FACEBOOK USE, APPEARANCE COMPARISON, BODY DISSATISFACION, AND SELF-ESTEEM IN THAI FEMALE FACEBOOK USERS

Atita Uttravanich[1]

Jon Nicholas Blauw[2]

Abstract: It is well known that social media such as Facebook has gained popularity in recent years with its unique features facilitating communication among people from every part of the world. It can be the free space of self-presentation where users portray their flattering images through well-selected posts. Using correlational research design, this study aims to investigate the direct and indirect relationship between Facebook use, appearance comparison, body dissatisfaction, and self-esteem. Thai female Facebook users (n=171) aged between 20-74 years who subscribe the official page of six biggest provinces of Thailand (Bangkok, Chiang Mai, Nakhon Ratchasima, Nakhon Si Thammarat, Kanchanaburi, and Chonburi) participated in online survey distributed via Facebook messenger. The result from statistical analysis shows that there is no direct relationship between Facebook use, body dissatisfaction and self-esteem. However, the findings indicated that such relationship is mediated by appearance comparison. This means while Thai women are using Facebook, they make appearance comparison on the site, and, thus, their body dissatisfaction increases whereas self-esteem decreases. The findings can be beneficial for Thai people in both research and practice areas. Future research should be conducted to better understand this relationship and to explore it in different populations or other social media platforms.

Keywords: Facebook Use, Appearance Comparison, Body Dissatisfaction, Self-Esteem.

Introduction

Life in modern days has been considerably changed by Information and Communication Technology (ICT). Technology has, indeed, become part of everyday living as it facilitates people's lives globally in terms of career, communication, socialization, and so on. Social media, in the form of social networking sites (SNS), is a new form of community that links people together online, using ICT. SNS users may reunite with old friends or meet new people who live on the other side of the world. In Thailand, there are many social networking sites but according to the Thailand Internet User Profile 2014 (ETDA, 2014), the most popular

[1] M.S. Candidate in Counseling Psychology, Graduate School of Human Sciences, Assumption University, Thailand.
atita.u@gmail.com
[2] Ph. D., Senior Lecturer, Graduate School of Human Sciences, Assumption University, Thailand.
jonblauw@gmail.com

SNS among the Thais is Facebook. Since the site offers opportunities for appearance comparison with posts or photos, current study examined whether exposing to Facebook is linked to body dissatisfaction and low self-esteem in Thai female population.

Objectives
There are two objectives for the study:
1) Current study aimed to investigate direct and indirect influences of Facebook use on users' body dissatisfaction and self-esteem in Thai female users.
2) This study aimed to examine whether appearance comparison has mediator effect on Facebook use, body dissatisfaction and self-esteem in Thai female users.

Literature Review

Facebook Use
Facebook (www.facebook.com) is defined as a free SNS where users can create a profile and communicate with groups of friends through post, 'like', comments, News Feed, and messages. The site aims to connect people as well as function as an open channel for users to express themselves through the site's unique features. It was created by Mark Zuckerberg and his colleagues in early 2004. Apart from allowing users to create a profile, providing a free account to start sharing photos and updates with people, making possible the adding of friends, and allowing the exchange of text messages which also appear in other sites. Since more and more users utilize it as a public space to express their feelings, thoughts, and opinions, Facebook appears to function as a digital self-image in which users create content and engage with it. Many studies in the literature have shown that people tend to present themselves in a positive light online (e.g., Strano and Queen, 2012; Blease, 2015). Sheldon, Abad, & Hinsch (2011) suggested that Facebook is a forum for impression management where comparative status is a matter of competition. Ivcevic and Ambady (2012) demonstrated that the social context is important in forming personality impressions, and impression management seems to be successful specifically in the online context. Thus, it is likely that many users apply impression management through their photographs, especially women. A recent study by Greenwood (2013) reported that more women than men use SNS (71%=W, 62%=M). Furthermore, Strano and Queen (2012) explained that women tend to focus more on physical attractiveness in the photos of their Facebook posts.

