Journal of Applied Psychology*, *85*(2), 237–249. https://doi.org/10.1037/0021-9010.85.2.237

Kansky, J., Allen, J. P., & Diener, E. (2019). The Young Adult Love Lives of Happy Teenagers: The Role of Adolescent Affect in Adult Romantic Relationship Functioning. *Journal of research in personality*, *80*, 1–9. https://doi.org/10.1016/j.jrp.2019.03.006

Kearney-Cooke A. (1999). Gender differences and self-esteem. *The journal of gender-specific medicine : JGSM : the official journal of the Partnership for Women's Health at Columbia*, *2*(3), 46–52.

Keefe, K., & Berndt, T. J. (1996). Relations of Friendship Quality to Self-Esteem in Early Adolescence. *The Journal of Early Adolescence*, *16*(1), 110–129. https://doi.org/10.1177/0272431696016001007

Kling, K. C., Hyde, J. S., Showers, C. J., & Buswell, B. N. (1999). *Gender Differences in Self-Esteem: A Meta-Analysis*.

Klomsten, A. T., Skaalvik, E. M., & Espnes, G. A. (2004). Physical self-concept and sports: Do gender differences still exist?. *Sex roles*, *50*, 119-127.

Krane, V., Choi, P. Y. L., Baird, S. M., Aimar, C. M., & Kauer, K. J. (2004). Living the paradox: Female athletes negotiate femininity and muscularity. Sex Roles, 50, 315-329

Kreager, D. A., Molloy, L. E., Moody, J., & Feinberg, M. E. (2016). Friends First? The Peer Network Origins of Adolescent Dating. *Journal of Research on Adolescence*, *26*(2), 257–269.https://doi.org/10.1111/jora.12189

Kruger, J., & Dunning, D. (1999). Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, *77*(6), 1121.

La Greca, A. M., & Harrison, H. M. (2005). Adolescent Peer Relations, Friendships, and Romantic Relationships: Do They Predict Social Anxiety and Depression? *Journal of ClinicalChild & Adolescent Psychology*, *34*(1), 49–61. https://doi.org/10.1207/s15374424jccp3401_5

La Greca, A. M., & Lopez, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*, *26*(2), 83–94. https://doi.org/10.1023/A:1022684520514

Ladd, G. W., & Emerson, E. S. (1984). Shared knowledge in children's friendships. *Developmental Psychology*, *20*(5), 932–940. https://doi.org/10.1037/0012-1649.20.5.932

Ladd, G. W., & Troop-Gordon, W. (2003). The Role of Chronic Peer Difficulties in the Development of Children's Psychological Adjustment Problems. *Child Development*, *74*(5), 1344–1367. https://doi.org/10.1111/1467-8624.00611

Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (1997). Classroom Peer Acceptance, Friendship, and Victimization: Destinct Relation Systems That Contribute Uniquely to Children's School Adjustment? *Child Development*, *68*(6), 1181–1197. https://doi.org/10.1111/j.1467-8624.1997.tb01993.x

Lang, F. R., & Fingerman, K. L. (2003). *Growing Together: Personal Relationships Across the Life Span* (1st ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511499852

Laursen, B., Bukowski, W. M., Aunola, K., & Nurmi, J.-E. (2007). Friendship Moderates Prospective Associations Between Social Isolation and Adjustment Problems in Young Children. *Child Development*, *78*(4), 1395–1404. https://doi.org/10.1111/j.1467-

Leary, M. R. (2005). Sociometer theory and the pursuit of relational value: Getting to the root of self-esteem. *European Review of Social Psychology*, *16*(1), 75–111. https://doi.org/10.1080/10463280540000007

Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In *Advances in Experimental Social Psychology* (Vol. 32, pp. 1–62). Elsevier. https://doi.org/10.1016/S0065-2601(00)80003-9

Leary, M. R., & MacDonald, G. (2003). Individual differences in self-esteem: A review and theoretical integration. In *Handbook of self and identity.* (pp. 401–418). The Guilford Press.

Leary, M. R., & Tangney, J. P. (Eds.). (2003). *Handbook of self and identity*. Guilford Press.

Leary, M. R., Haupt, A. L., Strausser, K. S., & Chokel, J. T. (1998). Calibrating the sociometer: The relationship between interpersonal appraisals and the state self-esteem. *Journal of Personality and Social Psychology*, *74*(5), 1290–1299. https://doi.org/10.1037/0022-

Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, *68*(3), 518–530. https://doi.org/10.1037/0022-3514.68.3.518

LeCroy, C. W. (1988). Parent-adolescent intimacy: Impact on adolescent functioning. *Adolescence*, *23*(89), 137.

