Navigating Peer Social Dynamics in Emerging Adulthood: The mediating role of empathy in self-regulation and peer status

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Contents

Abstract

Numerous studies have shown that personality traits, such as self-regulation and empathy significantly impact social functioning, often measured as peer status in children and adolescents. However, literature on factors affecting peer status beyond adolescence is extremely limited. To bridge this gap, this study investigated the relationship between self-regulation, empathy and peer status in a group of emerging adults. The main objective was to explore the potential mediating effect of individuals' empathetic levels in the association between their self-regulation skills and how they are perceived by their peers in terms of acceptance and popularity. The sample consisted of 23 Dutch males (M_{age} = 20.8), members of a closed social network. Participants completed questionnaires examining self-regulation and empathy as well as a sociometric instrument measuring peer status. To investigate the research question, a mediation analysis with bootstrapping was performed. Results revealed that empathy did not mediate the relationship between participants' self-regulation and sociometric peer status. Our findings suggest that, in the unique phase of emerging adulthood, paths leading to higher acceptance and popularity between peers may be more complex than initially assumed. Instead of the direct link between self-regulation and empathy, peer status may be more strongly associated with context-specific skills that foster social competencies essential for this developmental stage. It is possible that more observable behaviours, such as prosocial behaviour, may be more suitable indicators of peer status during this period, potentially mediating the effect between empathy and peer status. Future research could examine these alternative links to better understand the intricate processes responsible for peer status formation during the underexplored period of emerging adulthood. Such findings could inform intervention programmes aiming to help young adults have a more seamless transition into this phase.

Layman's Abstract

Peer status refers to the extent to which one is liked and considered popular by their peers. Many studies focusing on children and adolescents have shown that specific personality characteristics can influence a person's peer status. Among these are self-regulation and empathy. Self-regulation refers to the ability to control emotions, thoughts and behaviour, while empathy is the skill of understanding and sharing the feelings of others. However, few studies have tried to test which characteristics affect peer status in the period between 18-29 years of age, called emerging adulthood. In the present study, we tested whether self-regulation affects empathy and in turn whether empathy affects peer status among a closed social network of emerging adults. The study involved 23 Dutch males, with an average age of 20.8 years, who were all part of the same closed social network. To investigate this effect, participants were asked to complete questionnaires that measure their self-regulation and empathy levels. Additionally, to measure each participant's peer status, all subjects indicated five network members that they perceived as most/least preferred and most/least popular. The results showed that one's level of self-regulation did not affect their peer status within the group. Additionally, it was found that empathy did not play a role in the relationship between self-regulation and peer status. Despite our initial

assumption, the ability to successfully self-regulate did not lead to higher empathy and in turn higher empathy was not associated with higher peer status. In conclusion, this study demonstrates that the paths defining how well-liked and popular one can be among peers in emerging adulthood, can be more complex than initially thought. Instead of a direct connection between self-regulation and empathy, peer status may be more connected with skills and characteristics that are more essential for this age group. Furthermore, more obvious positive behaviours, such as helping others, even though they spring from empathy, might more successfully affect peer status. Future research could investigate these diverse pathways to help us gain a deeper understanding of peer relationships during emerging adulthood and inform programs aiming to help young adults enter this era easily.

Keywords: self-regulation, empathy, peer status, emerging adulthood, social network

Introduction

Throughout human history, the formation of social groups has been a turning point in the trajectory of human survival and overall quality of life (Wilson, 2012). In our daily life, we continuously become parts of multiple social groups. Nevertheless, the integration of diverse personality traits, characteristics and values within these networks gives rise to complex dynamics, particularly in the context of establishing hierarchies (Anderson & Kilduff, 2009; Anderson et al., 2008; Lovaglia & Houser, 1996). Individuals experience varying levels of peer status within their social groups, representing discrepancies between the degree of social standing and social acceptance. Engels et al. (2017) describe peer status as a multifaceted construct reflecting the individual's social position within their peer group. Peer status within social networks is often assessed via sociometric data collection where all members of a group evaluate each other according to specific characteristics (Lease & Axelrod, 2001). As proposed by Moreno's sociometric theory (1934) these assessments can be based on both emotional (e.g. likeability, acceptance, preference) and reputational (e.g. perceived popularity) criteria with consensus typically found among peer group members (Cillessen & Bellmore, 2022). For instance, to measure peer acceptance, participants are often asked to nominate a number of peers in their group whom they like the most, consider their best friends, or prefer to spend time with (Cillessen & Bukowski, 2018; Ilmarinen et al., 2019). On the other hand, reputational sociometric criteria, measuring characteristics such as perceived popularity, involve peer nominations evaluating group members perceived as most/least popular. In recent literature, the social construct of peer status is operationalised as comprising two key dimensions: peer acceptance and popularity (Favre et al., 2022; Flannery & Smith, 2017; Marinucci et al., 2023; Lansu & Cillessen, 2012; van den Berg et al., 2020). Specifically, peer acceptance is an index of likability, social support and positive peer relationships (Cañas et al., 2022), while popularity measures assess a person's social reputation, visibility and influence within the peer group (Cillessen & Mayeux, 2004). Measuring peer status not only reveals the established relationship between an individual and their peer network (Marinucci et al., 2023), but also their social competence (Flannery & Smith, 2017). Social competence is an umbrella term including the necessary socio emotional skills enabling individuals to acquire and maintain social goals (Owens & Johnston-Rodriguez, 2010). A lack or incorrect application of these skills could explain why some peers are perceived as more accepted and popular, while others receive fewer nominations within the same context. Research has shown that among these skills, self-regulation and empathy emerge as paramount qualities in shaping a person's peer status (Heatherton, 2011; Meuwese et al., 2017), as they enable individuals to process available social information and respond to their environment in a socially desirable way.