Body Dissatisfaction
Body dissatisfaction is the feeling that one does not like one's own physical appearance because it is not the same as how one wishes it to be (Kovar, 2009). It includes a person's negative thoughts about his or her own body, judgments about size, shape, and muscle tone, and generally involves a discrepancy between one's own body type and an ideal body type (Grogan, 2006). It had been reported that 50-70% of adolescent girls (Wertheim & Paxton, 2011) and, similarly, 50% of girls and undergraduate women (Bearman, Presneell, & Martinez 2006; Monteath & McCabe,

1997) felt dissatisfied with their bodies. Body dissatisfaction is identified as one of the most consistent and robust risk factors for eating disorders in both clinical and non-clinical levels (Grabe, Hyde, & Lindberg, 2007; Johnson & Wardle, 2005; Tiggemann, 2005). Body dissatisfaction should be brought into wider attention because those who suffer from its accompanying psychological problems are not only female adults and adolescents, but also young girls (Phares, Steinberg, & Thompson, 2004). This phenomenon happens cross cultures and with women more than men. Research indicated that body dissatisfaction correlates with parents, peers, and media influences.

Appearance Comparison
Appearance comparison is described as the direct comparison between societal and personal standards of appearance (Cohen & Blaszczynski, 2015). To understand appearance comparison, it is necessary to learn about social comparison theory which is the broader theoretical framework. Leon Festinger proposed the social comparison theory in 1954, positing that people in general tend to search for standards to compare themselves with in order to evaluate their progress and to see where they stand. Social comparison occurs in a variety of domains including career, relationships, and appearance. Thompson, Heinberg, Altabe, & Tantleff-Dun (1991) posited that when individuals compare appearance to others, they are more likely to experience body dissatisfaction, eating disorders, and low self-esteem. Body image and self-esteem literature indicated that the media-portrayed thin ideal creates a type of contingency in which women come to believe that their attractiveness is equal to thinness (Stice & Shaw, 1994). This suggests that women tend to perceive the ideal image from media, compare themselves to the same and, without conscious awareness, believe that those body figures are the standards of physical attractiveness that they must attain. This process of appearance comparison seems to have negative effects on self-esteem and body image of women.

Self-Esteem
Self-esteem refers to value people have toward themselves as the evaluative component of self-knowledge. High self-esteem refers to a highly favorable self-evaluation while low self-esteem refers to an unfavorable self-evaluation (Baumeister, Campbell, Krueger, & Vohs, 2003). Self-esteem rose based on events that were connected to social acceptance (Learly, ambor, Terdal, & Downs, 1995). For example, one's self-esteem might be higher when the person is accepted, proved as competent, found attractive by others. In contrast, events that can lead to any kind of rejection tend to drop self-esteem. Taking Facebook as a socialization platform, some studies report the relationship between self-esteem and Facebook use, although recent research have reported mixed findings. Past research has supported the association between self-esteem and body image issues in female adults and adolescents (e.g., Mendelson, Mendelson, & White, 2001; Wade & Cooper, 1999). In Thailand, Pisitsungkagarn, Taephant, and Attasaranya (2014) found that preadolescent girls who reported higher levels of body dissatisfaction and dieting also reported poorer self-esteem.

Relationship between the Key Variables

Past research investigated the relationship between Facebook use and body image and found that the relationship seemed to fit well with prediction derived from social comparison theory (Stronge et al., 2015). This is supported by Fardouly et al. (2015) who reported that Facebook use is associated with body image concerns, being mediated by social comparison. Stronge et al. (2015) reported the opportunity to compare oneself to peers and, therefore, develop higher body dissatisfaction because Facebook evokes appearance awareness among users. Photos that people post on Facebook are not random; they are selected with self-presentation motives, often with an emphasis on attractiveness (Strano, 2008). In order for Facebook users to present an idealized version of the self, the process is also similar to how images on magazines are edited and enhanced before publication (Manago et al., 2008; Zhao, Grasmuck, & Marin, 2008). Caley (2015) asserted that Facebook could cause body dissatisfaction in the comparable level as conventional media did.

