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Selfie-Posting and its Influence on Self-Esteem of University Students: Online Positive Feedback as a Mediating Mechanism

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ABSTRACT

Aim of the Study: This study aims to identify the relationship between selfie-posting on social networking sites and self-esteem under the umbrella of Hyperpersonal Model of Computer-Mediated Communication. Moreover, this study seeks to investigate the indirect effects of online positive feedback between the relationship of selfie-posting and self-esteem.

Methodology: Quantitative methodology vis-à-vis survey method was employed to carry out this research. Data were obtained from 214 respondents through an online administrated questionnaire.

Findings: Results through Structural Equation Modeling indicated a positive and direct relationship between selfie-posting and self-esteem. Moreover, online positive feedback was found to have significant mediating effects of selfie-posting behavior on self-esteem.

Conclusion: The study concludes that selfie-posting not only boosts self-esteem but also enhances positive self-image, self-acceptance and self-respect.

Keywords: Selfie-posting, Self-esteem, Online Positive Feedback, Social Networking Sites, Youngsters.

Introduction

Selfie-posting is currently a common self-presentation strategy on social networking sites (SNSs), especially among youth (Katz & Crocker, 2015; Mills et al., 2018). Sharing selfies on SNSs is a common way of selective self-presentation (Sung et al., 2016). Zhao et al. (2008) argued that social media users present themselves in a more selective and desirable manner by posting their selfies.

In addition, selfie-posting has a positive association with psychological factors like self-esteem (Pounders et al., 2016). Self-esteem refers to "an individual's overall self-evaluation of one's own worth" (Rosenberg, 1965). It is an essential component of mental health (Gillen, 2015). To enhance self-esteem, social media users present information based on their feelings and states of mind (Bareket-Bojmel et al., 2016). Surprisingly, individuals low in self-esteem are more involved in self-promoting behaviors on

social networks (Mehdizadeh, 2010). Selfie-sharing improves the self-esteem of selfie-takers (Chua & Chang, 2016; Wang et al., 2020).

It is worth mentioning that high self-esteem is a product of others' positive responses. To be certain, computer-mediated communication has made it easy for the general public to gain positive feedback (Yang, 2014). Social media users obtain positive feedback in the form of 'likes', 'emojis', and 'comments' that improve their self-concepts. It is pertinent to mention here that social networking sites have positive response features e.g. 'dislike' option is not included in the features of SNSs. It also helps users to get positive feedback from their fellows. In short, social networks enhance self-esteem through positive self-presentation (Gentile et al., 2012).

The existing literature acknowledged the association between selfie-posting and self-esteem (Gonzales & Hancock, 2011; Toma, 2013). A few studies also explored the indirect effects of positive feedback (Wang et al., 2020). Little is known about this phenomenon in the context of Pakistani society as our society is traditional where innovative ideas are usually linked with ethical values. Prior work suggests that women are more inclined towards selfie-posting as compared to men (Biolcati & Passini, 2018; Williams, 2014). When we observe this phenomenon in the context of our society, this seems to be contrary to the ground situation. Pakistan is a patriarchal society where the majority of women don't seem comfortable presenting themselves on social networks. This particular study intends to explore the effects of selfie-posting on self-esteem through the indirect effects of online positive feedback. This study will help us to understand how online selective self-presentation influences self-esteem in a conventional society. It would be worthwhile to study the phenomenon of selfie-posting in a conservative country like Pakistan.

Research Objectives

More specifically, this study seeks to:

1. Examine the influence of selfie-posting on the self-esteem of university students.

2. Explore the relationship between selfie-posting and online positive feedback.

3. Identify the effects of online positive feedback on self-esteem.

4. Investigate the mediating role of online positive feedback between the relationship of selfie-posting and self-esteem.

Literature Review

Direct Effects of Selfie-posting on Self-esteem

Several research studies provide evidence of the relationship between selfie-posting and self-esteem. Recently, Wang et al. (2020) explored this relationship with the mediating effects of positive feedback. By conducting a survey, they collected data from 442 female respondents. The results demonstrated a significant relationship between selfie sharing and self-regard. Furthermore, the indirect effects of positive feedback were significant. Another study conducted by Chang, Li, Loh, and Chua (2019) generate similar results demonstrating a positive association between selfie-posting and body esteem.

Barry et al. (2017) examined the influence of online self-presentation on self-esteem among a sample of 128 respondents. The findings revealed a statistically insignificant relationship between online self-presentation and self-esteem. However, Wang et al. (2017) found no association between selfie-sharing and self-esteem.