Self-regulation describes a set of skills that allow us to control and adapt behavioural, emotional and cognitive responses to achieve goal-oriented behaviours (Heatherton, 2011). It incorporates higher-level cognitive abilities, widely known as executive functions, including inhibitory control, cognitive flexibility and working memory (Yan et al., 2020). Inhibitory control involves the ability to control one

behaviour to pursue another (Korucu et al., 2022), while cognitive flexibility allows us to adjust our attention, thoughts, and behaviours in response to new tasks or environmental constraints (Legare et al., 2018). Working memory helps retain and maintain information by controlling attention and shielding irrelevant stimuli, enabling monitoring of goal-achieving progress and updating necessary means (Blume et al., 2022). The critical role of self-regulation is prominently evident within our daily socio-emotional functioning, as the ability to adjust and inhibit responses according to situational or social demands can help individuals maintain positive social interactions (Eisenberg et al., 2009). Beginning from school years, children that are perceived as well regulated, are more likely to receive positive peer nominations (Eisenberg et al., 2009) and establish stronger peer relationships (Farley & Kim-Spoon, 2014). In their longitudinal study conducted with young children attending kindergarten, Wang and Feng (2024) found that a higher level of executive functioning could successfully predict peer acceptance among preschoolers. When children are able to inhibit impulsive reactions and adjust to social demands, they are less likely to engage in aggressive behaviours and can effectively apply their problem-solving and conflict management skills (Von Salisch et al., 2015; Ringoot et al., 2022). Further research supported these findings, showing that Japanese preschoolers that demonstrated higher behavioural and emotional control were more likely to be perceived as popular and had more close social relationships (Nakamichi, 2017). Together these studies reveal the fundamental contribution of self-regulation in shaping social dynamics, even from a very early age.

Interestingly, beyond its influence on peer relationships, self-regulation has also been associated with empathy. Recent studies have shown that effective self-regulation is linked to higher levels of empathy (Benita et al., 2017; Mairon et al., 2023; Yan et al., 2020). Empathy, a fundamental ingredient for social relationships, is described as the socio-emotional skill that allows individuals to understand and resonate with the emotions of others (van Noorden et al., 2015). Notably, empathy is a two-dimensional concept, including cognitive and affective empathy (Pang et al., 2022). Cognitive empathy (or perspective taking) represents a person's capacity to recognise and comprehend others' feelings (Thomson et al., 2022). Affective empathy (or empathetic concern) refers to the ability of experiencing and sharing those feelings (Cuff et al., 2016). According to the social information processing theory (SIP; Crick & Dodge, 1994) advanced cognitive skills involved in self-regulation facilitate a more effective interpretation of environmental socioemotional cues, hence elevating the recognition and comprehension of other's emotional states. This process can lead to more contextually accurate empathetic responses, crucial for maintaining positive peer relationships (Gleason et al., 2009). For example, well-regulated individuals may easily identify a nervous peer (from subtle facial expressions or body language) and then respond empathetically according to their needs (such as by providing comforting words). These types of responses help strengthen social ties. Consequently, individuals who consistently present these empathetic qualities are more likely to be perceived favourably by others (Batson & Ahmad, 2009) and engage in more pleasant social interactions (Lovett & Sheffield, 2007). This idea is supported by the findings of Wang et al. (2019), who found that middle school students who

demonstrated empathetic behaviours, tended to be more liked by their peers, as such characteristics were often associated with more prosocial behaviours and reduced aggression. Therefore, empathetic skills seem to be integral to the formation and maintenance of social networks, playing a pivotal role in social relationships and positive peer nominations (Fink & de Rosnay, 2023; Portt et al., 2020).