Regarding Facebook use and self-esteem, Ellison, Steinfield, & Lampe. (2007) reported that Facebook can be beneficial for individuals who have low self-esteem because it promotes communication and social interaction. It could help these people overcome social barriers such as starting conversation or keeping in touch with friends. Moreover, Gonzales & Handcock (2011) opined that individuals who viewed and updated profile on Facebook reported having high self-esteem. On the other hand, Faraon & Kaipainen (2014) showed in their study that self-esteem negatively correlated with time spent on Facebook as well as number of Facebook friends. They added that as Facebook intensity increases, it increased chances for users to compare themselves to others, which could lead to more risk of being evaluated. The study demonstrates that the relationship between Facebook and self-esteem is significantly mediated by social comparisons on Facebook.

This study hypothesized that 1) Facebook use was directly related to body dissatisfaction and self-esteem among Thai female Facebook users such that the higher the level of Facebook use, the higher is the level of body dissatisfaction and the lower is the level of self-esteem and 2) Facebook use is indirectly related to body dissatisfaction and self-esteem among Thai female Facebook users, being mediated by appearance comparison such that the higher the level of Facebook use, the higher is the level of appearance comparison and, subsequently, the higher is the level of body dissatisfaction and the lower is the level of self-esteem.

Conceptual Framework
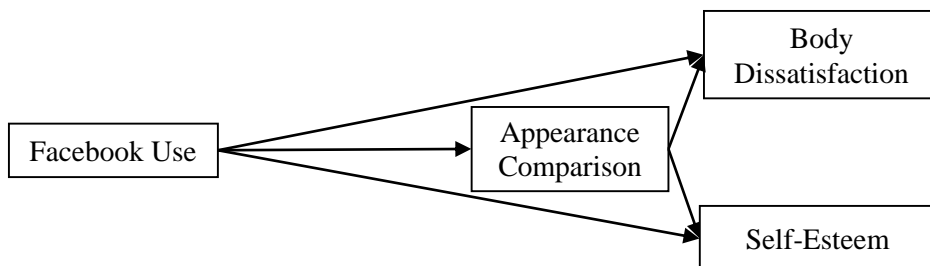
Figure 1: Conceptual Framework of This Study

Method

Participants

The participants of this study were 171 Thai females Facebook users whose age ranging from 20-74 years old (median=28 years). The majority of the participants reported that their hometown was Bangkok (n=79, 46.2%), while the rest reported that they were from different parts of Thailand namely, Chiang Mai (n=6, 3.5%), Nakhon Ratchasima (n=9, 5.3%), Nakhon Si Thammarat (n=4, 2.3%), Chonburi (n=2, 1.2%), Kanchanaburi (n=7, 4.1%), and other provinces (n=64, 37.4%). The plurality of the participants reported that their current location was Bangkok (n=129, 75.4%), whereas the rest reported that they currently live in Chiang Mai (n=1, 0.6%), Nakhon Ratchasima (n=2, 1.2%), Chonburi (n=3, 1.8%), Kanchanaburi (n=3, 1.8%), and other provinces (n=33, 19.3%). None of the participants reported Nakhon Si Thammarat as their current location. The majority of the participants reported that they have either a Bachelor's or Master's degree (n=162, 94.8%). The participants' weight ranged from 37-95 kgs (mean=55.40 kgs). Their reported height ranged from 145-175 cm (mean=159.39 cm). The number of Facebook friends the participants reported having ranged from 6-4,846 (median=555 friends).

Materials

This study employed self-reported online questionnaires in Thai created via Google Form. The survey questionnaire comprised five sections.

Section 1: Demographic Information. Participants were instructed to provide demographic information relative to age, hometown, current location, education level, weight, height, and number of Facebook friends.

Section 2: Facebook Use. Facebook Intensity Scale (FBI) was developed to assess Facebook usage. The questionnaire was obtained from Ellison, Steinfield, and Lampe's (2007). The FBI is an 8-item self-report survey with Likert-type rating scale ranging from 1 = *Strongly disagree* to 5 = *Strongly agree*. Ellison et al. (2007) reported a Cronbach's alpha of .83 for the scale. Faraon and Kaipainen (2014) reported that the scale measures participants' emotional connectedness to the site (e.g., "I would be sorry if Facebook shut down" or "I am proud to tell people I'm on Facebook") and its integration into individuals' daily routine (e.g., "Facebook has become part of my daily routine").

