



Relationship between perceived popularity and self-esteem moderated by gender

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Abstract

According to developmental psychology research, children have a strong desire to be accepted by their peers and to participate in peer-group activities while they are young. It is assumed that the degree to which youngsters succeed in blending with others has a substantial influence on their social self-concept, which includes the idea of self-esteem. The purpose of this study is to construct a correlative model between perceived popularity and self-esteem; the goal is to analyse the correlation (if any) between the two traits and discuss the influence that gender has on this topic; taking gender into account on topics of perceived popularity and self-esteem separately is not revolutionary, but it is new when viewed as a moderator between perceived popularity and self-esteem. The study comprised of 1356 pupils from six Dutch secondary schools, with 49.6 percent boys and 50.4 percent girls. Furthermore, the variables were tested using the Single Item Self-Esteem Scale (SISE) and student nominations in this study. According to the study's findings, perceived popularity and self-esteem are positively associated; and there was a non-significant interaction, indicating that the relationship between perceived popularity and self-esteem is not influenced by gender. Finally, even if there are no gender disparities in the connection, there is still a link, and paying attention to perceived popularity may increase self-esteem later in life.

Keywords: perceived popularity, self-esteem, gender, well-being, children

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Peer relationships are important for adolescent social and emotional development and have been linked to academic success, criminality, well-being and psychological adjustment (Juvonen et al., 2000; La Greca & Harrison, 2005; Lonardo, et al., 2009). Social interactions with peers have both short- and long-term consequences on well-being, beginning in childhood and continuing throughout life (Umberson & Montez, 2010). The concept of well-being is founded on assessments of quality of life and happiness, as well as the fulfilment of desires, the balance of pleasure and suffering, as well as living conditions (Ben-Arieh & Frønes, 2011). Subjective well-being is typically assessed using a three-part hierarchical framework that includes cognitive, affective, and life assessments: the cognitive states are based on each individual's observations and evaluation of own experiences, as well as satisfaction with one's marriage, work, and overall life; the affective framework includes positive measurements rather than just the absence of negative ones; and lastly life assessments include the general progression of life, typically of what is considered life satisfaction (Dinisman & Ben-Arieh, 2015). Subjective well-being research can as well be understood in the light of macro factors such as socioeconomic status (Savahl et al., 2017), social inequality, and poverty (Main, 2014), as well as micro factors like school environment (Casas and González, 2017), family structure, and the home environment (Rees et al., 2018), and social relationships (Goswami et al., 2012). The growing interest of the field of children's well-being is consequence of the positive effect it has on self-esteem (Dew & Huebner, 1994).

Self-esteem refers to an individual's overall positive evaluation of the self, composed by the notions of competence and worth (Cast & Burke, 2002). According to the World Health Organization (2000), positive self-esteem shields children and adolescents against mental discomfort and depression and allows them to cope appropriately with

challenging and stressful life situations. It plays an important role in the development of interpersonal relationships (Mao et al., 2009) and is usually associated with adolescents' relationships with their friends and parents (Joshi et al., 2006). Bronfenbrenner et al. (1977, 1986) highlights the idea that individuals mature and develop not in isolation but in the context of connections such as those involving families, friends, schools, neighbourhoods, and society. Having said that, knowing the dynamics of social interactions and self-esteem is advantageous since it has ramifications for the child's growth. Sullivan (1953) theorised that group-level acceptance and successful friendships are both important for development. Group-level acceptance or likeability refers to a situation in which the qualities of a group and the group's likes or dislikes about a single individual impact the person's behaviour. Sullivan et al. (1953) proposed that the relative importance of popularity and friendship change across child development as different social needs emerge. Nonetheless, popularity and friendship continue to influence child's developmental adjustments throughout childhood. Further findings corroborate with ideas of Sullivan et al. (1953) by demonstrating how popularity creates pathways to better adjustments by increasing the likelihood that children will form dyadic relationships as a result of their large networks (Nangle et al., 2003).