Peer status is a widely researched subject in child and adolescent studies. However, to our knowledge, only few studies have tried to investigate the effects of peer status during emerging adulthood (Lansu & Cillessen, 2012; Lansu et al., 2023). Emerging adulthood (18-29 years of age) is a critical period, marked by a newly gained independence (Arnett, 2014). During this new era, individuals take on new roles and responsibilities and explore their identity in multiple fields, including work, romantic relationships, and friendships (Matud et al., 2020). Emerging adults experience multiple transitions, as many might have to leave parental home, adapt to new educational contexts, change their residence or even enter parenthood (Arnett, 2000; Brito & Soares, 2023). Peer relationships play a crucial role at this transformative stage, as friends and peers provide intimacy, support and security, while individuals navigate the uncertainties of this transitional period (Barry et al., 2016). The gradual distancing from parental influences leaves room for the cultivation of stronger and more intimate relationships with their peers. They are now becoming primary attachment figures (Shaver et al., 1985), offering deep connections and a sense of belonging. It is argued that our position in the group remains influential throughout our adult life and has a considerable effect on our psychosocial functioning (Lansu & Cillessen, 2012). Hence, exploring the factors contributing to our social position during emerging adulthood is essential.

Existing studies have showed the importance of self-regulation and empathy in shaping and maintaining peer relationships (Lopes et al., 2005; Miklikowska et al., 2022; Nathania et al., 2019; Qashmer, 2023). However, most of the existing literature on self-regulation, empathy and peer status has predominantly centred around children and adolescents (Fink & de Rosnay, 2023; Portt et al., 2020; Wang et al., 2019; Willis, 2019), leaving a considerable gap in our knowledge about the social interaction of peer groups in emerging adulthood. Additionally, although research indicates their individual contributions, the direct link between self-regulation, empathy and their impact on peer status remains unclear. As mentioned above, understanding the mechanisms through which these two variables shape peer social status during emerging adulthood is essential for enriching our insights into the social dynamics formed within this developmental stage.

The current study aims to investigate the relationship between self-regulation and peer status among emerging adults and the role of empathy as mediator in this relationship. Previous research highlights the role of self-regulation in empathetic socioemotional awareness, as it enables individuals to inhibit inappropriate reactions and redirect their attention towards others. This process facilitates an enhanced comprehension of their thoughts and emotions (Yan et al., 2020), leading in turn to empathetically accurate responses in social interactions. Enhanced empathy in turn is believed to play an essential role in peer status, as empathetic individuals are more likely to form positive peer

relationships, resulting in more positive peer nominations (Blair et al., 2016). Therefore, we propose that empathy may be mediating the relationship between self-regulation and peer status through the following sequential path: increased self-regulation facilitates higher empathetic levels, which then promote higher peer status. The study's unique design, focused on a closed social network, allows it to explore the intricate social dynamics formed during the underexplored developmental stage of emerging adulthood. In this context-specific design we can see how individual personality traits and behaviour can influence a person's social position in a group, as it has been argued to have a significant effect on physical (Mundt & Zakletskaia, 2014) and mental health (Almquist et al., 2014). Thus, the present study aims to answer the following research questions: 1) Does self-regulation predict peer status among members of a closed social network during the developmental period of emerging adulthood? 2) Does empathy mediate the relationship between self-regulation and peer status? As for the first research question, it is hypothesised that self-regulation skills positively predict peer status, i.e., individuals with higher self-regulation skills are more likely to have higher peer status compared to individuals with lower self-regulation. Further, concerning the second research question, it is hypothesised that empathy mediates the relationship between self-regulation and peer status, i.e., higher self-regulation will lead to higher empathetic skills, which in turn will lead to higher peer social status.

Methods

Design

The present pilot study is a part of the larger Growing Up Together in Society (GUTS) gravitation program. The study employs a cross-sectional design, collecting quantitative data for analysis. Data collection was facilitated through self-reported measures included and administered via Qualtrics, an online survey platform. The present study has been approved by the CEP (Reference number: 2022-11-22-B., Güroglu-V1-4353. Date of approval: 18-01-2023).

Participants

This study was conducted in a closed social network, and more specifically a male-only student house consisting of 30 residents. Although the initial aim was to include all residents, seven individuals did not express the desire to participate, as the recruitment process was voluntary. Therefore, the final sample size included 23 male participants, aged between 20-25 years (M= 20.8; SD= 4.86). Inclusion criteria for this project encompassed individuals who were fluent in Dutch and members of a closed social network, more specifically a student residence, within the age range of 20 to 25. For the recruitment process the GUTS team established a collaborative communication with an external contact person who was familiar with the association. The liaison offered insightful recommendations on engagement strategies and facilitated a connection with the association. One of the heads of the association received an information letter, which was distributed among members, aiming to reach those who would be potentially interested in participating in the project.

