



Narcissism and Self-esteem as Correlates of Photo Manipulation among Youth

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Abstract: Background: In the present digital age, young people place a greater emphasis on posting their images on social networking sites. As a result, the increasing usage of filters and photo manipulation to improve one's appearance in photos has sparked worries about potential mental health issues. Objectives: The present study seeks to explore the gender differences in photo-manipulation, along with examining the relationship of photo manipulation with self-esteem and narcissism among youth. Method: The sample consisted of young adults (N = 92) aged 18-29 years old who were active users of social media. The Google form consisting of the three psychometric tools namely, Rosenberg Self-Esteem Scale (Rosenberg, 1965), Narcissistic Personality Inventory (NPI-16) (Ames et al., 2006) and Self-Photo Manipulation Scale (McLean et al., 2015) was shared with the participants using convenience and snowball sampling technique. Independent samples t-test and Pearson's Product Moment Correlation were carried out for data analysis. Results: There were no significant gender differences in photo manipulation among males and females. Further, self-esteem and narcissism were not correlated with photo manipulation among youth. Conclusion: The findings of this study show that photo manipulation is used by both genders, and it is becoming normalized among today's generation.

Keywords: *Photo-Manipulation, Personality, Narcissism, Self-Esteem*

1. Introduction

The Internet is an essential tool in today's digital age since it has numerous benefits like social networking, entertainment, and rapid communication. In recent years, social networking sites (SNSs), such as Facebook, Instagram, and Twitter, have become much more popular (Biolcati & Cani, 2015; Biolcati, Cani, & Badio, 2013). Selfies, or self-portraits shared across multiple social media platforms, have become a popular trend among users, providing a chance to manage and experiment with their sense of self. This type of self-expression has grown in popularity, allowing people to display themselves in many ways. However, it has led to a rise in the usage of photo manipulation, which is the process of using software to change photos in order to improve attractiveness or fit in with social standards of beauty (McLean et al., 2015). Common changes include feature reshaping, skin smoothing, or the application of filters to get an idealized self-image. Photo manipulation is frequently driven by psychological motivations, such as the need for social recognition (Chae, 2017).

The act of taking and sharing selfies is more than just taking and uploading pictures. Users have the option to further manipulate their selfies because of social networking sites, their integrated features, and other apps as well. In order to curate and portray an idealized version of themselves, people might utilize editing tools to improve or change the appearance of photos. Because of this, uploading selfies has become a complex activity in which photo editing and alteration greatly influences how people present themselves and who they are online. Selfie tools and filters have grown popular, especially on social networking sites like Instagram, Snapchat, and TikTok, where users frequently want to project an idealized self. According to Saltzman (2014), manipulating selfies is a way for people to express themselves, but it also reflects social pressure to adhere to aesthetic standards, which are frequently motivated by the need for approval and social acceptability. Moreover, individuals with poor self-esteem may engage in excessive photo editing to conceal their fears, which acts as a compensating method to improve their self-image (Ridgway & Clayton, 2016). Gioia et al. (2021) emphasized that young people who are concerned about how their bodies appear are far more likely to engage in appearance-related social media activities. This interaction could increase appearance-focused monitoring and intensify body image issues through the creation of a feedback loop.

Rosenberg (1965) characterizes self-esteem as “an overall evaluation that results in a positive or negative view of oneself”. It represents how people view and evaluate their own

importance, potential, and general sense of self-worth (Baumeister et al., 2003). As a result, those who have high self-esteem hold their self-concept in high regard, which is characterized by a deep feeling of value and respect. On the other hand, those who have low self-esteem are frequently plagued by emotions of inadequacy, unworthiness, shortcomings and lack of self-approval (Rosenberg, 1965). In an effort to feel supported and validated, they are more prone to internalize society's expectations of thinness (Striegel-Moore & Cachelin, 1999) and compare their physical appearance often to others (Van den Berg et al., 2007). Additionally, they are prone to upward comparisons (Perloff, 2014), which might act as a sharp reminder of the beauty standards they are unable to meet (Patrick et al., 2004).