As a result of the emergence of different social needs, peer group acceptance or likeability becomes a concern at younger ages and grows throughout adolescence (Hymel et al., 2002). This occurs because school peers are the primary reference group with whom individuals identify and compare themselves. Aside from social acceptance, peer status or recognition/popularity among colleagues becomes increasingly crucial for early adolescents as their need to be popular rises (Asher & McDonald, 2009). According to LaFontana and Cillessen (2010), early and middle adolescents value being part of the popular group and conform to peer behaviour more than late adolescents. Popularity is

usually referred to as teenagers who are 'cool' and have a high social status among their classmates (Rodkin et al., 2006). The term "popularity" is frequently used as an umbrella term to refer to both sociometric and perceived popularity at the same time; however, sociometric and perceived popularity each have distinct behavioural profiles and characteristics that lead to different outcomes among youth (Parkhurst & Hopmeyer, 1998). Sociometric popularity is a measure of how well-liked (vs. disliked) an adolescent is by his peers, whereas perceived popularity reflects the adolescents' popularity (vs. unpopularity) as well as their dominance within the group-level hierarchy (Litwack et al., 2010). Perceived popularity has been derived from peer nominations; meaning that in order to measure perceived popularity a group of children (e.g., classmates) are asked to nominate another peer who they think is the most or least popular (Cillessen & Mayeux, 2004). Peer-perceived popularity differs from sociometric popularity, and the correlation between the two is moderate (Košir & Pečjak, 2005).

Students who are perceived as popular are perceived more positively and have higher social and general self-concept than those who scored higher on sociometric popularity (Hughes et al., 2006). The term self-concept refers to how we see ourselves in terms of our own actions, abilities, and distinguishing qualities. It is a person's general perception of his or her place or position in the world (Bergner & Holmes, 2000). In addition, it is suggested that peer-perceived popularity, rather than sociometric popularity, may be a more significant predictor of positive self-esteem and well-being (Kiefer & Ryan, 2008). As previously mentioned, self-esteem is fundamental to interpersonal growth (Mao et al., 2009). Interpersonal skills develop earlier in girls than in boys (Cillessen & Bellmore, 1999; LaFontana & Cillessen, 1999). As a result, it is possible that girls prioritise peer group status earlier than boys. This suggests that, in comparison to males, girls become significantly more "other-directed" or "people-oriented" (Rath & Nanda,

2012, p.58). By being more prone to other people's thoughts, women's self-esteem fluctuates in accordance with such external factors (i.e., winning others' acceptance) (Zeigler-Hill et al., 2012). Furthermore, men's self-esteem appears to be derived more from individuating themselves from others (i.e., feeling distinct in relation to others), whereas women's self-esteem appears to be derived from their connection to others (Rath & Nanda, 2012). Although various studies have been undertaken to determine what factors lead to gender disparities in self-esteem, few studies have looked into how dominance and prioritization of peer group status impact self-esteem, and if there is a relationship, if it differs by gender.

According to de Bruyn & van den Boom (2005), there is a positive relationship between perceived popularity and self-esteem, meaning that a high perceived popularity score is associated with higher self-esteem. As previously stated, perceived popularity is determined by the number of nominations received from peers (Cillessen & Mayeux, 2004), hence a high positive perceived popularity score corresponds to a higher number of "most popular" nominations received and a lower "least popular" nomination. In fact, other studies have not only corroborated such findings as they also added that higher perceived popularity in females indicates that they are regarded more positively by others and hence more positively accepted by the peer group, resulting in more positive self-esteem emotions (Hughes et al., 2001; Zeigler-Hill et al., 2012). To adolescent girls, interpersonal success, possibly viewed as high perceived popularity, results in higher self-concept and consequently in greater positive feelings of self-esteem (Rath & Nanda, 2012).