Measures

Brief Self-Control Scale (BSCS)

Self-regulation was assessed using the Brief Self-Control Scale (BSCS), a shorter version derived from the full version of the Self-Control Scale (36-items; Tangney et al., 2004). The BSCS is a 13-item questionnaire that measures trait self-control, as a unified concept. Participants answer each item on a 5-point Likert scale spanning from 1 (not at all like me) to 5 (very much like me). Sample items include statements such as "I am good at resisting temptation" and "I have trouble concentrating". According to the guidelines provided by the author of the scale, specific items were reverse-scored to ensure accurate interpretation of responses. This step was necessary to ensure that higher scores uniformly reflect higher levels of self-regulation. Previous research shows that BSCS has high internal consistency (α = .83 and α = .85) as estimated in two samples (Tangney et al., 2004).

Interpersonal Reactivity Index (IRI)

Cognitive and affective empathy were measured via two subscales of the Interpersonal Reactivity Index (IRI; Davis, 1980): the perspective taking (cognitive empathy) and empathetic concern (affective empathy) subscales, respectively. The perspective taking subscale includes statements like "I sometimes try to understand my friends better by imagining how things look from their perspective", while the empathetic concern subscale encompasses phrases like "When peers have problems, I feel bad for them". Each subscale includes 6 items and participants were asked to provide their answers on a 5-point Likert scale ranging from 1 (not true at all) to 5 (very true). Both the perspective taking scale, and the empathetic concern scale demonstrated good internal consistency (α=. 73 and α= .73 respectively; De Corte et al., 2007). To assess overall empathy, a single composite score was calculated based on the mean scores of both the perspective taking and empathetic concern subscales. The composite empathy score ranged from 0 to 4, with higher scores indicating greater levels of empathy.

Sociometric Nominations

The measurement of peer status was performed via peer sociometric nominations. To measure peer acceptance participants were asked to nominate five individuals from their network that they perceived as: a) their best friends, b) the most-liked, c) the least-liked, d) the most preferred to spend time with. A higher score indicates a higher social acceptance within the peer group. For the popularity assessment participants nominated five peers that they perceived as the most popular and the least popular. A higher score indicates a higher social visibility within the peer group. To compare the scores each participant received in the different categories (most liked, least liked, etc.) raw sociometric data were standardised via the method of Num-noms. Nominations were added up and then the average score was subtracted for each participant. Previous literature suggests that peer nominations measure peer status with good validity and reliability (Burns & Erdley, 2011; Schreuders et al., 2019).

Procedure

On the day of the data collection, which was conducted in person, participants received a general overview of the session and an explanation about the purpose of the study. Next, participants were asked to sign the provided informed consent documents. Each participant received a piece of paper detailing

their own participant number and the code for every other person that is part of the network, to ensure full anonymity for our data. Proceeding, a QR code was presented, so that everyone was able to initiate the completion of the online questionnaires in Qualtrics. Three members of the research team supervised the data collection session, to provide clarifications and guidance with issues that might arise. Once all participants completed the online survey, the research team thanked them for their participation. The duration of the session, including explanation was approximately 60 minutes.

Statistical analysis

Data analysis was performed via the software package for Behavioural Sciences IBM SPSS version 27.0. A standard significance level of $p < 0.05$ was set. All variables were standardized by centering around their means before the analyses. Peer status was estimated by calculating a sum score of each sociometric nomination category. To ensure that high values consistently represented positive peer nominations, the subscale of least likability (who in your group is least liked) was reversed coded before the analysis. This transformation allowed for a coherent direction of the measuring scales. Empathy was operationalized as the mean score of the standardized cognitive and affective empathy subscales. Prior to conducting the main analysis, assumptions for mediation were checked. More specifically, the assumptions of normality (histograms and P-P plots), linearity (scatterplots), independence (residual plots) and homoscedasticity (scatterplots) were tested.

To test our hypotheses, a mediation analysis was conducted based on the method outlined by Baron and Kenny (1986). The analysis was performed using SPSS's PROCESS macro (Hayes, 2013), model 4, with 5000 bootstrap samples. The mediation model allows us to investigate how an independent variable (X) can influence the dependent variable (Y) through the mediation of a third variable called the mediator (M). As illustrated in Figures 1 and 2, this model involves 4 different paths. The effect of X on M (path a), the effect of M on Y (path b) and the effect of X on Y when controlling for M (path c'), which is also known as direct effect. The indirect effect is a product that combines both path a and b (a*b) and shows how X affects Y through the mediation of M (Figure 2). Additionally, mediation allows us to explore the overall effect of X on Y (path c), without taking the M into consideration, which is called, the total effect (Figure 1).