Section 3: Appearance Comparison. The Physical Appearance Comparison Scale–Revised (PACS-R) was developed by Schaefer and Thompson (2014). PACS-R is an 11-item self-report tool using a five-point Likert scale ranging from 0 = *Never* to 4 = *Always* to measure how often individuals make comparisons in appearance aspects (e.g., physical appearance, weight, body shape, body size, body fat, etc.) in different contexts. The questions include "When I'm out in public, I compare my physical appearance to the appearance of others" and "When I meet a new person (same sex), I compare my body size to his/her body size". The authors reported psychometric functioning with a Cronbach's alpha of .97.

Section 4: Body Dissatisfaction. The 8-item Body Shape Questionnaire (BSQ-8C) developed by Cooper, Taylor, Cooper, and Fairburn (1987). The scale consists of items derived from the full version of the BSQ (i.e., items 4, 6, 13, 16, 19, 23, 29,

and 33). The BSQ-8C uses a six-point Likert scale ranging from 1 = *Never* to 6 = *Always*. It is the only version that has been reported with close high sensitivity to change with the full version with Cronbach's alphas ranging from .87 to .92. The scale asks about the feeling of the participants toward their body in the past four weeks, namely "Have you been afraid that you might become fat (or fatter)" and "Has feeling full (e.g., after eating a large meal) made you feel fat". The 34-item Body Shape Questionnaire (BSQ-34) had been translated into Thai and was used in a study by Duangratana (2003). The scale was translated by the author and revised by three supervisors (i.e., psychiatrists and a psychologist). The author reported high in content validity and .93 in reliability.

Section 5: Self-Esteem. Rosenberg Self-Esteem Scale (RSES) was developed by Rosenberg (1965) and has been widely used in many studies. The scale has showed high validity with reliability ranging from .82-.88. RSES is a 10-item self-report questionnaire using a 4-point Likert scale ranging from 0 = *Strongly disagree* to 3 = *Strongly agree*. The questions include "On the whole, I am satisfied with myself" and "At times, I think I am no good at all". RSES has been translated into Thai by Wongpakaran & Wongpakaran (2011) using the translation and cultural adaptation method with reported good internal consistency (Cronbach's alpha=.86).

Instrument Translation

Since the participants of this study were Thai women, it is deemed necessary to translate the full questionnaire from the original English version to Thai. The translation process followed standard translation procedures. After that, both forward- and back-translated versions of the questionnaire were compared to the original English version to check for any discrepancy and consistency.

Data Collection Procedure

Participants of the study were drawn from convenience sampling wherein potential participants were drawn from Facebook users who subscribe to the official Facebook pages from the Thai provinces of Bangkok, Chiang Mai, Nakhon Ratchasima, Nakhon Si Thammarat, Kanchanaburi, and Chonburi. In drawing the participants from listed subscribers, the author considered from the profile name (must be Thai name written in Thai or English) and the profile pictures (must be Thai woman) to ensure the targeted population since the list of subscribers could also be male and/or foreigners. Invitation to participate in the study was sent to potential participants in the form of a brief message via Facebook messenger together with the link to the online survey. Participants were, then, instructed to click on the questionnaire link if they willingly agreed to participate in the study. An informed consent form was made available on the first page of the online questionnaire. Participants who had signified willingness to participate in the study were instructed to start with the first section of the questionnaire (demographic information) until they complete the full questionnaire.

Data Analysis

Upon completion of the data collection process, data analysis was accomplished through the following statistical treatments.

Descriptive Statistics

To analyze the demographic data collected from participants, frequency and percentage distributions were utilized. Means and standard deviations were calculated to analyze participants' scores.

Inferential Statistics

Cronbach's alpha was employed to test the reliability of the current survey questionnaire. Then, path analysis via multiple regression analysis was employed to test the hypothesized direct and indirect influences of Facebook use on body dissatisfaction and self-esteem among Thai female Facebook users, being mediated by appearance comparisons.