Lempers, J. D., & Clark-Lempers, D. S. (1993). A Functional Comparison of Same-Sex and Opposite-Sex Friendships during Adolescence. *Journal of Adolescent Research*, *8*(1), 89–108. https://doi.org/10.1177/074355489381007

Li, W., Tan, F., Zhou, Z., Xue, Y., Gu, C., & Xu, X. (2022). Parents' Response to Children's Performance and Children's Self-Esteem: Parent–Child Relationship and Friendship Quality as Mediators. *International Journal of Environmental Research and Public Health*, *19*(10), 6012. https://doi.org/10.3390/ijerph19106012

Lirgg, C. D. (1991). Gender Differences In Self-Confidence in Physical Activity: A Meta-Analysisof Recent Studies. *Journal of Sport and Exercise Psychology*, *13*(3), 294–310. https://doi.org/10.1123/jsep.13.3.294

Litwack, S. D., Aikins, J. W., & Cillessen, A. H. N. (2012). The Distinct Roles of Sociometric and Perceived Popularity in Friendship: Implications for Adolescent Depressive Affect and Self-Esteem. *The Journal of Early Adolescence*, *32*(2), 226–251. https://doi.org/10.1177/0272431610387142

Lodder, G. M. A., Scholte, R. H. J., Goossens, L., & Verhagen, M. (2017). Loneliness in Early Adolescence: Friendship Quantity, Friendship Quality, and Dyadic Processes. *Journal of Clinical Child & Adolescent Psychology*, *46*(5), 709–720. https://doi.org/10.1080/15374416.2015.1070352

Maccoby, E. E. (1990). Gender and relationships: A developmental account. *AmericanPsychologist*, *45*(4), 513–520. https://doi.org/10.1037/0003-066X.45.4.513

Magro, S. W., Utesch, T., Dreiskämper, D., & Wagner, J. (2019). Self-esteem development in middle childhood: Support for sociometer theory. *International Journal of Behavioral Development*, *43*(2), 118–127. https://doi.org/10.1177/0165025418802462

Major, B., Barr, L., Zubek, J., & Babey, S. H. (1999). Gender and self-esteem: A meta-analysis. In
    W. B. Swann, J. H. Langlois, & L. A. Gilbert (Eds.), Sexism and stereotypes in modern
    society: The gender science of Janet Taylor Spence. (pp. 223–253). American Psychological
    Association. https://doi.org/10.1037/10277-009

Mäkikangas, A., Kinnunen, U., & Feldt, T. (2004). Self-esteem, dispositional optimism, and health:
    Evidence from cross-lagged data on employees. *Journal of Research in Personality*, *38*(6),
    556–575. https://doi.org/10.1016/j.jrp.2004.02.001

Marion, D., Laursen, B., Zettergren, P., & Bergman, L. R. (2013). Predicting Life Satisfaction During
    Middle Adulthood from Peer Relationships During Mid-Adolescence. *Journal of Youth and
    Adolescence*, *42*(8), 1299–1307. https://doi.org/10.1007/s10964-013-9969-6

Markiewicz, D., Doyle, A. B., & Brendgen, M. (2001). The quality of adolescents' friendships:
    Associations with mothers' interpersonal relationships, attachments to parents and friends,
    andprosocial behaviors. *Journal of Adolescence*, *24*(4), 429-445.

Markovic, A., & Bowker, J. C. (2017). Friends also matter: Examining friendship adjustmentindices
    as moderators of anxious-withdrawal and trajectories of change in psychological
    maladjustment. *Developmental Psychology*, *53*(8), 1462–1473.
    https://doi.org/10.1037/dev0000343

Mason, A. (1990). Nozick on Self-esteem. *Journal of Applied Philosophy*, *7*(1), 91–98.
    http://www.jstor.org/stable/2435341

McCabe, M. P., Ricciardelli, L. A., & Finemore, J. (2002). The role of puberty, media and popularity with peers on strategies to increase weight, decrease weight and increase muscle tone among adolescent boys and girls. *Journal of psychosomatic research, 52*(3), 145-153.