Figure 1

Total Effect of Self-Regulation on Peer Status

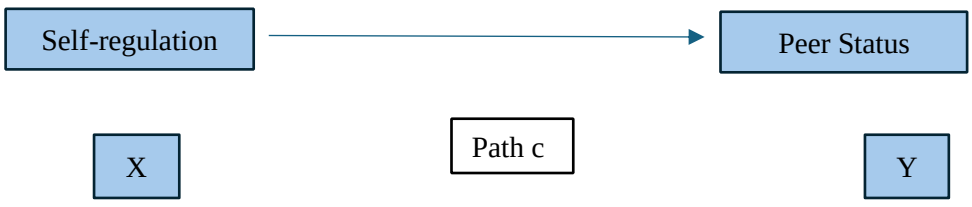
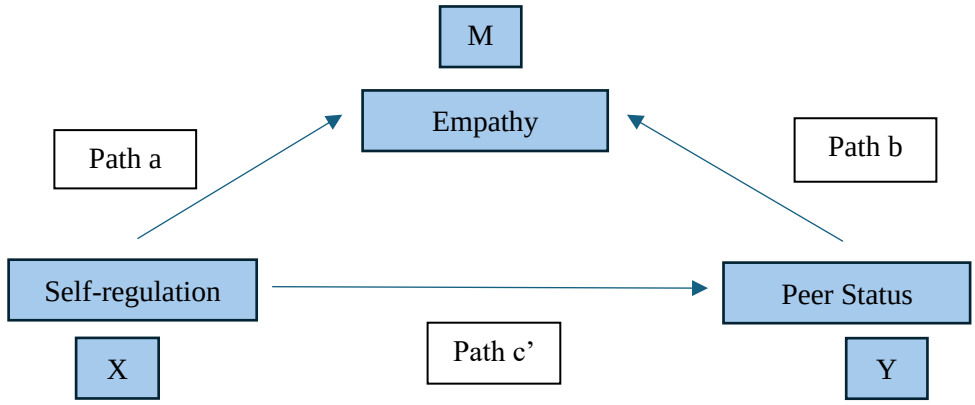


Figure 2

The Mediation Model



In the present study, several regressions were performed. Initially, to answer our first research question, the total effect of self-regulation on peer status (path c) was measured within the mediation model. Next, the analysis proceeded with the investigation of the second research question. Path a of the mediation model measured the relationship between self-regulation and empathy (direct effect), while path b tested the relationship between empathy and peer status (direct effect). Moreover, path c' measured the association between self-regulation and peer status, when controlling for empathy. Finally, the indirect effect (a*b) of self-regulation on peer status through empathy was calculated.

Results

Before conducting the main analysis, all key assumptions for mediation were tested and met. Linearity was checked using scatterplots. Visual inspection of the plots allowed us to detect clear linear patterns between variables. Additionally, the independence assumption was checked through residual plots, which illustrated random distribution with no specific patterns. Normality of residuals was assessed using histograms and P-P plots, showing approximately normal distributions. No evidence of skewness or kurtosis was revealed. Lastly, homoscedasticity was evaluated through scatterplots of residuals, demonstrating no clear patterns or funnel shapes, indicating that this assumption was not violated.

A total of 23 emerging adults (M_{age} = 20.80, *SD* = 4.86), all males, participated in this study. No females were recruited, as the selected student house was exclusively male. Of the 23 participants, 2 reported working full-time, 9 reported working part-time and 12 reported not working. A simple mediation analysis (model 4; Hayes, 2013) using the bootstrapping method with 5000 resamples was conducted to examine whether empathy mediated the relationship between self-regulation and peer status. First, the total effect (path c) of self-regulation on peer status was tested. As illustrated in Table 1, our findings indicated that self-regulation was not a significant predictor for peer status (b = 3.63, $t(21)$ = .82, p = .419) thus leading us to reject the first hypothesis. Next, to test the second hypothesis,