Result

After invitation to participate in the study were distributed to 450 female subscribers of Facebook page of six provinces in Thailand via Facebook Messenger, 171 female participants responded to the online survey with response rate of 38%. In order to test the hypothesized direct and indirect relationships, path analysis via regression analysis was conducted. The results of this path analysis are presented in Figure 2.
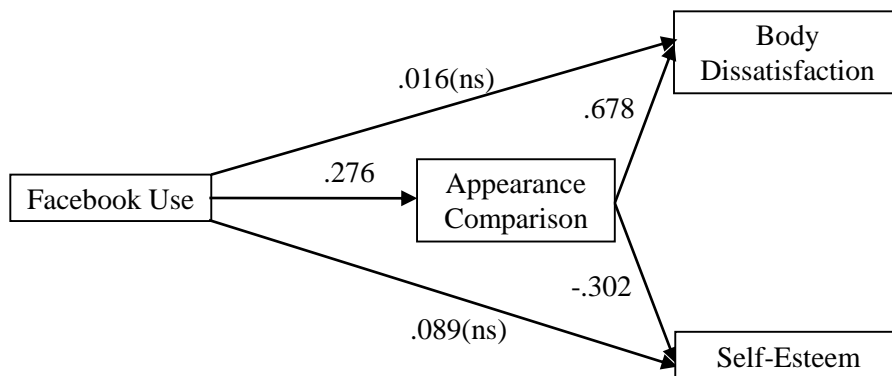
Figure 2: Path Model of Participants' Reported Levels of Body Dissatisfaction and Self-Esteem as A Function of The Direct and Indirect Influences (Being Mediated by Their Appearance Comparison) of Their Reported Level of Facebook Use (Ns = Non-Significant, p>.05)

The results showed that for the study's participants their reported level of Facebook use had no direct effects on their reported levels of body dissatisfaction (Beta=.016) and self-esteem (Beta=.089). The results, however, did show that their reported level of Facebook use had indirect effects on both their reported levels of body dissatisfaction and self-esteem, being mediated by their reported level of appearance comparison. Thus, the more the participants reported their use of Facebook, the more often they reported engaging in appearance comparison (Beta=.276), and subsequently the higher their reported level of body dissatisfaction (Beta=.678) and the lower their reported level of self-esteem (Beta=-.302).

Hypothesis 1 stated that Facebook use is directly related to body dissatisfaction and self-esteem among Thai female Facebook users such that the higher the level of Facebook use, the higher is the level of body dissatisfaction and the lower is the level of self-esteem. Therefore, according to the result of this study, the hypothesis 1 was not supported.

Hypothesis 2 stated that Facebook use is indirectly related to body dissatisfaction and self-esteem among Thai female Facebook users, being mediated by appearance comparison such that the higher the level of Facebook use, the higher is the level of appearance comparison, and subsequently the higher is the level of body dissatisfaction and the lower is the level of self-esteem. Therefore, according to the result of this study, the hypothesis 2 was supported.

Discussion

The results showed that Facebook use had no significant direct relationships with body dissatisfaction or self-esteem. This means that the first hypothesis was not supported. Existing research is not consistent; other studies have reported mixed findings about Facebook use and self-esteem (e.g., Gonzales & Handcock, 2011; Faraon & Kaipainen, 2014; Fardouly et al.; 2015). There are some possible explanations for the null result of the first hypothesis of this study. First, apart from physical appearance-focused content, there are also many different kinds of content presented on Facebook such as news, sport, or travel activities to name just a few. While using Facebook, users are not only being exposed to appearance-focused content, but also other contents. Thus, using Facebook alone might not impact body dissatisfaction or self-esteem in users. Second, even if users are exposed to appearance-focused contents on Facebook, studies have shown there are more portrait images on the site which show shoulders and face only (Haferkamp, Eimler, Papadakis, & Kruck, 2012). So, users might not focus only on the weight and shape from photos posted by their friends while using Facebook, but they might also be responding to other physical features from the photos such as facial features, skin tone, etc.

However, the second study hypothesis was supported. The findings indicated the intensity of Facebook use had indirect relationships with both body dissatisfaction and self-esteem, being mediated by appearance comparison. This means that among the participants who use Facebook, those comparing themselves to other users in terms of appearance tended to feel significantly more dissatisfied with their body and have lower self-esteem than participants who did not engage in appearance comparison. Regarding mediating effects of appearance comparison in the relationship between Facebook use, body dissatisfaction and self-esteem, the path analysis indicated that appearance comparison mediated the relationship. Without appearance comparison, there is no significant relationship between Facebook use and body dissatisfaction; and Facebook use and self-esteem. This mediating relationship is consistent with appearance comparison theory. According to appearance comparison theory, individuals gather information about their own level of physical attractiveness by comparing themselves to others. When the comparison is unfavorable, body dissatisfaction arises (Tantleff-Dunn & Gokee, 2002, as cited in Myers, 2010).