McCormick, C. M., Kuo, S. I.-C., & Masten, A. S. (2011). Developmental tasks across the lifespan. *Springer US*, 117–140.

Mcelhaney, K. B., Immele, A., Smith, F. D., & Allen, J. P. (2006). Attachment organization as a moderator of the link between friendship quality and adolescent delinquency. *Attachment & Human Development, 8*(1), 33–46. https://doi.org/10.1080/14616730600585250

McNelles, L. R., & Connolly, J. A. (1999). Intimacy Between Adolescent Friends: Age and Gender Differences in Intimate Affect and Intimate Behaviors. *Journal of Research on Adolescence, 9*(2), 143–159. https://doi.org/10.1207/s15327795jra0902_2

Mead, G. H. (1934). *Mind, self, and society* (Vol. 111). Chicago: University of Chicago press.

Melberg, S. W. (2020). Conduct problems in childhood and friendship in adolescence: a longitudinal substudy in The Matter of the First Friendship study (Master's thesis).

Metalsky, G. I., Joiner, T. E., Hardin, T. S., & Abramson, L. Y. (1993). Depressive reactions to failure in a naturalistic setting: a test of the hopelessness and self-esteem theories of depression. *Journal of abnormal psychology, 102*(1), 101.

Metzler, A., & Scheithauer, H. (2017). The long-term benefits of positive self-presentation via profile pictures, number of friends and the initiation of relationships on Facebook for

adolescents' self-esteem and the initiation of offline relationships. *Frontiers in Psychology*, *8*,1981. https://doi.org/10.3389/fpsyg.2017.01981

Mufson, L. (1999). Efficacy of Interpersonal Psychotherapy for Depressed Adolescents. *Archivesof General Psychiatry*, *56*(6), 573–579. https://doi.org/10.1001/archpsyc.56.6.573

Murray, S. L., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and Social Psychology*, *78*(3), 478–498. https://doi.org/10.1037/0022-3514.78.3.478

Murray, S. L., Rose, P., Bellavia, G. M., Holmes, J. G., & Kusche, A. G. (2002). When rejection stings: How self-esteem constrains relationship-enhancement processes. *Journal of Personality and Social Psychology*, *83*(3), 556–573. https://doi.org/10.1037/0022-

Myers, L. L. (2010). Health Risk Behaviors among Adolescents in the Rural South: A Comparisonof Race, Gender, and Age. *Journal of Human Behavior in the Social Environment*, *20*(8), 1024–1037. https://doi.org/10.1080/10911359.2010.498675

Nelson, L. J., & Millett, M. A. (2021). Social Withdrawal During Emerging Adulthood. In *The Handbook of Solitude* (pp. 146–162). John Wiley & Sons, Ltd. https://doi.org/10.1002/9781119576457.ch11

Newcomb, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin*, *117*(2), 306–347. https://doi.org/10.1037/0033-2909.117.2.306

Nijhof, K. S., Scholte, R. H., Overbeek, G., & Engels, R. C. (2010). Friends' and adolescents' delinquency: The moderating role of social status and reciprocity of friendships. *Criminal Justice and Behavior*, *37*(3), 289-305.

Ormel, J., Oldehinkel, A. J., & Vollebergh, W. (2004). Vulnerability Before, During, and After a Major Depressive Episode: A 3-Wave Population-Based Study. *Archives of General Psychiatry*, *61*(10), 990. https://doi.org/10.1001/archpsyc.61.10.990

Orth, U., & Robins, R. W. (2013). Understanding the Link Between Low Self-Esteem and Depression. *Current Directions in Psychological Science*, *22*(6), 455–460. https://doi.org/10.1177/0963721413492763

Orth, U., & Robins, R. W. (2014). The Development of Self-Esteem. *Current Directions in Psychological Science*, *23*(5), 381–387. https://doi.org/10.1177/0963721414547414

Orth, U., & Robins, R. W. (2022). Is high self-esteem beneficial? revisiting a classic question. *American Psychologist*, *77*(1), 5–17. https://doi.org/10.1037/amp0000922

Orth, U., Robins, R. W., & Meier, L. L. (2009). Disentangling the effects of low self-esteem and stressful events on depression: Findings from three longitudinal studies. *Journal of Personalityand Social Psychology*, *97*(2), 307–321. https://doi.org/10.1037/a0015645