the remaining paths were explored. The analysis revealed that the effect of self-regulation on empathy (path a) was not significant (b = -.15, t(21) = -.62, p = .542), indicating that variations of self-regulation did not successfully predict changes in empathy levels within the members of the closed social network. Additionally, the effect of empathy on peer status (path b) was also found not significant (b = -.93, t(20) = -.22, p = .826), meaning that participants' empathetic levels were not associated with their position in the peer group. Next, we tested the direct effect of self-regulation on peer status, while controlling for empathy (path c'). The analysis did not reveal significant results (b = 3.50, t(20) = .77, p = .451), suggesting that self-regulation even when considering the potential mediating role of empathy did not predict peer status within the group. Similarly, the bootstrap analysis revealed that the indirect effect of self-regulation on peer status via the mediation of empathy (a*b) was not significant (b = .14, 95% CI [-5.60, 2.58]), as the 95% confidence interval included 0. Thus, no mediation effect was present in our model, leading to the rejection of our second hypothesis. Figure 3 provides a visual representation of the mediation outcomes. Overall, our results demonstrated that neither self-regulation nor self-regulation via empathy can adequately predict peer status in a closed social network among emerging adults.

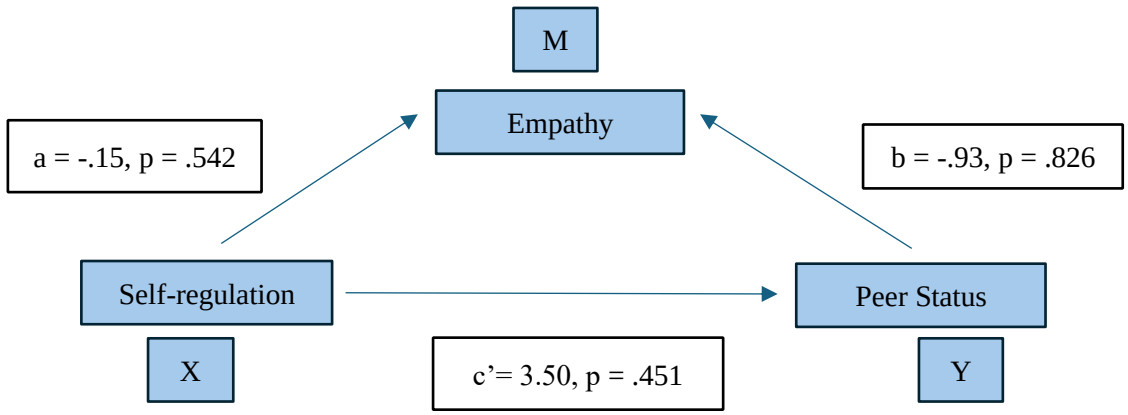
Table 1

Mediation Analysis Results for Paths c, a, b, c', ab

Paths	*b*	*SE*	*t*	*p*	*LLCI*	*ULCI*
Path c	3.63	4.40	0.82	0.419	-5.52	12.79
Path a	-0.15	0.23	-0.62	0.542	-0.63	0.34
Path b	-0.93	4.20	-0.22	0.826	-9.70	7.83
Path c'	3.50	4.55	0.77	0.451	-5.99	12.98
a*b	0.14	1.94			-5.60	2.58

Figure 3

Mediation Analysis Results



Discussion

This study explored the association between self-regulation and peer status among emerging adults, members of a closed social network, and examined whether empathy mediated this relationship. A comprehensive grasp of these peer dynamics is crucial, as literature shows that peer status is an important indicator of one's social competence (Cillessen & Bellmore, 2022). This skill, in turn, is associated with a number of positive outcomes across various domains, including young adults' education and personal growth (Tanner, 2016). In the present study, it was expected that one's ability to adequately self-regulate would predict a higher peer status within the group. Additionally, empathy was expected to mediate the relationship between self-regulation and peer status, indicating that enhanced empathetic skills associated with higher self-regulation would predict a higher social position in the peer group. However, our findings did not support these hypotheses. No significant relationship was revealed between self-regulation and peer status. Moreover, the hypothesised mediating effect of empathy was also not confirmed.

Self-regulation and peer status

As mentioned above, no relationship was found between self-regulation and peer status. This contradicts earlier studies showing that individuals with enhanced self-regulatory mechanisms were more likely to receive positive peer nominations (Hladik et al., 2024; Perren et al., 2006; Wang & Feng, 2024). One potential explanation for these results could lie in the developmental changes characterising emerging adulthood. Shifting into new social contexts and adult roles (i.e. when entering college or employment), may broaden emerging adults' views on what characteristics shape peer acceptance and popularity, making the internal process of self-regulation less central. This is consistent with the study of Lansu and Cillessen (2012) which showed that emerging adults may prioritise different attributes as more important. They found that prosocial leadership, attractiveness, successfulness, respectfulness and fitting-in, emerged as significant predictors of peer status among college students. These findings may suggest that social standing in emerging adulthood could be influenced by a more complex interplay of personal characteristics, social skills and achievements than initially speculated. Even though self-regulatory processes are essential to become and maintain part of a social group (Baumeister & Vohs, 2007), they may not be sufficient to predict peer status in a social network of emerging adults, indicating a weak or a potentially non-existent relationship. However, for the present outcome, it is important to consider an alternative possible explanation, which could be attributed to the methodological choices of this study. Our sample was characterised by contextual homogeneity, since all participants were residents of the same student house. This condition may have hindered our ability to detect an existing relationship between self-regulation and peer status, as these results may not be generalizable beyond this specific social context. The lack of participants from various social settings (i.e. university, work), may have obscured effects that could otherwise have been observed. This is particularly relevant for emerging adults, as in this developmental stage they tend to participate and transition through multiple