To sum up there are numerous studies confirming that while they are young, children have a strong desire to be accepted by their peers and to participate in peer-group activities. They understand the benefits of acceptability and social status, as well as the drawbacks of exclusion. On the other hand, blending in with your peers is a difficult

undertaking. The degree to which children succeed at this developmental activity is thought to have a substantial impact on their social self-concept, which encompasses concepts such as social competence, self-efficacy, and self-esteem (Adler & Adler, 1998; Bukowski & Hoza, 1989; Rubin et al., 1998). By reporting that there could be a stronger relationship between perceived popularity and self-esteem for female adolescents, as done in this study, parents and teachers can be better prepared to educate and motivate female adolescents at a younger age to weigh their self-esteem in terms of intrapersonal abilities rather than interpersonal abilities. Consequently, this paper intends to answer the following research questions: To what extent is the relationship between perceived popularity and self-esteem moderated by gender? and the two hypotheses are (1) It is expected that high scores on perceived popularity will be related to high scores on self-esteem, and (2) it is expected that the relationship between perceived popularity and self-esteem will be stronger for females.

Method

Participants

A sample of 2105 scholars among six secondary schools in the Netherlands were drawn. Of the total group of adolescents that were contacted (N = 2105), only 1356 adolescents were used in the analysis. Because not all participants answered both questionnaires nor parental consent was given, 740 students were omitted from the analysis. Mahalanobis was used to remove outliers. The sample size required to achieve a power of at least .95 and an effect size of 0.15 was determined using the 'G*power 3.1' tool. 74 participants were needed. The age of participants ranged from 13 and 18 years old, with a mean age of 15.38, there were 673 males, 49,6%, and 683 females, 50,4%.

Additional demographics were not taken into consideration. The IRB of the Radboud University Nijmegen provided ethical approval (ECG2012-2711-701).

Measures

Gender. Variable was answered by the question “*What is your gender?*”. Students were asked to select one of the two options: female or male consequently coded as 1 and 0.

Self-esteem. Scores were collected on the Single Item Self-Esteem Scale (SISE; Robins, Hendin, & Trześniewski 2001). The item “*I have high self-esteem*” was answered by all participants and responses were made on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scores ranges were 1 to 5, with a mean score of 3.59. A higher score on this scale reflected a higher perceived self-esteem. The Single Item Self-esteem scale has supporting findings for its own construct validity, and it contributes to the general research literature by expanding the nomological network of global self-esteem (Robins et al., 2001).

Perceived popularity. For such a concept, the question “*Who in your class is the least/most popular?*” was asked. Answers were coded based on two predefined categories: Outdegree referring to given nominations (i.e., how many fellow students were nominated by the participant), and Indegree to received nominations (i.e., how many fellow students nominated the participant). Both “Indegree” and “Outdegree” had subcategories in which they answered two different questions: “*Who in your class is the least popular?*” and “*Who in your class is the most popular?*”. Only Indegree nominations focused on the second question were considered for this study because they refer to how many fellow students perceived the participant as the most popular (Cillessen & Mayeux, 2004). The number of nominations ranged from 0 to 18 nominations.

Procedure

The data analysed was part of a longitudinal study done between the years 2013 and 2015, data were collected at 4 different time points. The first and second measurement being in 2013, the third later in 2014, and the last measurement taking place in 2015. The present study only used the data of T4. As the sample was collected from schools in the Netherlands, the language used for the questionnaires was Dutch, however, it was later translated to English by the researcher. Students were asked to rate their self-esteem by answering a single item on a 5-point Likert scale (SISE; Robins, Hendin, & Trześniewski 2001), as well as to nominate who they perceived as the most popular colleague within the classroom. The study's participation was planned during regular school hours. In the presence of undergraduate students participating in the experiment, participants completed all instruments and relevant questionnaires through computers. Each participant received a little gift (such as a pencil) in exchange for their time and effort in participating in the research.