Orth, U., Robins, R. W., & Roberts, B. W. (2008). Low self-esteem prospectively predictsdepression in adolescence and young adulthood. *Journal of Personality and Social Psychology*, *95*(3), 695–708. https://doi.org/10.1037/0022-3514.95.3.695

Orth, U., Robins, R. W., & Widaman, K. F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of Personality and Social Psychology*, *102*(6), 1271–1288. https://doi.org/10.1037/a0025558

Orth, U., Trzesniewski, K. H., & Robins, R. W. (2010). Self-esteem development from young adulthood to old age: A cohort-sequential longitudinal study. *Journal of Personality and Social Psychology*, *98*(4), 645–658. https://doi.org/10.1037/a0018769

Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*, *29*(4), 611–621. https://doi.org/10.1037/0012-1649.29.4.611

Parker, J. G., & Seal, J. (1996). Forming, Losing, Renewing, and Replacing Friendships: Applying Temporal Parameters to the Assessment of Children's Friendship Experiences. *Child Development*, *67*(5), 2248. https://doi.org/10.2307/1131621

Patrick, H., Neighbors, C., & Knee, C.R. (2004). Appearance-related social comparisons: The role of contingent self-esteem and self-perceptions of attractiveness. Personality and Social Psychology Bulletin, 30, 501-514

Paus, T. (2010). Growth of white matter in the adolescent brain: Myelin or axon? *Brain and Cognition*, *72*(1), 26–35. https://doi.org/10.1016/j.bandc.2009.06.002

Pfeifer, J. H., & Berkman, E. T. (2018). The development of self and identity in adolescences and implications for a value-based choice perspective on motivated behavior. *Child Development Perspectives*, *12*(3), 158-164. https://doi.org/10.1111/cdep.12279

Poulin, F., & Pedersen, S. (2007). Developmental changes in gender composition of friendship

    networks in adolescent girls and boys. *Developmental psychology*, *43*(6), 1484.

Powers, A., Ressler, K. J., & Bradley, R. G. (2009). The protective role of friendship on the effectsof

    childhood abuse and depression. *Depression and Anxiety*, *26*(1), 46–53.

    https://doi.org/10.1002/da.20534

Psychometric Properties of the Rosenberg Self-Esteem Scale: Overall and Across Demographic

    Groups Living Within the United States. *Evaluation & the Health Professions*,*33*(1), 56–80.

    https://doi.org/10.1177/0163278709356187

Raboteg-Saric, Z., & Sakic, M. (2014). Relations of parenting styles and friendship quality to self-

    esteem, life satisfaction and happiness in adolescents. *Applied Research in Quality of Life,*

    9(3), 749–765. https://doi.org/10.1007/s11482-013-9268-0

Radmacher, K., & Azmitia, M. (2006). Are There Gendered Pathways to Intimacy in Early

    Adolescents' and Emerging Adults' Friendships? *Journal of Adolescent Research*, *21*(4),

    415–448. https://doi.org/10.1177/0743558406287402

Ralph, J. A., & Mineka, S. (1998). Attributional style and self-esteem; The prediction of emotional

    distress following a midterm exam. *Journal of Abnormal Psychology*, *107*(2), 203–215.

    https://doi.org/10.1037/0021-843X.107.2.203

Rauer, A. J., Pettit, G. S., Lansford, J. E., Bates, J. E., & Dodge, K. A. (2013). Romantic relationship

    patterns in young adulthood and their developmental antecedents. *DevelopmentalPsychology*,

    49(11), 2159–2171. https://doi.org/10.1037/a0031845

Rawlins, W. K., & Jerrome, D. (1994). Friendship matters: Communication, dialectics and the life course. *Ageing and Society*, *14*(1), 133-133.

Reitz, A. K., Zimmermann, J., Hutteman, R., Specht, J., & Neyer, F. J. (2014). How Peers Make a Difference: The Role of Peer Groups and Peer Relationships in Personality Development. *European Journal of Personality*, *28*(3), 279–288. https://doi.org/10.1002/per.1965

Reitzes, D. C., & Mutran, E. J. (2006). Self and Health: Factors That Encourage Self-Esteem and Functional Health. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *61*(1), S44–S51. https://doi.org/10.1093/geronb/61.1.S44

Rhodes, N., & Pivik, K. (2011). Age and gender differences in risky driving: The roles of positive affect and risk perception. *Accident Analysis & Prevention*, *43*(3), 923–931. https://doi.org/10.1016/j.aap.2010.11.015