diverse social contexts (Arnett, 2014). Including a more expanded contextual perspective may uncover significant findings on how self-regulation relates to peer status across different social environments.

Mediating effect of empathy

Contrary to the initial hypothesis, empathy did not mediate the relationship between self-regulation and peer status. Moreover, the direct effects between self-regulation and empathy as well as empathy and peer status were also found non-significant. One plausible explanation for the non-significant direct effect of self-regulation on empathy could lie in the nature of the tool used to measure it. Empathy was assessed using a composite score that integrated both measurements of cognitive and affective empathy. Considering that these facets reflect different dimensions of empathy, previous studies have highlighted the importance of studying and interpreting them as distinct constructs (Davis 1983; Li et al., 2024). The merging of these two scales may have concealed potential relationships between self-regulation and each of the empathy components. For instance, as indicated by several studies (Sun et al., 2022; Thompson et al., 2022), self-regulation may be more closely related to cognitive than affective empathy. Notably, this finding is further supported by literature showing that cognitive empathy is connected to multiple executive functioning components necessary for self-regulatory processes, such as inhibitory control, working memory, and cognitive flexibility. On the other hand, affective empathy engages primarily in inhibitory control (Schulte et al., 2022). Consequently, these observations would be quite difficult to detect within this composite score. In the future, exploring the effects of self-regulation on cognitive and affective empathy separately could facilitate the formation of a more detailed picture regarding the interactions of these factors. Moreover, the failure to detect a relationship between self-regulation and empathy could stem from gender differences in empathetic abilities. A growing body of evidence shows that women tend to express and report higher levels of empathy compared to men, a phenomenon that is often rooted in the diverse socialisation processes taking place since early childhood (Christov-Moore et al., 2014; Trentini et al., 2022). Throughout their upbringing, girls are often encouraged to develop a number of traits aligning with empathy, such as being nurturing and caring (Brody, 1999). On the other hand, gender norms for boys frequently encourage the suppression of those characteristics resulting in less engagement with empathetic practices, which may contribute to lower empathetic competencies later in life (Van der Graaff et al., 2014). As a result, in our all-male sample, self-regulation abilities may not translate directly into empathetic responding, due to internalised masculine gender roles that suppress empathetic behaviours. Replicating this study in a mixed-gendered sample may allow us to observe a stronger link between self-regulation and empathy in females, as societal roles allow for a greater development in empathetic expressions in women.

Furthermore, the lack of a significant relationship between empathy and peer status contrasts with previous studies suggesting that possessing empathetic skills increases one's peer status (Oberle et al., 2010; Wang et al., 2019). However, it is possible that empathy contributes to peer status through a more indirect path, potentially mediated by factors such as prosocial behaviour. Previous studies have

consistently shown that the ability to perceive others' feelings and recognise their underlying meaning (Kalisch, 1973) can increase prosociality (Van der Graaff et al., 2018; Wang et al., 2019). In other words, being able to understand what another person is feeling in a specific context, increases the likelihood that this person will engage in behaviours that aim to be beneficial for others. This explanation is based on the empathy-altruism hypothesis introduced by Batson et al. (1981), which suggests that enhanced empathetic abilities lead to higher altruistic motivation and hence prosocial actions. In turn, individuals who systematically engage in altruistic prosocial behaviours (i.e. helping a fellow student with an assignment) are often more liked and accepted by their peer system (Peters et al., 2010). Prosocial actions, despite being a result of empathetic feelings, are more easily observed by others, potentially explaining why individuals evaluate peer status using this determinant rather than the more internal process of empathy. Moreover, the lack of a significant relationship between empathy and peer status in this study may also be attributed to the specific characteristics of student residencies. Such residential communities often focus on functional coordination and achievement of practical goals (i.e. organising social activities, household chores, maintaining shared spaces etc) possibly prioritising more collective tasks than interpersonal dynamics. Hence, we could speculate that in these environments, personality characteristics that directly relate to achieving the student house's goals, such as reliability, communication, respectful boundaries (Holton, 2016), may be more valued compared to empathetic competence. While empathy is a fundamental quality for interpersonal relationships, in such task-oriented settings, emotional connections may be less emphasised, possibly explaining the absence of relationship between empathy and peer status. Consequently, predictors of peer status may vary across different social contexts. According to Baron and Kenny (1986), for mediation to occur, it is required that the independent variable significantly predicts the mediator, while in turn the mediator significantly predicts the dependent variable. Taking into account that none of the aforementioned direct effects were found to be significant, it can be concluded that the model was not supported.