Statistical Analyses

This research used the program 'IBM SPSS Statistics 26' for the statistical analyses. 'G*power 3.1' was also used to calculate the sample size necessary to attain at least .95 statistical power (Beck, 2013). As a result, the current study (N=1356) was deemed to have enough power. In order to generate reliable results, the test assumptions were checked. All of the variables were linearly connected, roughly normally distributed, as well as heteroscedasticity assumption and the absence of multicollinearity was validated. Starting with normality. In order to derive meaningful inferences from regression, the residuals should have a normal distribution, ideally by showing little deviation from the diagonal line. We may tell if the residuals are normally distributed by

looking at the Predicted Probability (P-P) plot. Homoscedasticity refers to whether these residuals are spread evenly. The expected values and residuals were shown on a scatterplot to test this assumption. The last assumption of multicollinearity was tested by checking the variance inflation factor (VIF) value. The VIF for the variables is both under 5, which indicates no multicollinearity. Besides 9 outliers were removed. Next, descriptive statistics for each variable were obtained. The correlation between variables was tested with Pearson's correlation with "perceived popularity" and "self-esteem". The hypotheses were tested to inspect whether there was a positive relationship between the independent variable and the dependent variable self-esteem and if such a relationship would be moderated by gender. In order to do so, a regression analysis was tested using extension PROCESS in SPSS, in which perceived popularity is the independent variable, self-esteem is the dependent variable, and gender is the moderator. The first regression analysis output refers to the effect of gender on self-esteem, followed by the effect of popularity on self-esteem, and lastly is a regression analysis to test the interaction between popularity and gender on self-esteem.

Results

Means and standard deviations for self-esteem, perceived popularity, and gender were calculated, as well as correlations between these variables. Table 1 summarises these findings. Variables were observed in general and in regard to gender because gender disparities between the variables were expected. Looking at the results presented in table 1, it seems that males scored higher, $M = 3.9$, $SD = 1.0$ on self-esteem and $M = 2.7$, $SD = 3.9$ on perceived popularity, than females that consequently had a $M = 3.2$, $SD = 1.1$ on self-esteem and $M = 2.0$, $SD = 3.3$ on perceived popularity. The results were in line with expectations, with a significant correlation $r(3,1361) = 0.164$, $p < .001$, between perceived popularity ($M = 2.3$, $SD = 3.6$) and self-esteem ($M = 3.5$, $SD = 1.1$).

In the analysis that is described below, self-esteem was the dependent variable, perceived popularity was the independent variable, and gender was entered as the moderator. The model explains approximately 10.0 % of the variance in self-esteem ($R^2=0.10$, $F(3,1352)=53.70$, $p < .001$). There was a significant positive effect of perceived popularity on self-esteem, $b = .043$, $t(3,1352) = 5.20$, $p < .001$. This means that with every increase in perceived popularity, an increase in self-esteem will occur. So as one's perceived popularity rises, so will one's self-esteem. With a score of 0 on perceived popularity, thus not being nominated by any peer, one already has a score of 0.040 on self-esteem. A negative significant relationship was found between the variable gender and self-esteem, $b = -.661$, $t(3,1352) = -10.97$, $p < .001$. Based on the data the study suggests that men (score 0 on variable "gender") scored a negative value of -0.66 on the self-esteem scale, and therefore females (score 1 on variable "gender") would score lower on self-esteem compared to males. The interaction is non-significant, $b = -.007$, $t(3, 1352) = -.47$, $p = 0.637$, indicating that the relationship between perceived popularity and self-esteem is not moderated by gender. The interaction output essentially provides the results of two regressions for gender as a predictor of self-esteem: for males, there is a significant positive relationship between perceived popularity and self-esteem, $b = .047$, $t(1, 1352) = 4.38$, $p < .01$. Equally a significant positive relationship was found for females, $b = 0.039$, $t(1, 1352) = 3.11$, $p < .01$. Important thus to understand that while the relationship between independent and dependent variables is significant for each gender, the relationship between perceived popularity and self-esteem with gender as the moderator is not.

Table 1*Means and standard deviations*

| | Male | | Female | | Total | |
|----------------------|------|-----|--------|-----|-------|-----|
| | M | SD | M | SD | M | SD |
| Perceived popularity | 2.7 | 3.9 | 2.0 | 3.3 | 2.3 | 3.6 |
| Self-esteem | 3.9 | 1.0 | 3.2 | 1.1 | 3.6 | 1.1 |

Discussion

The aim of the paper was to find out to what extent is the relationship between perceived popularity and self-esteem moderated by gender. The findings show that, as expected, perceived popularity has an influence on children's self-esteem. Based on the data, we may infer that there was a positive significant link between the two variables. That is, a high score on perceived popularity is associated with a high score on self-esteem. Thus, it seems, on average, being nominated more often by their peers leads to higher scores on the self-esteem scale compared to students who were not nominated at all or had fewer nominations. The results above supported the first hypothesis established at the beginning of the paper that proposed that there would be an association between perceived popularity and self-esteem. The second hypothesis investigated gender as the moderation. Women were thought to have a stronger connection than men. The results did not support this assumption, indicating that there was not a significant difference in the relationship between perceived popularity and self-esteem when compared to both females and males.