Richter, J., & Finn, C. (2021). Transactions between self-esteem and perceived conflict in romantic relationships: A 5-year longitudinal study. *PLoS ONE, 16*(4), Article e0248620. https://doi.org/10.1371/journal.pone.0248620

Roberts, J. E., & Monroe, S. M. (1992). Vulnerable self-esteem and depressive symptoms: Prospective findings comparing three alternative conceptualizations. *Journal of Personality and Social Psychology*, *62*(5), 804–812. https://doi.org/10.1037/0022-3514.62.5.804

Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring Global Self-Esteem: Construct Validation of a Single-Item Measure and the Rosenberg Self-Esteem Scale.

Robins, R. W., Trzesniewski, K. H., Tracy, J. L., Gosling, S. D., & Potter, J. (2002). Global self-esteem across the life span. *Psychology and Aging*, *17*(3), 423–434. https://doi.org/10.1037/0882-7974.17.3.423

Rogers, C. (1959). A theory of therapy, personality, and interpersonal relationships, as developed in the client-centered framework. In S. Koch (Ed.), *Psychology: A study of a science* (Vol. 3, pp. 184256). New York: McGraw-Hill.

Rose, A. J., & Asher, S. R. (2000). *Close Relationships: A Sourcebook* (By pages 46-57). SAGE Publications, Inc. https://doi.org/10.4135/9781452220437

Rosenberg, M. (1965). *Rosenberg Self-Esteem Scale (RSES)* [Database record]. APA PsycTests. https://doi.org/10.1037/t01038-000

Rotheram-Fuller, E., Locke, J., Park, H., & Liou, D. D. (2022). Friendships, rejection, and standardized test scores over time. *SAGE Open*, *12*(4), 215824402211300. https://doi.org/10.1177/21582440221130051

Rubin, K. H., & Coplan, R. J. (2004). Paying Attention to and Not Neglecting Social Withdrawaland Social Isolation. *Merrill-Palmer Quarterly*, *50*(4), 506–534. https://doi.org/10.1353/mpq.2004.0036

Rubin, K. H., Bowker, J. C., McDonald, K. L., & Menzer, M. (2013). *Peer Relationships in Childhood* (P. D. Zelazo, Ed.; Vol. 1). Oxford University Press. https://doi.org/10.1093/oxfordhb/9780199958474.013.0011

Rubin, K. H., Chen, X., & Hymel, S. (1993). Socioemotional characteristics of withdrawn and aggressive children. *Merrill-Palmer Quarterly*, *39*, 518–534.

Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social Withdrawal in Childhood. *Annual Review of Psychology*, *60*(1), 141–171. https://doi.org/10.1146/annurev.psych.60.110707.163642

Sánchez-Queija, I., Oliva, A., & Parra, Á. (2017). Stability, change, and determinants of self-esteem during adolescence and emerging adulthood. *Journal of Social and Personal Relationships, 34*(8), 1277–1294. https://doi.org/10.1177/0265407516674831

Schmitt, D. P., & Allik, J. (2005). Simultaneous Administration of the Rosenberg Self-Esteem Scale in 53 Nations: Exploring the Universal and Culture-Specific Features of Global Self-Esteem. *Journal of Personality and Social Psychology*, *89*(4), 623–642. https://doi.org/10.1037/0022-3514.89.4.623

Seiffge-Krenke, I. (2003). Testing theories of romantic development from adolescence to young adulthood: Evidence of a developmental sequence. *International Journal of Behavioral Development*, *27*(6), 519–531. https://doi.org/10.1080/01650250344000145

Serafin, L., Strząska-Kliś, Z., Kolbe, G., Brzozowska, P., Szwed, I., Ostrowska, A., & Czarkowska-Pączek, B. (2022). The relationship between perceived competence and self-esteem among novice nurses - a cross-sectional study. *Annals of medicine*, *54*(1), 484–494. https://doi.org/10.1080/07853890.2022.2032820

Shahar, G., & Davidson, L. (2003). Depressive symptoms erode self-esteem in severe mental illness: A three-wave, cross-lagged study. *Journal of Consulting and Clinical Psychology*, *71*(5), 890–900. https://doi.org/10.1037/0022-006X.71.5.890

Shahar, G., & Henrich, C. C. (2010). Do depressive symptoms erode self-esteem in early adolescence?. *Self and Identity*, *9*(4), 403-415.