In the current study, the results suggest that some Thai users who are more prone to appearance comparison on Facebook have higher body dissatisfaction and lower self-esteem than other users. The results of this study regarding the links between variables are in line with previous research. For example, Fardouly et al. (2015) also reported that Facebook use is associated with body image concerns, being mediated by social comparison. Furthermore, Faraon & Kaipainen (2014) demonstrated that the path between frequency of Facebook use and self-esteem is significantly mediated by the extent of exposure to social comparisons on Facebook. Myers and Crowther's (2009) study also found the causal effect of appearance comparison on body dissatisfaction as reported that frequent appearance comparison predicts body dissatisfaction among women and adolescents.

This study has implications for both research and practice. Regarding the implications in research, the results of this study can be considered as one of the first to study the relationship of Facebook use, appearance comparison, body dissatisfaction, and self-esteem with a Thai female population. In terms of practical implications, Thai helping professionals can benefit from this study since it provides scientific evidence on the prevalence of body dissatisfaction and low self-esteem among many Thai women as a result of appearance comparison while using Facebook. Moreover, the findings of this study might raise public awareness of the possible negative impact of excessive Facebook use and appearance comparison. In the larger scale, this study can contribute to governmental and non-governmental organizations that are committed to improving body satisfaction and self-esteem of Thai women.

As with all other studies, there are limitations to be noted in the present study as well. The first and foremost is the issue regarding measuring Facebook use. Recent research on Facebook is relatively new compared to other areas and the instruments for measuring Facebook use are still developing. The limitations of instrument might have influenced the results of this study, as shown that Facebook use alone has no direct relationship with both dependent variables, body dissatisfaction and self-esteem. Therefore, the results of this study should be taken with consideration. The second limitation is the data collection procedure. Since the online self-report questionnaire was used in this study, response bias cannot be avoided. Participants might respond to the survey in a socially desirable manner to meet normative expectations which might not be consistent with their actual attitudes. That is, in order to meet social expectation, participants might report lower body dissatisfaction and higher self- esteem than they actually have. Also, since this is not an experimental study, the effect of Facebook use over the users might vary because, as discussed in Fardouly et al.'s (2015) study, the content appearing on the users' Newsfeed might be different from day-to-day which might or might not evoke the feeling of dissatisfaction from users. Another problem that is found in many studies with online surveys is that the response rate is low and the respondents of the survey might not be the actual population targeted. Lastly, as this study is a quantitative study, it cannot gather in-depth information from the respondents, unlike qualitative research methods. For example, this study could not report the content of Facebook that users most engage in while using Facebook. Thus, the author does not know exactly which content induces appearance comparison, body dissatisfaction, and low self-esteem

from the participants.

Future research should, firstly, study the most effective way to measure Facebook use since research has been using different dimensions (e.g., frequency, time spent, number of Facebook friends), resulting in mixed findings. Another way to improve the study in this area is that future research might need to develop a standardized measurement specifically for measuring Facebook use.

Second, future research might find another method to reach the targeted population. One method that can be done is that before sending the online survey link, researcher might ask the participants whether they come from or now live in the six provinces to ensure that they are actually the population of study. Moreover, future research might need to find other methods to attract users to participate in order to increase response rates.

Third, further study might employ qualitative research methods to gather more detailed data, because this study is quantitative study. The importance of conducting qualitative study is that it will allow a close examination of how users actually interact and engage in Facebook.

Last, the author would like to recommend future studies to examine the relationship of Facebook use, body dissatisfaction, and self-esteem in other populations or SNSs. Although previous research indicated that body dissatisfaction in women across cultures is more prevalent than in men, body dissatisfaction in men is increasing considerably according to Fardouly et al. (2015). Additionally, further research might try to explore the relationship other platforms such as Instagram, because it is also popular among the Thais (ETDA, 2014). Furthermore, Instagram is more image-oriented than Facebook so it is possible that users' appearance comparison, body dissatisfaction, and self-esteem can be evoked while being exposed every day to a number of photos posted by other users.