Pounders et al. (2016) identified factors behind selfie-posting. In this regard, data was collected from 15 female respondents through in-depth interviews. Self-esteem was identified as one of the major motivational factors and outcomes of selfie-posting. Toma (2013) applied experimental design to know the relationship between online self-presentation and self-esteem. Findings indicated that momentary contact with one's profile increases implicit self-esteem. Similarly, Gonzales and Hancock (2011) argued

that Facebook usage has a great influence on self-esteem. This study resulted that computer-mediated communication and online networks have changed the entire scenario. In this regard, the researchers found that Facebook usage, photo editing, and posting stimulated the self-esteem of individuals.

This relationship can be elucidated by the 'Hyperpersonal Model of Computer-Mediated Communication' (CMC). CMC offers some affordances that play a vital part in online communication. Bargh and McKenna (2004) emphasize the impacts of anonymity. In addition, comfortable disclosure on sensitive issues and the risk of self-disclosures are also reduced in online communication. Park (2007) argued that the absence of non-verbal cues in an online setting leads toward a better explanation of the non-verbal cues in a textual statement. Walther (1996) defined asynchronous communication as a condition when immediate attention is not required. The findings of Walther and Burgoon (1992) strengthen the notion that the blends of distinctive affordances in CMC contribute to selective self-presentation, develop relational behavior, and promote more positive relational communication. It produces results in the form of hyperpersonal communication. Each affordance bid unique effects in a computer-mediated setting.

Walther (1996) proposed this model that consists of four elements: sender (selective self-presentation) means imparting a strategic impression of oneself among others (Leary & Kowalski, 1990), the receiver (idealization of the partner) Computer-mediated interaction facilitates the maintenance of certain impressions in front of the communication partners (Afifi & Caughlin, 2006), channel (discretionary engagement) there is less likability of making judgments but if the judgment is made then it is more intensive as compared to the judgment made in face to face interaction (Hancock & Dunham, 2001), and feedback loop (self-fulfilling prophecies) as a result of strategic self-presentation and inflated interpretation, the feedback loop is also exaggerated in CMC (Walther, 1996).

Social media users selectively present themselves while posting selfies on social networking sites (Fox & Vendemia, 2016). Selective self-presentation not only helps in impression management (Arkin & Baumgardner, 1986) but also prompts a positive change in self-esteem (Wang et al., 2020). When users selectively present themselves on new media, they tend to focus on the positive aspects which can help them to become more conscious of their ideal identities (Bareket-Bojmel, Moran, & Shahar, 2016).

In view of the foregoing, this study poses the following hypothesis:

H1: Selfie-posting will be positively associated with self-esteem.

Direct and Indirect Effects of Online Positive Feedback

In the present age, people get appreciation in the form of positive comments by sharing content about themselves on social networks that in turn enhance their self-esteem (Bazarova & Choi, 2014; Yang, 2014). Positive feedback improves social media users' self-esteem and in contrast, negative feedback decreases an individual's evaluation of their worth (Valkenburg et al., 2006). The results of another study conducted by Burrow and Rainone (2017) illustrated that positive feedback on Facebook enhanced the self-esteem of the users. Similarly, Wang et al. (2020) found out the significant indirect effects of positive feedback between the relationship of selfie-posting and self-esteem.

According to William James (1890), self-esteem is based on two factors: reflected appraisals and social comparisons. The former factor sheds light on a person's understanding of how others perceive and judge him. As a result of the reflected evaluation process, people start thinking of themselves in the way they believe others think of them (Rosenberg & Morris, 1979). When it comes to latter factor i.e. social comparisons, individuals make positive or negative self-appraisal by comparing themselves with others (Hughes & Demo, 1989).

In a nutshell, self-esteem is a product of positive comments (Pounders et al., 2016). An individual's self-esteem enhances when he is recognized, acknowledged, and esteemed by others (Hong et al., 2017). SNSs are ideal platforms to receive positive feedback that significantly contribute to enhancing self-esteem (Liu et al., 2015; Yang, 2014).

In line with the existing literature, this study posits the following hypotheses:

H2: Selfie posting will be positively associated with online positive feedback.

H3: Online positive feedback will be positively associated with self-esteem.

H4: Online positive feedback plays a significant mediating role in the relationship between selfie-posting and self-esteem.