Sheather, S. (2009). *A Modern Approach to Regression with R*. Springer New York. https://doi.org/10.1007/978-0-387-09608-7

Sherman, A. M., Lansford, J. E., & Volling, B. L. (2006). Sibling relationships and best friendships in young adulthood: Warmth, conflict, and well-being. *Personal Relationships*, *13*(2), 151–165. https://doi.org/10.1111/j.1475-6811.2006.00110.x

Sinclair, S. J., Blais, M. A., Gansler, D. A., Sandberg, E., Bistis, K., & LoCicero, A. (2010). Psychometric properties of the Rosenberg Self-Esteem Scale: overall and across demographic groups living within the United States. *Evaluation & the health professions*, *33*(1), 56–80. https://doi.org/10.1177/0163278709356187

Smorti, M., & Ponti, L. (2018). How Does Sibling Relationship Affect Children's Prosocial Behaviors and Best Friend Relationship Quality? *Journal of Family Issues*, *39*(8), 2413–2436. https://doi.org/10.1177/0192513X18755195

Sondhaus, E. L., Kurtz, R. M., & Strube, M. J. (2001). Body Attitude, Gender, and Self-Concept: A 30-Year Perspective. *The Journal of Psychology*, *135*(4), 413–429. https://doi.org/10.1080/00223980109603708

Spielberger, C. D. (2012). *Encyclopedia of applied psychology* (1st edition). Elsevier / Academic

    Press.

Srivastava, S., & Beer, J. S. (2005). How self-evaluations relate to being liked by others: integrating

    sociometer and attachment perspectives. *Journal of personality and socialpsychology*, *89*(6),

    966.

Sroufe, L. A. (2002). From infant attachment to promotion of adolescent autonomy: Prospective,

    longitudinal data on the role of parents in development. In *Parenting and the child's world:*

    Influences on academic, intellectual, and social-emotional development. (pp. 187–202).

    Lawrence Erlbaum Associates Publishers.

Stinson, D. A., Logel, C., Zanna, M. P., Holmes, J. G., Cameron, J. J., Wood, J. V., & Spencer, S. J.

    (2008). The cost of lower self-esteem: Testing a self- and social-bonds model of

    health. *Journal of Personality and Social Psychology, 94*(3), 412–

    428. https://doi.org/10.1037/0022-3514.94.3.412

Sullivan, H. S. (1953). *The interpersonal theory of psychiatry.* (pp. xviii, 393). W W Norton & Co.

    Supplemental Material for The Independent Contributions of Social Reward and Threat

    Perceptionsto Romantic Commitment. (2013). *Journal of Personality and Social Psychology*,

    https://doi.org/10.1037/a0033874.supp

Swann Jr, W. B., & Read, S. J. (1981). Self-verification processes: How we sustain our self-

    conceptions. *Journal of Experimental Social Psychology*, *17*(4), 351-372.

Takasaki, K. (2017). Friends and family in relationship communities: The importance of friendship

    during the transition to adulthood. Michigan Family Review, 21(1).

Thomas, J. J., & Daubman, K. A. (2001a). The Relationship Between Friendship Quality and Self-Esteem in Adolescent Girls and Boys. *Sex Roles*.

Thomas, J. J., & Daubman, K. A. (2001b). The Relationship Between Friendship Quality and Self-Esteem in Adolescent Girls and Boys. *Sex Roles*.

Thompson, R. A., Flood, M. F., & Goodvin, R. (2006). Social support and developmental psychopathology. In *Developmental psychopathology: Risk, disorder, and adaptation, Vol. 3, 2nd ed.* (pp. 1–37). John Wiley & Sons, Inc.

Tiggemann, M., & Rothblum, E. D. (1997). Gender differences in internal beliefs about weight and negative attitudes towards self and others. *Psychology of Women Quarterly*, *21*(4), 581-593.