Conclusions

Billions of Facebook users around the world are using Facebook (Facebook, 2015) and it is the most popular SNS in Thailand (ETDA, 2014). Anyone walking around anywhere in Thailand can see that Thai people are using Facebook frequently. This study provided scientific evidence that could be beneficial for Thai women who use Facebook. The findings of this study indicate that Facebook use might have a negative impact on Thai female Facebook users in terms of appearance comparison, body dissatisfaction and self-esteem. It is reported that the more they engage in Facebook use, the more appearance comparison they make, and subsequently the more they feel dissatisfied with their body and the less self-esteem they have. Considering the popularity of the site, it is necessary for future research to explore and examine users' attitudes and impacts of the site with improved research methodology.

References

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.

Bearman, S. K., Presnell, K., & Martinez, E. (2006). The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence, 35,* 217–229.

Blease, C. (2015). Too many 'friends,' too few 'likes'? Evolutionary psychology and 'Facebook depression'. *Review of General Psychology,* 19(1), 1–13.

Caley, D. (2015, July). *Does Facebook influence body image?* Retrieved from BioMed Central at http://blogs.biomedcentral.com/on-health/2015/07/17/face book-influence-body-image/

Cohen, R., & Blaszczynski, A. (2015). Comparative effects of Facebook and conventional media on body image dissatisfaction. *Journal of Eating Disorders*, 2(3), 23.

Cooper, P. J., Taylor, M. J., Cooper, Z., & Fairburn, C. G. (1987). The development and validation of the Body Shape Questionnaire. *International Journal of Eating Disorders, 6,* 485–494.

Duangratana, K. (2003). *Body image and related factors of female students in upper secondary school under the Office of the Basic Education Commission, Ministry of Education in Bangkok Metropolis* (Unpublished master's thesis). Chulalongkorn University, Bangkok, Thailand.

Electronic Transactions Development Agency [ETDA]. (2014). Thail*and Internet User Profile 2014* (1st ed.). Retrieved from http://www.etda.or.th/etda_website/ files /system/ IUP-pocketA5-050814.pdf

Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The benefits of Facebook 'friends': Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication, 12*(4), 1143–1168.

Facebook. (2015, February 23). *Company information.* Retrieved from Facebook: http:// newsroom.fb.com/company-info/

Faraon, M., & Kaipainen, M. (2014). *Much more to it: The relation between Facebook usage and self-esteem.* Proceedings of the 2014 IEEE 15th International Conference on Information Reuse and Integration (IEEE IRI 2014).

Fardouly, J., Diedrichs, P., Vartanian, L., & Halliwell, E. (2015). Social comparisons on social media: The impact of Facebook on young women's body image concerns and mood. *Body Image, 13,* 38–45. doi:10.1016/j.bodyim.2014.12.002

Festinger, L. (1954). A theory of social comparison processes. *Human Relations, 7*(2), 117-140.

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. doi:10.1089/cyber.2009.0411

Grabe, S., Hyde, J. S., & Lindberg, S. M. (2007). Body objectification and depression in adolescents: The role of gender, shame, and rumination. *Psychology of Women Quarterly, 31,* 164–175. doi:10.1111/j.1471-6402.2007.00350.x

Greenwood, D. N. (2013). Fame, Facebook, and Twitter: How attitudes about fame predict frequency and nature of social media use. *Psychology of Popular Media Culture,* 222–236.

Grogan, S. (2006). Body image and health: Contemporary perspectives. *Journal of Health Psychology,* 523–530. Retrieved May 3, 2015 from http://www.ufjf.br/

labesc/files/2012/03/Journal-of-Health-Psychology_2006_Body-Image-and-Health-contemporary-perspectives.pdf

Haferkamp, N., Eimler, S. C., Papadakis, A., & Kruck, J. V. (2012). Men are from Mars, women are from Venus? Examining gender differences in self-presentation on social networking sites. *Cyberpsychology, Behavior & Social Networking, 15*(2), 91–98.