To summarize, empirical literature suggests that selfie-posting has a positive and direct relationship with self-esteem (Gonzales & Hancock, 2011; Pounders et al., 2016; Toma, 2013; Wang et al., 2020). However, a few studies don't affirm this relationship (Barry et al., 2017; Wang et al., 2017). Besides, positive feedback plays a crucial role in enhancing the self-esteem of social media users (Burrow & Rainone, 2017; Valkenburg et al., 2006; Yang, 2014). In this study, the researchers will empirically verify whether the aforementioned relationships exist in Pakistan.
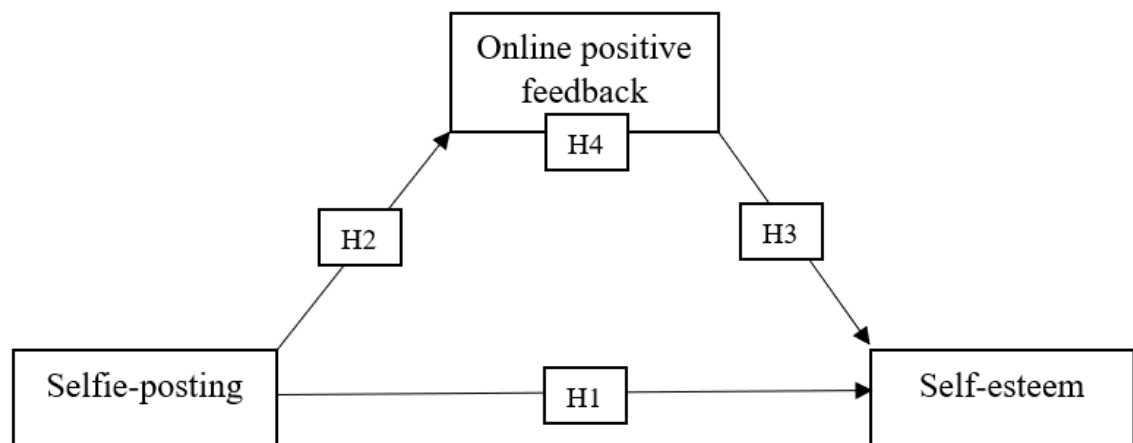

Figure 1. *Proposed Hypothesized Model of the Study*

Materials and Methods

Quantitative methodology vis-à-vis survey method was used to carry out this research. In this regard, a cross-sectional web-based survey design was employed. The population for the study was the university students in Lahore. A convenience sample of respondents was contacted online through a self-administered questionnaire constructed using Google Forms and its URL was shared through WhatsApp in different academic groups. In order to prevent respondents from re-entering the survey site, the 'limit to 1 response' feature in Google Forms was activated. The questionnaire was drafted in English. It included 19 close-ended items. In the end, we received 214 complete responses.

Measurement

Selfie-posting

This study measured selfie-posting with one item which was adopted from the study of Sung et al. (2016). The respondents were asked, "How often would you say that you take and post selfies on social networking sites?". Response categories range from '1 = very infrequently' to '8 = several times a day'.

Online Positive Feedback

Online positive feedback scale was created by combining four items having response categories ranging from (1) strongly disagree to (5) strongly agree. "My friends like my selfies on social networking sites."

Self-esteem

By adopting Rosenberg Self-Esteem Scale (Rosenberg, 1965), this study measured self-esteem on a 4-point scale from (1) strongly disagree to (4) strongly agree. It included ten items such as "I feel that I have a number of good qualities."

Control Variables

Socio-demographic variables such as gender (Male = 156, Female = 58), locality, age, and qualification were included as control variables.

Analytic Strategy

To test the proposed hypothetical model shown in figure 1, structural equation modeling (PLS-SEM) was conducted using Smart PLS 3. This study used the PLS approach due to its ability to provide accurate results with a smaller sample size (Hair et al., 2019). For analysis, bootstrapping estimates were based on 2000 bootstrap samples.

Results

First of all, the researcher tested the measurement model whereby the convergent and discriminant validity was evaluated. As shown in Table 1, the results of convergent validity revealed that the AVE of all constructs, except selfie-posting, was above the lower limit of .50. Whereas internal consistency reliability and composite reliability were above the threshold of .70. Discriminant validity was established through the Fornell-Larcker criterion.