Trzesniewski, K. H., Donnellan, M. B., Moffitt, T. E., Robins, R. W., Poulton, R., & Caspi, A. (2006). Low self-esteem during adolescence predicts poor health, criminal behavior, and limited economic prospects during adulthood. *Developmental Psychology*, *42*(2), 381–390. https://doi.org/10.1037/0012-1649.42.2.381

Updegraff, K. A., & Obeidallah, D. A. (1999). Young adolescents' patterns of involvement with siblings and friends. *Social Development*, *8*, 52–69. https://doi.org/10.1111/1467-9507.00080

van Buuren, M., Sijtsma, H., Lute, N., van Rijn, R., Hollarek, M., Walsh, R. J., Lee, N. C., & Krabbendam, L. (2022). Development of the neural correlates of self- and other-referential processing across adolescence. *NeuroImage*, *252*, 119032. https://doi.org/10.1016/j.neuroimage.2022.119032

van Harmelen, A.-L., Gibson, J. L., St Clair, M. C., Owens, M., Brodbeck, J., Dunn, V., Lewis, G., Croudace, T., Jones, P. B., Kievit, R. A., & Goodyer, I. M. (2016). Friendships and family support reduce subsequent depressive symptoms in at-risk adolescents. *PLOS ONE*, *11*(5). https://doi.org/10.1371/journal.pone.0153715

Vannucci, A., Ohannessian, C. M., Flannery, K. M., De Los Reyes, A., & Liu, S. (2018). Associations between friend conflict and affective states in the daily lives of adolescents. *Journal of Adolescence*, *65*(1), 155–166. https://doi.org/10.1016/j.adolescence.2018.03.014

Vaquera, E., & Kao, G. (2008). Do you like me as much as I like you? Friendship reciprocity andits effects on school outcomes among adolescents. *Social Science Research*, *37*(1), 55–72. https://doi.org/10.1016/j.ssresearch.2006.11.002

Vernberg, E. M., Abwender, D. A., Ewell, K. K., & Beery, S. H. (1992). Social Anxiety and Peer Relationships in Early Adolescence: A Prospective Analysis. *Journal of Clinical Child Psychology*, *21*(2), 189–196. https://doi.org/10.1207/s15374424jccp2102_11

Waldrip, A. M., Malcolm, K. T., & Jensen-Campbell, L. A. (2008). With a Little Help from Your Friends: The Importance of High-quality Friendships on Early Adolescent Adjustment. *SocialDevelopment*, *17*(4), 832–852. https://doi.org/10.1111/j.1467-9507.2008.00476.x

Wark, G. R., & Krebs, D. L. (1996). Gender and dilemma differences in real-life moraljudgment. *Developmental psychology*, *32*(2), 220.

Whitley, B. E. (1983). Sex role orientation and self-esteem: A critical meta-analytic review.

Wicks-Nelson, R., & Israel, A. C. (2003). *Behavior disorders of childhood*. Prentice Hall/Pearson Education.

Wu, Y.-J., & Smith, D. E. (1997). Self-esteem of Taiwanese children. *Child Study Journal*, *27*, 1–19.

Zeigler-Hill, V. (2013). The importance of self-esteem. In V. Zeigler-Hill (Ed.), *Self-esteem* (pp. 1–20). Psychology Press. https://doi.org/10.4324/9780203587874

Zuffianò, A., Eisenberg, N., Alessandri, G., Luengo Kanacri, B. P., Pastorelli, C., Milioni, M., & Caprara, G. V. (2016). The Relation of Pro-Sociality to Self-Esteem: The Mediational Role ofQuality of Friendships: Pro-Sociality, Friendship, and Self-Esteem. *Journal of Personality*, *84*(1), 59–70. https://doi.org/10.1111/jopy.12137

Table 1. Descriptive statistics

Class	Grade	Males	Females	All Participants	Average age	Number of nominated friends	Number of reciprocal friends	Self-esteem
2B	2	12	8	20	8	3.9 (2.337)	2.3 (1.342)	19.188 (3.6)
4A	4	10	12	22	9	3.182 (2.13)	1.636 (1.59)	16.158 (3.055)
4B	4	10	14	24	9	3.167 (1.465)	1.917 (1.213)	15.793 (2.994)
6B	6	8	9	17	12	4.118 (1.616)	2.706 (1.359)	12.941 (2.680)
7A	7	14	7	21	13	4.381 (2.061)	2.476 (1.632)	14.667 (4.619)
8A	8	8	8	16	14	6.062 (2.792)	4 (1.155)	14.562 (3.098)

Note: Means are presented with standard deviations in parentheses. We did not have access tothe individual age of each student. We only had access to the average age of each class.