Youngsters with poor self-esteem are more likely to un-tag themselves from negative online images (Tazghini & Siedlecki, 2013) and indulge in higher self-promotion of themselves on their profile picture (Mehdizadeh, 2010). Individuals who rely on such editing programs lose sight of their genuine self-worth, which has a significant negative impact on their confidence, self-esteem, and the need to constantly appear ideal. By being addicted to such behavior, there is an increasing risk of psychiatric problems, persistent stress, feelings of inadequacy, and inability to meet the societal norms set by the media (Donovan, Chew, & Penny, 2014). Though the relationship between photo manipulation and self-esteem is cyclic in nature, the majority of the available literature has examined the impact of photo manipulation on self-esteem of youngsters (Mills et al., 2018; Ozimek et al., 2023). There is a scarcity of research emphasizing the role of self-esteem in selfie-taking, selfie sharing and photo manipulation (Bardsley, 2024), which is rather imperative to analyze. Considering the rationale discussed in the above section, the present study aims to analyze the relationship between self-esteem and photo manipulation among youth.

Another factor evidenced by recent research which plays a crucial role in photo manipulation is narcissism (Giordano et al., 2019). Narcissism refers to an egoistic admiration of one's ideal self-image and characteristics, like feeling superior to others and viewing oneself as more beautiful or capable (Kittinaraporn, 2018). It is a core belief a person holds of themselves in an exaggerated manner. Few psychologists refer to narcissism as a 'self-love' considering the overpowering social needs of an individual (Kittinaraporn, 2018). Authors have argued that photo manipulation, especially across social networking sites (SNS), is closely related to narcissistic qualities, implying that selfie-taking may be connected to greater degrees of narcissism (Halpern et al., 2016). Individuals with narcissistic tendencies commonly utilize photo editing to display an

idealized or exaggerated image of oneself, which meets their need for recognition and affirmation (Buffardi & Campbell, 2008). This style of behavior highlights the importance of personality factors in shaping how one presents oneself in virtual settings. Research indicates a significant association between narcissistic personality traits and photo manipulation behaviors (Buffardi & Campbell, 2008).

One of the key causes of the rise of online narcissism is the rising social competitiveness between people on social media platforms, particularly with regard to selfies (Poe, 2015). According to past studies on selfies, there is a strong correlation between the attribute of narcissism and uploading selfies (Sung et al., 2016; Weiser, 2015). Therefore, one could argue that the invention of selfies sparked people's entrepreneurial skills, which in turn led to the narcissism of the selfie era. By gradually redefining oneself in selfies, we end up coming across as narcissistic (Halpern et al., 2016). It is evident from research so far that there exists a link between narcissism and snapping selfies, but little is known about how narcissism is associated with the related activity of picture editing. To fulfill this gap, this study investigates whether narcissism as a personality characteristic is related to photo manipulation behavior among youth.

Moreover, many authors have advocated that the variable to gender is important to consider when examining the phenomena of photo manipulation (Boursier & Gioia, 2022; Mingoia et al., 2019; Vandenbosch & Eggermont, 2013). Keeping this in mind, the present study also aims to analyze the gender differences in photo manipulation behavior among youth.

1.2 Research Objectives

- a) To study the gender differences in photo manipulation.
- b) To study the relationship between self-esteem and photo manipulation.
- c) To study the relationship between narcissism and photo manipulation.

1.3 Hypotheses

- 1) There will be significant gender differences in photo manipulation among males and females.
- 2) Self-esteem will be significantly and negatively related to photo manipulation.
- 3) Narcissism will be significantly and positively related to photo manipulation.

2. Methodology

2.1 Participants

The sample for the current study consisted of 92 young adults (46 males and 46 females) who were active users of social media aged 18 to 29 years. The mean age of the sample was 21.28 years. This age group was appropriate considering the large numbers of users on social media platforms like Snapchat and Instagram (Dixon, 2022) in which uploading selfies and use of filters is primarily seen (Bardsley, 2023). To recruit the participants, convenience and snowball sampling technique was used. An online survey was conducted to gather the data. This survey included the Self-Photo Manipulation Scale (McLean, 2015), the Narcissistic Personality Inventory (NPI-16; Ames et al., 2006), and the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

2.2 Psychological Measures

2.2.1 Rosenberg's Self-Esteem Scale (Rosenberg, 1965)

Rosenberg's Self-Esteem Scale (RSES; 1965) is a 10-item questionnaire that assesses how one feels about oneself. The test was first created to evaluate high school students' self-esteem. It has been modified throughout time to be used with a variety of populations (Rosenberg, 1979). The Scale consists of 10 items scored on a four-point Likert scale, ranging from 1 (strongly agree) to 4 (strongly disagree). Items 1, 3, 4, 7, and 10 are positively phrased, whereas items 2, 5, 6, 8, 9 are negatively stated. Scoring is reserved for negatively worded items. Total scores can be obtained by adding scores of each of the 10 items, wherein the higher score represents higher self-esteem. The Rosenberg Self-Esteem Scale has strong reliability scores, with an internal consistency of 0.77 and a minimum Coefficient of Reproducibility of 0.90 (Rosenberg, 1965).