Table 1: *Assessment of convergent & discriminant validity of reflective constructs*

	1	**2**	**3**
1. Selfie-posting	**.766**	-	-
2. Online positive feedback	.704	**.70**	-
3. Self-esteem	.367	.406	**.619**
Composite reliability	.72	.81	.89
Cronbach's alpha	-	.78	.76
Average variance extracted (AVE)	.39	.42	.50

The findings indicated a significant relationship between selfie-posting and self-esteem (β = .247, t = 4.66, p = .000). Thus, H1 was supported. Hypothesis 2 predicted that selfie-posting would be positively related to online positive feedback. H2 was supported demonstrating a direct relationship between selfie-posting and online positive feedback (β = .124, t = 2.16, p = .03). As predicted in hypothesis 3, the association between online positive feedback and self-esteem was significant (β = .082, t = 4.05, p = .000). Hypothesis 3 was also supported.

Table 2: *Results of Direct and Indirect Effects*

Hypotheses Path	*β*	*SD*	*t*	*Sig.*
Selfie-posting -> self-esteem	.247	.045	4.66	.000
Selfie-posting -> online positive feedback	.124	.036	2.16	.03
Online positive feedback -> self-esteem	.082	.071	4.05	.000
Selfie-posting -> online positive feedback -> self-esteem	.138	.023	3.51	.000

For a significant meditational model, indirect effects were evaluated and the findings are showing significant indirect effects of online positive feedback. The results support H4 as it showed significant mediating effects of online positive feedback on the relationship of selfie-posting and self-esteem of social media users (β = .138, t = 3.51, p = .000).

Discussion

The basic purpose of the current research is to examine the influence of selfie-posting on the self-esteem of social media users through the mediation of online positive feedback. Consistent with our hypothesis, a direct relationship is found between selfie-posting and self-esteem. This result is compatible with the hyperpersonal model (Walther, 1996) and provides empirical evidence about the utility of online communication for self-esteem. Through online communication, individuals fulfill their desire to maintain and enhance self-esteem (Valkenburg & Peter, 2011). Youngsters use social media for multiple reasons and one reason for using SNSs is to present themselves in a selective manner. Social media users post their selfies on SNSs to get a positive response and gain public attention from their social circle. As a result, online selective self-presentation generates results in the form of self-esteem. The overall results support the existing literature in this domain (Chang et al., 2019; Pounders et al., 2016; Toma, 2013).

Consistent with the principle of reflected appraisals, positive feedback is found to be significantly correlated with self-esteem. In light of this finding, it can be asserted that human emotions are influenced by others' appraisals. In line with previous studies, online positive feedback is found to have significant mediating effects (Wang et al., 2020; Yang, 2014).

So far as limitations of this study are concerned, this study is limited to university students who were 18-33 years of age. Further research on this topic should focus on a wider age group and include people belonging to other walks of life. This study relied on a cross-sectional online survey. Therefore, this study limits generalizability. In this study, an overwhelming majority of the respondents are male students. Results might be different in the case of the majority of women. Future studies should use content analysis and semiotics to explore this phenomenon. Moreover, further studies may explore the effects of selfie-posting behavior on narracism, body satisfaction, body surveillance, and body esteem. Despite limitations, this study extends previous literature in the domain of selfie-posting. This research study contributes to the existing body of knowledge by revealing a significant relationship between selfie-posting and self-esteem in the context of Pakistan, identifying the mediating role of online positive feedback, and above all providing theoretical support to the hyperpersonal model. The results of this research study found clear support for the phenomenon under consideration. The present findings confirm that selfie-posting on SNSs improves the self-esteem of social media users. In order to get appreciation and positive response, selective self-presentation of personality traits is posted on SNS which ultimately enhances self-esteem.

Conclusion

Antecedent in view, the current study has found overwhelming effects of selfie-posting on one of the major aspects of human personality development i.e. self-esteem. Overall results of this study demonstrated that selfie-posting behavior plays a distinct role in a computer-mediated communication environment. Selfie-posting on social networks not only yields positive feedback but also enhances the self-esteem of social media users. This clearly shows that the phenomenon of selfie-posting brings positive change in human personality as it enhances positive self-image, self-acceptance and self-respect and diminishes self-perception, self-doubt and self-criticism. It can also be inferred from the results of this study that selfie-posting brings positive change in human thinking, boosts self-esteem and provides a sense of validation and acceptance especially when an individual gets appreciation in respect of positive comments, likes and engagement on his selfies. It is pertinent to mention here that the influence of selfie-posting may vary from person to person as external factors such as offline relationship and personal values may influence on self-esteem.