Table 2. *Results from the general linear model predicting number of reciprocated friends*

	Estimate	SE	t[114]	p
Intercept	1.98	1.59	1.245	0.216
Male	-0.055	0.12	0.5	0.618
Class size	-0.747	0.063	-1.187	0.238
Number of same sex classmates	-0.075	0.057	-0.333	0.740
Number of nominated friends	0.395	0.053	7.483	<0.001
Age	0.054	0.063	0.851	0.397

Note: The model had 114 degrees of freedom and the dependent variable was the number ofreciprocated friends.

Table 3. *Results from the general linear model predicting self-esteem*

	Estimate	SE	t[108]	p
Intercept	25.12	4.872	5.156	<0.001
Male	1.07	0.326	3.292	0.001
Class size	-0.218	0.188	-1.156	0.25
Number of same sex classmates	0.222	0.167	1.328	0.187
Number of nominated friends	0.385	0.190	2.026	0.045
Number of reciprocal friends	-0.273	0.276	-0.993	0.323
Age	-0.787	0.194	-4.051	<0.001

Note: The model had 108 degrees of freedom and the dependent variable was self-esteem

Figure 1. *Adjusted response plot showing the effect of age on number of reciprocal friendships controlling for sex, class size, number of same-sex peers, and overall number of nominated friends). Contrary to our hypothesis age was not significantly associated with reciprocal friendships.*
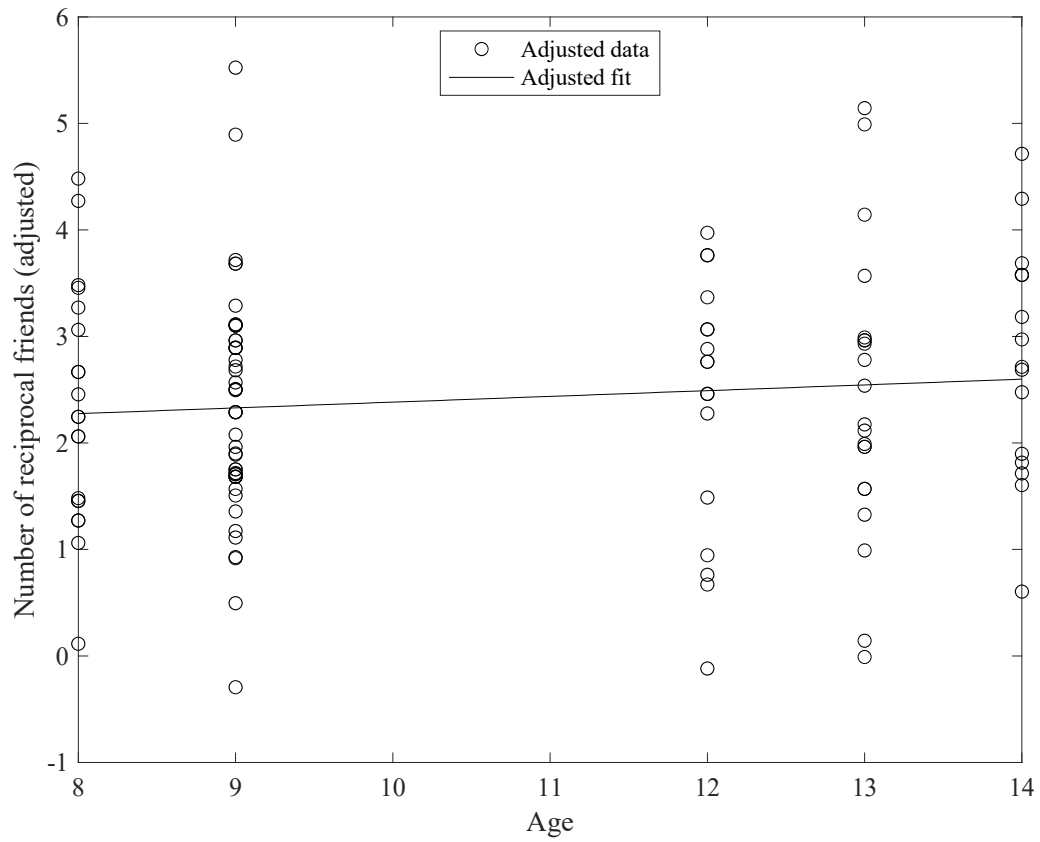
Figure 2. *Adjusted response plot showing the effect of self-esteem on reciprocal friendshipscontrolling for the number of reciprocal friendships, with age, sex, class size, number of nominated friendships, and number of same sex children). Contrary to our hypothesis the number of reciprocal friends was not significantly associated with self-esteem.*