2.2.2 Narcissistic Personality Inventory (NPI-16) (Ames et al., 2006)

NPI-16 was used to measure narcissism as a personality trait in the present study. It consists of 16 items where participants were asked to choose which of the given statements they most agreed with. For instance, participants were asked to select between the following statements: "It makes me uncomfortable to be the center of attention" and "I really like to be the center of attention." Responses were rated as either 0 or 1 for data analysis purposes, with 0 being given to non-narcissistic remarks, and 1 to narcissistic statements. These numbers were added up to determine the total narcissism score, where higher scores imply higher degrees of narcissism. Ames et al. (2006) reported that the scale has a Cronbach's alpha of 0.72 and a sound validity as well, which makes it a psychometrically useful tool.

2.2.3 Self-Photo Manipulation Scale (McLean et al., 2015)

The 10-item Self-Photo Manipulation Scale (PMS) developed by McLean et al. (2015) was

used to assess participants' photo manipulation behaviors. Participants rated the frequency of their photo editing behaviors on a 5-point Likert scale, ranging from 1 (never) to 5 (always). This scale was designed to measure the extent to which individuals alter their photographs before sharing them online. Sample items include 'Edit to hide blemishes like pimples' and 'Whiten your teeth.' A total score was obtained by adding scores of each item, with higher score indicating more frequency of photo manipulation. The scale demonstrated good internal consistency, with a Cronbach's alpha of 0.85 (McLean et al., 2015).

2.3 Procedure

Three established self-report measures were used in the present investigation to meet its objectives. The data collection was conducted online, and participants accessed the survey through a Google Forms link, which was distributed via various social media platforms. To facilitate informed participation, detailed instructions and explanations regarding the nature and purpose of the study were provided to all participants prior to the commencement of the survey in the first section. The questionnaire was designed for completion on participants' personal devices, allowing for independent participation without supervision, thereby ensuring privacy and convenience. Prior to completing the survey, all participants provided informed consent. They were explicitly assured that their responses would remain confidential, with no personally identifiable information being collected.

The survey took approximately 15 minutes to complete. Participants were encouraged to answer all questions honestly, and no incentives, monetary or otherwise, were offered for participation, ensuring voluntary involvement. Upon completion, the responses were digitally recorded and subsequently exported into Excel spreadsheet which was further transferred to SPSS 21.0 for data analysis. The data was collected from 15th October 2024 to 15th January 2025.

2.4 Data Analysis

SPSS 21.0 was used for data analysis. The Independent Samples t-test was used to examine gender differences in photo manipulation. Pearson's Product Moment Correlation was used to explore the relationships between self-esteem, narcissism, and photo manipulation. Considering the lack of any significant relationship between photo manipulation, self-esteem and narcissism, though initially proposed, regression analysis was not used.

3. Results and Discussion

Table 1: *Descriptive Statistics: Mean, Standard Deviation, Skewness, and Kurtosis for the Variables in the Total Sample*

Variables	N	Mean	Std. Deviation	Skewness	Kurtosis
Photo Manipulation	92	18.76	6.15	0.87	0.22
Self-esteem	92	18.55	4.50	0.14	0.12
Narcissism	92	5.53	3.05	0.54	-0.29

Prior to the employment of the inferential statistics, descriptive statistics were calculated to assess the normality of the data. Table 1 highlights the values of the mean, standard deviation, skewness, and kurtosis for the total sample. Looking at the values of the skewness and kurtosis makes it clear that the data is normally distributed. This justifies the use of the further used inferential statistics in this study.