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References

Afifi, W. A. & Caughlin, J. P. (2006). A close look at revealing secrets and some consequences that follow. *Communication Research, 33*(6), 467-488. doi: 10.1177/0093650206293250

Arkin, R. M., & Baumgardner, A. H. (1986). Self-presentation and self-evaluation: Processes of self-control and social control. In R. F. Baumeister (Ed.), *Public Self and Private Self* (pp.75-97). NY: Springer-Verlag.

Bareket-Bojmel L., Moran, S. & Shahar, G. (2016) Strategic self-presentation on Facebook: Personal motives and audience response to online behavior. *Computers in Human Behavior 55*: 788–795. doi: 10.1016/j.chb.2015.10.033

Bargh, J. A., & McKenna, K. Y. A. (2004). The Internet and social life. *Annual Review of Psychology, 55*(1), 573-590. doi: 10.1146/annurev.psych.55.090902.141922

Barry, C. T., Doucette, H., Loflin, D. C., Rivera-Hudson, N., & Herrington, L. L. (2017). "Let me take a selfie": Associations between self-photography, narcissism, and self-esteem. *Psychology of Popular Media Culture*, *6*(1), 48-60. doi: 10.1037/ppm0000089

Bazarova, N. N., & Choi, Y. H. (2014). Self-disclosure in social media: Extending the functional approach to disclosure motivations and characteristics on social network sites. *Journal of Communication, 64*(4), 635-657. doi: 10.1111/jcom.12106

Biolcati, R., & Passini, S. (2018). Narcissism and self-esteem: Different motivations for selfie posting behaviors. *Cogent Psychology, 5*(1), 1437012. doi: 10.1080/23311908.2018.1437012

Burrow, A. L., & Rainone, N. (2017). How many likes did I get? Purpose moderates links between positive social media feedback and self-esteem. *Journal of Experimental Social Psychology*, 69, 232-236. doi: 10.1016/j.jesp.2016.09.005

Chang, L., Li, P., Loh, R. S. M., & Chua, T. H. H. (2019). A study of Singapore adolescent girls' selfie practices, peer appearance comparisons, and body esteem on Instagram. *Body Image*, *29*, 90-99. doi: 10.1016/j.bodyim.2019.03.005

Chua, T. H. H., & Chang, L. (2016). Follow me and like my beautiful selfies: Singapore teenage girls' engagement in self-presentation and peer comparison on social media. *Computers in Human Behavior*, *55*, 190-197. doi: 10.1016/j.chb.2015.09.011

Fox, J., & Vendemia, M. A. (2016). Selective self-presentation and social comparison through photographs on social networking sites. *Cyberpsychology, behavior, and social networking*, *19*(10), 593-600. doi: 10.1089/cyber.2016.0248

Gentile, B., Twenge, J. M., Freeman, E. C., & Campbell, W. K. (2012). The effect of social networking websites on positive self-views: An experimental investigation. *Computers in Human Behavior*, *28*(5), 1929-1933. doi: 10.1016/j.chb.2012.05.012

Gillen, M. M. (2015). Associations between positive body image and indicators of men's and women's mental and physical health. *Body image, 13*, 67-74. doi: 10.1016/j.bodyim.2015.01.002

Gonzales, A. L., & Hancock, J. T. (2011). Mirror, mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior, and Social Networking, 14(*1-2), 79-83.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*. doi: 10.1108/EBR-11-2018-0203

Hancock, J. T., & Dunham, P. T. (2001). Impression formation in computer-mediated communication revisited: An analysis of the breadth and intensity of impressions. *Communication Research, 28*(3), 325-347. doi: 10.1177/009365001028003004

Hassan, S.A.U., Safdar, G. (2022). Relationship between Self-Esteem and Problematic Use of Facebook among University Students. *Annals of Social Sciences and Perspective, 3*(1), 199-217.

Hassan, T.U., Shabir, G., Safdar, G., Hussain, J.S. (2019). Social Media Defy Spiral of Silence Theory and Provides Baseline for new Spiral of Social Media Theory: Ground Perspective. *Pakistan Journal of Social Sciences (PJSS), 39*(4), 1549-1558.