Because gender was not found to play a moderator role in the relationship between the variables studied, we can conclude that our findings disprove the research question.

The findings mentioned above were related to another study. Van den Boom & de Bruyn (2005) found during their research a positive association between perceived popularity and self-esteem, implying that a high positive perceived popularity score is associated with a higher self-esteem score (Van den Boom & de Bruyn, 2005). This paper's data confirm their conclusions. Because of the growing relevance of peers during adolescence, social comparison with peers and social support from peers have a strong impact on self-esteem (Mann et al., 2004). Furthermore, according to Hughes et al. (2001) and Zeigler-Hill et al. (2012), a higher perceived popularity score in females means that when they are regarded more positively by others and hence better accepted, they should display higher self-esteem levels. It is critical to recognize that the idea of self-esteem is impacted by a variety of factors other than social contact. When investigating self-esteem as a broad term that encompasses all areas, there is a considerable gender discrepancy, with males reporting greater levels of self-esteem than females (Bleidorn et al., 2016). This article was intended to examine not only the specific domain of perceived popularity but also to claim that females have greater levels of self-esteem than males. In conclusion, the absence of moderating effect may be explained by the fact that, while perceived popularity has an influence on female self-esteem (Hughes et al., 2001; Zeigler-Hill et al., 2012), it is not as strong for females as previously imagined when compared to males.

While teenagers aspire to be popular (Asher & McDonald, 2009), their well-being suffers as a result. Low and high popularity are both stressful, and adolescents at both ends of the popularity spectrum show less social satisfaction, poorer best friendship quality, and lower social self-concept (Ferguson & Ryan, 2018). Although our results did not meet our objectives, they nonetheless provide value to the issue. The extent to which children

succeed at social interaction developmental activities is thought to have a significant impact on their social self-concept, which encompasses the concept of self-esteem (Adler & Adler, 1998; Bukowski & Hoza, 1989; Rubin et al., 1998). Although no moderation effect was found, it is still necessary for parents and teachers to educate and inspire male and female teenagers to evaluate their self-esteem in terms of intrapersonal abilities rather than interpersonal abilities.

The current study is not without limitations. To begin with, the reliability of our perceived popularity construct was thought to be low, which could be attributed to the fact that only one measurement was done. To address this obstacle, future researchers should administer the questionnaire where they ask students to nominate the most popular pupil, to individuals at least once more at a different time. Another limitation of this study was that there was no control for classroom size. Perceived population was measured by the total number of nominations not controlling for classroom size. It can thus be a limitation because by accounting for the total amount of participants we are modifying how popular someone actually is. Finally, we feel that our investigation has also some strengths as it brings implications for teachers and parents who are interested in the influence of their child's socializing abilities. A prevalent worry is how to improve well-being at all ages, so recognizing the influence of social interactions and youth popularity gives answers on how to do so. Furthermore, in order to validate the hypothesis that there may be a gender difference in self-esteem, this paper used previous studies and reliable questionnaires to examine the means difference between male and female students in terms of perceived popularity and self-esteem.

In conclusion, the aim of this paper was to investigate a relationship between perceived popularity and self-esteem, and if so, how could gender moderate it. The findings revealed that there was no significant difference in the relationships between

perceived popularity and self-esteem between men and women. Despite the lack of moderating effects, high self-esteem predicts future success and well-being in domains such as relationships, work, and health (Kuster et al., 2013). Given the mounting evidence that self-esteem has significant real-world effects, self-esteem development is a critical societal problem.

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