Ivcevic, Z., & Ambady, N. (2012). Personality impressions from identity claims on Facebook. *Psychology of Popular Media Culture,* 38–45.

Johnson, F., & Wardle, J. (2005). Dietary restraint, body dissatisfaction, and psychological distress: A prospective analysis. *Journal of Abnormal Psychology, 114*(1), 119–125. doi:10.1037/0021-843x.114.1.119

Kovar, A. (2009). *Effects of media on body image.* Retrieved March 8, 2015 from http://healthpsych.psy.vanderbilt.edu/2009/BodyImageMedia.htm

Manago, A. M., Taylor, T., & Greenfield, P. M. (2012). Me and my 400 friends: The anatomy of college students' Facebook networks, their communication patterns, and well-being. *Developmental Psychology, 48*(2), 369–380. doi:10.1037/a0 026338.

Mendelson, B. K., Mendelson, M. J., & White, D. R. (2001). Body-Esteem Scale for adolescents and adults. *Journal of Personality Assessment, 76*(1), 90–106. doi:10.1207/s15327752jpa7601_6

Myers, T. A. (2010). *The impact of social comparison on body dissatisfaction in the naturalistic environment: The roles of appearance schema activation, thin-ideal internalization, and feminist beliefs* (Unpublished doctoral dissertation). Kent State University, Kent, Ohio, USA.

Myers, T. A., & Crowther, J. H. (2009). Social comparison as a predictor of body dissatisfaction: A meta-analytic review. *Journal of Abnormal Psychology, 118,* 683–698.

Phares, V., Steinberg, A. R., & Thompson, J. K. (2004). Gender differences in peer and parental influences: Body image disturbance, self-worth, and psychological functioning in preadolescent children. *Journal of Youth and Adolescence, 33,* 421–429.

Pisitsungkagarn, K., Taephant, N., & Attasaranya, P. (2014). Body image satisfaction and self-esteem in Thai female adolescents: The moderating role of self-compassion. *International Journal of Adolescent Medicine and Health,* 26(3), 333-338.

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

Schaefer, L. M., & Thompson, J. K. (2014). The development and validation of the Physical Appearance Comparison Scale-Revised (PACS-R). *Eating Behaviors, 15*(2), 209–217.

Sheldon, K., Abad, N., & Hinsch, C. (2011). A two-process view of Facebook use and relatedness need-satisfaction: Disconnection drives use, and connection rewards it. *Journal of Personality and Social Psychology,* 766–775.

Stice, E., & Shaw, H. E. (1994). Adverse effects of the media-portrayed thin-ideal on women and linkages to bulimic symptomatology. *Journal of Social and Clinical Psychology, 13,* 288–308.

Strano, M. M. (2008). User descriptions and interpretations of self-presentation through Facebook profile images. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 2*(2), article 5. Retrieved April 5, 2010 from http://cyberpsychology.eu/view.php? cisloclanku=2008110402&article=5.

Strano, M. M., & Queen, J. (2012). Covering your face on Facebook. *Journal of Media Psychology,* 166–180.

Stronge, S., Greaves, L., Milojev, P., West-Newman, T., Barlow, F., & Sibley, C. (2015). Facebook is linked to body dissatisfaction: Comparing users and non-users. *Sex Roles,* 200–213.

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1991). The Physical Appearance Comparison Scale (PACS). *The Behavior Therapist, 14,* 174.

Wade, T. J., & Cooper, M. (1999). Sex differences in the links between attractiveness, self-esteem, and the body. *Personality and Individual Differences, 27,* 1047–1056.

Wertheim, E. H., & Paxton, S. J. (2011). Body image development in adolescent girls. In T. F. Cash & L. Smolak (Eds.), *Body image: A handbook of science, practice, and prevention (*pp. 76–84). New York, NY: The Guilford Press.doi:10.1111/1529-1006.01431

Wongpakaran T., & Wongpakaran, N., (2011). Confirmatory Factor Analysis of Rosenberg Self-Esteem Scale: A Study of Thai Student Sample. *Journal of the Psychiatric Association of Thailand* 2011, 56(1): 59-70.

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior, 24*(5), 1816–1836.