Table 2: *Means, Standard Deviations of scores and t-ratio for Photo Manipulation among Youth*

Gender	Mean	Standard Deviation	t-ratio	Significance value
Males (N = 46)	18.36	6.59	0.608	0.545
Females (N = 46)	19.15	5.72		

Table 2 highlights the result of an independent sample t-test showing the gender differences in photo manipulation. The mean value of photo manipulation is slightly higher in females than males. However, the findings show that this difference is not statistically significant ($t = 0.608$, $p > 0.05$). Thus, there were no significant gender differences in photo manipulation in the present study.

Supportive results have been found by previous researchers who have reported that both males and females have an equal tendency of modifying their pictures before sharing them (Gioia et al., 2021; Mascheroni & Ólafsson, 2018). Though this is in contrast to a line of research which shows that in comparison to males, females have a greater tendency to be involved in editing their photos (Dhir et al., 2016; Mingoia et al., 2019), which is often a reflection of the sociocultural pressures of the society which focuses on appearance among women (Strahan et al., 2006). Interestingly, there has been a shift in societal focus towards appearance for both genders (Boursier

& Gioia, 2022; Vandenbosch & Eggermont, 2013). This growing emphasis on appearance aligns with the rising prevalence of photo manipulation practices among both females and males where they strive to meet unrealistic beauty standards perpetuated through social media and cultural norms. The present study signifies that both genders have normalized the practice of photo manipulation and are equally under pressure to meet the beauty standards of the society. Based on the above discussion, hypothesis 1 is rejected.

Table 3: *Pearson's Product Moment Correlation between Photo Manipulation, Self-esteem and Narcissism among Youth*

Variables	Self-esteem	Narcissism
Photo Manipulation	-0.195	0.014

Table 3 depicts the results of Pearson's Product Moment Correlation between Photo Manipulation, Self-esteem and Narcissism in the current study. As highlighted, there was no significant relationship of photo manipulation with self-esteem and narcissism among youth. Thus, hypotheses 2 and 3 are rejected. Similar findings have been procured by Barry et al. (2019) and Verma et al. (2020). These findings can be explained on the basis of the sample size and methodological considerations. Firstly, the sample size for the current study was small ($N = 92$), which might have limited the detection of significant relationships between the variables under study due to the insufficient statistical power. Secondly, self-report measures were used for data collection, which possibly could have led to social desirability effects. The participants may have followed a restrictive approach in reporting their levels of self-esteem and narcissism, hence masking the link of these variables with photo manipulation.

Thirdly, it is imperative to highlight here that it is very common for today's generation to consider mobile phones as an inseparable part of their daily lives. Social media is extensively used by them for various purposes. One of the features of the social media apps is photo editing. It is conceivable that the phenomenon of photo manipulation is becoming a norm among the youngsters nowadays and they might be using it on social media as a tool of expression of their creativity and ideas. As a result, their psychological traits like self-esteem and narcissism might not be related to photo manipulation. Lastly, there could be contributions of some other factors as well which were not analyzed in the present study like peer pressure, different types of social media

platforms, body image concerns, body self-esteem, etc. which may mediate or moderate the link between photo manipulation, self-esteem and narcissism. Since there was no significant association of photo manipulation with self-esteem and narcissism, regression analysis was not run.

4. Implications and Limitations

This study challenges the existing stereotype that women are more concerned about their public image and are more invested in photo editing. The phenomena of photo manipulation can be viewed as something which is an ingrained part of today's generation since the presence of social media is unavoidable these days. It is conceivable that for generation Z, photo manipulation might be a more creative approach and a neutral phenomenon. There are some limitations of this study which are important to address. It was cross sectional in nature. Future researchers can conduct longitudinal studies on photo manipulation to better understand the causal link between the variables under study. Moreover, sample size was small in number, a larger sample size can help in procuring more reliable results. Further, this study used a quantitative approach which can limit the participants to choose between the given responses. Future studies can conduct qualitative analysis for more detailed in-depth information from respondents to understand the factors contributing towards photo manipulation.