Strengths and Limitations

To our knowledge this study was among the first to test the relationships between self-regulation, empathy and peer status within a closed social network of emerging adults. According to social network theory, a closed social network is a network where all members are generally known, and new contacts are rare (Ng, 2004). The properties of this distinct design (well-defined and stable setting) allowed us to explore the intricate social dynamics and peer interactions formed in a consistent social environment, a condition quite difficult to encounter during the fluid and transitional stage of emerging adulthood. Apart from that, using the BSCS and IRI scales to measure self-regulation and empathy, respectively, is considered an additional strength to this study as these instruments have shown good reliability and validity in the past (De Corte et al., 2007; Tangney et al., 2004)

However, this study also presented several limitations that are worth noting. Firstly, the sample size was relatively small (N= 23), which could have limited the statistical power of our analysis, as it increased the possibility of a Type II error (Faber & Fonseca, 2014). Secondly, gender could be an

additional limitation to the secure interpretation of our findings, as the study was performed consisting exclusively of male participants. This limits the generalisability of our results, considering that this single-gendered sample was not adequately representative of the general population. Additionally, the cross-sectional nature of our study constitutes a limitation of its external validity, since it does not allow us to observe how these relational dynamics might change throughout the course of time. Lastly, both the measurements of self-regulation and empathy were exclusively conducted through self-reported measures, which could increase the possibility of response biases (i.e. social desirability biases).

Future research and Implications

To address the aforementioned limitations, future research should try to focus more on mixed-gender samples to examine potential gender effects in the characteristics and social procedures establishing hierarchies among peer groups. For instance, in the study of Lansu and Cillessen (2012) it was found that men with higher prosocial leadership skills tended to be nominated as more liked compared to women, indicating that diverse features may contribute to how a person is viewed within a group according to their gender. Moreover, it would be beneficial to employ multi-method approaches (i.e. behavioural observation, peer-report measures) to measure this type of subjective constructs (personality traits) in similar future studies, as they have been found to facilitate a more comprehensive and accurate assessment (Podsakoff et al., 2003). Future research could also benefit from longitudinal designs exploring how the relationship of self-regulation, empathy and peer status evolves through different developmental stages. This examination would enable researchers to identify patterns of how these interrelationships change over time. Although emerging adulthood is globally recognised as a distinct developmental stage, the ways it manifests across various cultures can differ significantly (Arnett, 2014). For this reason, further comparative studies could be conducted including culturally diverse populations. This would allow us to examine potential variations in self-regulation and empathy expressions and their subsequent impact on peer status across different cultural backgrounds. Overall, additional research is crucial to identify factors involved in status-forming processes of emerging adults, as low peer preference and popularity have been associated with relational aggression both in adult (Lansu & Cillessen, 2012) and children's studies (Tseng et al., 2013).

Despite the lack of significant results, the present study adds to the existing literature examining social interactions in emerging adulthood, as it highlighted the complex nature of social dynamics formed during this period of great uncertainty and identity exploration (Wood et al., 2017). One potential implication of this study is the clear need for further research on the field of emerging adulthood. Gaining knowledge on the social skills and dynamics influencing how the individual is perceived, could help inform interventions targeting optimal social and interpersonal functioning within peer networks. Such programmes could be applied in mental health settings aiming to improve emerging adults' well-being and adjustment into adult life. Furthermore, educational settings, such as universities, could develop programmes and workshops aiming to inform young adults and provide tips and strategies on how to navigate themselves into this new era.

Conclusion

Overall, this study examined how traits like self-regulation and empathy influence peer status among the underexplored age group of emerging adults. Thereby, it contributes to the current literature studying peer relationships beyond high school, as the vast majority had predominantly focused on the earlier developmental stages of childhood and adolescence. The present study demonstrated that empathy did not mediate the relationship between self-regulation and peer status among emerging adults. Even though our initial assumptions regarding the association of these constructs were not confirmed, this study provided a valuable insight into the complex dynamics involved in the formation of peer social hierarchies during this period. Future research should further investigate factors influencing emerging adults' peer status to develop stage-specific theories, enhancing our understanding of the intricacies of this turbulent and in-between life stage.

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