Hong, C., Chen, Z., & Li, C. (2017). "Liking" and being "liked": How are personality traits and demographics associated with giving and receiving "likes" on Facebook? *Computers in Human Behavior 68*, 292–299. doi: 10.1016/j.chb.2016.11.048

Hughes, M., & Demo, D. H. (1989). Self-perceptions of Black Americans: Self-esteem and personal efficacy. *American Journal of Sociology, 95*(1), 132-159. doi: 10.1086/229216

Katz, J. E., & Crocker, E. T. (2015). Selfies and photo messaging as visual conversation: Reports from the United States, United Kingdom and China. International Journal of Communication, *9*, 12.

Leary, M., & Kowalski, R. (1990). Impression management - a literature-review and 2- component model. *Psychological Bulletin, 107*(1), 34-47. doi: 10.1037/0033-2909.107.1.34

Liu Q., Xiaojun, S., & Zongkui, Z. (2015). Self-presentation on social network sites and Ego identity: mediation of online positive feedback. *Chinese Journal of Clinical Psychology*, *23*(06), 1094-1097.

Mehdizadeh, S. (2010). Self-presentation 2.0: Narcissism and self-esteem on Facebook. *Cyberpsychology, Behavior, and Social Networking, 13*(4), 357–364. doi: 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. doi: 10.1016/j.bodyim.2018.08.007

Park, J. R. (2007). Interpersonal and affective communication in synchronous online discourse. *Library Quarterly, 77*(2), 133-155. doi: 10.1086/517841

Pounders, K., Kowalczyk, C. M., & Stowers, K. (2016). Insight into the motivation of selfie postings: Impression management and self-esteem. *European Journal of Marketing, 50*(9). doi: 10.1108/EJM-07-2015-0502

Roosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ. Princeton University Press.

Rosenberg & Morris. (1979). *Society and the adolescent self-image: Conceiving the self.* NY: Basic Book.

Safdar, G. (2021). World Wide Web and Current Scenario of Internet among Pakistani Youth in Information Communication and its Impacts on Cultural Values. *Global Media Journal (Pakistan Edition), 14*(1), 21-32.

Shabir, G., Hameed, Y.M.Y., Safdar, G., Gilani, S.M.F.S. (2014). Impact of Social Media on Youth: A Case Study of Bahawalpur City. *Asian Journal of Social Sciences and Humanities, 3*(4), 132-151.

Shabir, G., Iqbal, Y.W., Safdar, G. (2014). Demographics" Differences in Social Networking Sites Use: What Communication Motives Does it Gratify? *International Journal of Social Work and Human Service Practice, 2*(5), 184-194.

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. doi: 10.1016/j.paid.2016.03.032

Toma, C. L. (2013). Feeling better but doing worse: Effects of Facebook self-presentation on implicit self-esteem and cognitive task performance. *Media Psychology, 16*(2), 199-220. doi: 10.1080/15213269.2012.762189

Valkenburg, P. M., & Peter, J. (2011). Online communication among adolescents: An integrated model of its attraction, opportunities, and risks. *Journal of adolescent health, 48*(2), 121-127. doi: 10.1016/j.jadohealth.2010.08.020

Valkenburg, P. M., Peter, J., & Schouten, A. P. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & behavior, 9*(5), 584-590. doi: 10.1089/cpb.2006.9.584

Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research, 23*(1), 3-43. doi: 10.1177%2F009365096023001001

Walther, J. B., & Burgoon, J. K. (1992). Relational communication in computer-mediated interaction. *Human Communication Research, 19*(1), 50-88. doi: 10.1111/j.1468-2958.1992.tb00295.x

Wang, R., Yang, F., & Haigh, M. M. (2017). Let me take a selfie: Exploring the psychological effects of posting and viewing selfies and groupies on social media. *Telematics and Informatics, 34*(4), 274-283. doi: 10.1016/j.tele.2016.07.004

Wang, Y., Wang, X., Liu, H., Xie, X., Wang, P., & Lei, L. (2020). Selfie posting and self-esteem among young adult women: A mediation model of positive feedback and body satisfaction. *Journal of Health Psychology*, 25(2), 161-172. doi: 10.1177/1359105318787624

Williams, R. (2014), "Women significantly more likely to take selfies than men", available at: www.telegraph.co.uk/technology/news/10788116/Women-significantly-more-likely-totake-selfies-than-men.html

Yang, C. C. (2014). It makes me feel good: A longitudinal, mixed-methods study on college freshmen's Facebook self-presentation and self development (Doctoral dissertation, The University of Wisconsin-Madison).

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior, 24*(5), 1816-1836. doi: 10.1016/j.chb.2008.02.012