References

- Ames, D. R., Rose, P., & Anderson, C. P. (2006). The NPI-16 as a short measure of narcissism. *Journal of research in personality*, 40(4), 440-450.
<https://doi.org/10.1016/j.jrp.2005.03.002>
- Bardsley, J. (2024). *Individual differences in selfie taking, photo manipulation and filter use amongst young adults*. Master's Thesis, University of South Wales.
https://pure.southwales.ac.uk/ws/portalfiles/portal/26654550/Individual_Differences_in_S
- Barry, C. T., Reiter, S. R., Anderson, A. C., Schoessler, M. L., & Sidoti, C. L. (2019). "Let me take another selfie": Further examination of the relation between narcissism, self-perception, and instagram posts. *Psychology of Popular Media Culture*, 8(1), 22-33.
<https://psycnet.apa.org/doi/10.1037/ppm0000155>
- 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>
- Biolcati, R., & Cani, D. (2015). Feeling alone among friends: Adolescence, social networks and loneliness. *Webology*, 12(2), 1-9. <http://www.webology.org/2015/v12n2/a138.pdf>.
- Biolcati, R., Cani, D., & Badio, E. (2013). Adolescenti e Facebook: la gestione online della privacy. *Psicologia clinica dello sviluppo*, 17(3), 449-478. <https://www.rivisteweb.it/doi/10.1449/76228>
- Boursier, V., & Gioia, F. (2022). Which are the effects of body-objectification and Instagram-related practices on male body esteem? A cross-sectional study. *Clinical Neuropsychiatry*, 19(1), 8-19. <https://doi.org/10.36131/cnforitieditore20220103>
- Buffardi, L. E., & Campbell, W. K. (2008). Narcissism and social networking web sites. *Personality and social psychology bulletin*, 34(10), 1303-1314. <https://doi.org/10.1177/0146167208320061>
- Chae, J. (2017). Virtual makeover: Selfie-taking and social media use increase selfie- editing frequency through social comparison. *Computers in Human Behavior*, 66, 370-376. <https://doi.org/10.1016/j.chb.2016.10.007>
- Dhir, A., Pallesen, S., Torsheim, T., & Andreassen, C. S. (2016). Do age and gender differences exist in selfie-related behaviours?. *Computers in Human Behavior*, 63, 549- 555. <https://doi.org/10.1016/j.chb.2016.05.053>
- Dixon, S. (2023). Number of Social Media Users Worldwide from 2017 to 2027. Statista. <https://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/#:~:text=Social%20networking%20is%20one%20of,rate%20stood%20at%2049%20percent>
- Donovan, C. L., Chew, D., & Penny, R. (2014). Perfecting weight restriction: The moderating influence of body dissatisfaction on the relationship between perfectionism and weight control practices. *Behaviour Change*, 31(3), 189-204. <https://doi.org/10.1017/bec.2014.11>
- Gioia, F., McLean, S., Griffiths, M. D., & Boursier, V. (2021). Adolescents' selfie- taking and selfie-editing: A revision of the photo manipulation scale and a moderated mediation model. *Current Psychology*, 42, 3460–3476. <https://doi.org/10.1007/s12144-021-01702-x>
- Giordano, C., Salerno, L., Pavia, L., Cavani, P., Coco, G. L., Tosto, C., & Di Blasi, M. (2019).

- Magic mirror on the wall: Selfie-related behavior as mediator of the relationship between narcissism and problematic smartphone use. *Clinical Neuropsychiatry*, 16(5-6), 197-205. <https://doi.org/10.36131/clinicalnpsych2019050602>
- Halpern, D., Valenzuela, S., & Katz, J. E. (2016). "Selfie-ists" or "Narci-selfiers"? A cross-lagged panel analysis of selfie taking and narcissism. *Personality and Individual Differences*, 97, 98-101. <https://doi.org/10.1016/j.paid.2016.03.019>
- Kittinaraporn, J. (2018). *The innovation of social media and digital narcissism* (Doctoral dissertation). National Institute of Development Administration. <https://libdcms.nida.ac.th/thesis6/2018/b205838.pdf>
- Mascheroni, G., & Ólafsson, K. (2016). The mobile Internet: Access, use, opportunities and divides among European children. *New Media & Society*, 18(8), 1657-1679. <https://doi.org/10.1177/14614448145679>
- McLean, S. A., Paxton, S. J., Wertheim, E. H., & Masters, J. (2015). Photoshopping the selfie: Self photo editing and photo investment are associated with body dissatisfaction in adolescent girls. *International Journal of Eating Disorders*, 48(8), 1132-1140. <https://doi.org/10.1002/eat.22449>
- Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on Facebook. *Cyberpsychology, behavior, and social networking*, 13(4), 357-364. <https://doi.org/10.1089/cyber.2009.0257>
- Mills, J. S., Musto, S., Williams, L., & Tiggemann, M. (2018). "Selfie" harm: Effects on mood and body image in young women. *Body image*, 27, 86-92. <https://doi.org/10.1016/j.bodyim.2018.08.007>
- Mingoia, J., Hutchinson, A. D., Gleaves, D. H., & Wilson, C. (2019). The relationship between posting and photo manipulation activities on social networking sites and internalization of a tanned ideal among Australian adolescents and young adults. *Social Media + Society*, 5(1), 7-10. <https://doi.org/10.1177/2056305118820419>.
- Ozimek, P., Lainas, S., Bierhoff, H. W., & Rohmann, E. (2023). How photo editing in social media shapes self-perceived attractiveness and self-esteem via self-objectification and physical appearance comparisons. *BMC psychology*, 11(1), 99. <https://doi.org/10.1186/s40359-023-01143-0>
- 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(4), 501-514. <https://doi.org/10.1177/0146167203261891>.
- Perloff, R. M. (2014). Social media effects on young women's body image concerns: Theoretical perspectives and an agenda for research. *Sex roles*, 71, 363-377. <https://doi.org/10.1007/s11199-014-0384-6>.
- Poe, J. (2015). The link between "likes" and self-worth: how women use selfies on Instagram for self-presentation and the effects of social comparison. 24, 1-2. https://digitalcommons.hope.edu/curcp_14/24.
- Ridgway, J. L., & Clayton, R. B. (2016). Instagram unfiltered: Exploring associations of body image satisfaction, Instagram# selfie posting, and negative romantic relationship outcomes. *Cyberpsychology, Behavior, and Social Networking*, 19(1), 2-7. <https://doi.org/10.1089/cyber.2015.0433>
- Rosenberg's, M. (1965). Society and the adolescent self-image. *Princeton, NJ: Princeton*.
- Saltzman, S. (2014). How to look good in a selfie. Allure. <http://www.yorku.ca/rokada/psycetest/rosenbrg.pdf>
- Strahan, E. J., Wilson, A. E., Cressman, K. E., & Buote, V. M. (2006). Comparing to perfection: How cultural norms for appearance affect social comparisons and self-image. *Body image*, 3(3), 211-227. <https://doi.org/10.1016/j.bodyim.2006.07.004>
- Striegel-Moore, R. H., & Cachelin, F. M. (1999). Body image concerns and disordered eating in adolescent girls: Risk and protective factors, 85-108. <https://psycnet.apa.org/doi/10.1037/10325-003>.
- Sung, Y., Lee, J. A., Kim, E., & Choi, S. M. (2016). Why we post selfies: Understanding motivations for posting pictures of oneself. *Personality and individual differences*, 97, 260-265. <https://doi.org/10.1016/j.paid.2016.03.032>.
- Tazghini, S., & Siedlecki, K. L. (2013). A mixed method approach to examining Facebook use and its relationship to self-esteem. *Computers in Human Behavior*, 29(3), 827-832. <https://doi.org/10.1016/j.chb.2012.11.010>.
- Van den Berg, P., Paxton, S. J., Keery, H., Wall, M., Guo, J., & Neumark-Sztainer, D. (2007). Body dissatisfaction and body comparison with media images in males and females. *Body image*, 4(3), 257-268. <https://doi.org/10.1016/j.bodyim.2007.04.003>
- Vandenbosch, L., & Eggermont, S. (2013). Sexualization of adolescent boys: Media exposure and

boys' internalization of appearance ideals, self-objectification, and body surveillance. *Men and Masculinities*, 16(3), 283-306. <https://doi.org/10.1177/1097184X13477866>.

Verma, N., Pawar, K. D., Somaiya, M., Kedare, J., Mehta, F., Tyagi, A., & Gillurkar, K. (2020). Selfie-taking behavior: Personality factors, self-esteem, and interpersonal closeness in college-going students in a Metropolitan City. *Indian Journal of Social Psychiatry*, 36(3), 230-235. https://doi.org/10.4103/ijsp.ijsp_31_19.

Weiser, E. B. (2015). #Me: Narcissism and its facets as predictors of selfie-posting frequency. *Personality and Individual Differences*, 86, 477–481. <https://doi.org/10.1016/j.paid.2015.07.007>