

REVIEW ARTICLE

SOCIAL MEDIA AND ITS RELATIONSHIP WITH SELF-ESTEEM AMONG ADOLESCENTS: A SYSTEMATIC REVIEW

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ABSTRACTS

Social media has a strong influence on life, health, communication, interests as well as psychology among adolescents. It has effect both negative and positive effect on self-esteem. The aim of this study was to conduct systematic review about the relationship between social media use and self-esteem among adolescents. Four electronic databases were employed for the literature search: PubMed, Google Scholar, Scopus, and Science Direct. The keywords were used in this study based on MeSH, that were "social media" OR "social networking sites" AND "digital era" OR "technology era" OR "digital era" AND "self-esteem" AND "adolescence". The inclusion criteria of the articles were limited in English language, published between 2019 and 2023, participants were adolescents. The articles were excluded from the study if it used non-English language, participants were adults, not original articles, and not published and reported as thesis or dissertation. This study following PRISMA. Initial studies that include in this review were 1791 articles, consisting of PubMed: 942 articles, Google Scholar: 400 articles, Scopus: 126 articles, and Science direct: 323 articles. We removed duplicate articles and screened the article based on inclusion and exclusion criteria. Finally, there are 20 articles included in this study. There were 14 articles showed that there was relationship between social media and self-concept. Social media can increase self-esteem among adolescents. This study can be evidence for nursing intervention to increase self-esteem among adolescents.

Keywords: social media, self-esteem, adolescents, systematic review

INTRODUCTION

Social media has now become the biggest activity carried out by adolescent in everyday life¹. Social media has a strong influence on life, health, communication, interests as well as psychology among adolescents². Data showed that 90% of adolescent use social media at the age of 13-17 years, and use at least one type of social media².

Social media addiction had effect on mental health among adolescents. One of the negative impact on social media addiction among adolescents was emotional problem, especially in self-esteem³. However, there were previous studies also showed that social media can increase the self-worth⁴. Self-esteem is defined by individual interpersonal experiences related to beliefs about oneself and other people's emotional responses to these beliefs⁵. Social media users among adolescents reported feel connected and decrease their loneliness due to their low self-esteem. Social media become social

capital among adolescents with low self-esteem to increase their mood and increase their self-worth². The relationship between social media and maladaptive behaviour has been widely studied in various countries⁶⁻⁸. Furthermore, adolescents with social media addiction cause unhealthy lifestyles, increase risk sexual behaviour, high tension, psychological effects and they tend to maladaptive behaviour and always compare their life with others and other-oriented. These conditions can decrease self-worth as well as self-esteem. Moreover, female adolescents also tend to have lower self-esteem than male adolescents. They use the media social to boost their mood^{2,9}.

There are several studies about relationship between social media addiction and self-esteem among adolescents^{2,3,6,10,11}. It was needed to report these studies. In addition, there were many contradictive studies about the relationship between social media use and self-esteem. Some studies mention that it had positive effect¹²,

however there were also some studies mentioned that it had negative effect on self-esteem¹³. So, the aim of this study was to conduct systematic review about the relationship between social media use and self-esteem among adolescents. This study was needed to provide evidence based of social media use and mental health related to self-esteem among adolescents. It can be used as strategy for managing self-esteem among adolescents.

METHODS

Four electronic databases were employed for the literature search: PubMed, Google Scholar, Scopus, and Science Direct. The keywords were used in this study based on MeSH, that were “social media” OR “social networking sites” AND “digital era” OR “technology era” OR “digital era” AND “self-esteem” AND “adolescence”. The inclusion criteria of the articles were limited in English language, published between 2019 and 2023, participants were adolescents. The articles were excluded from the study if it used non-English language, participants were adults, not original articles, and not published and reported as thesis or dissertation. This study following PRISMA to report the study results¹⁴. Final article was evaluated using the JBI critical checklist. It should obtain score more than 50%¹⁵ (Table 1).

RESULTS

Initial studies that include in this review were 1791 articles, consisting of PubMed: 942 articles, Google Scholar: 400 articles, Scopus: 126 articles, and Science direct: 323 articles. We removed duplicate articles and screened the article based on inclusion and exclusion criteria. Finally, there are 20 articles included in this study (Figure 1).

Table 2 showed the results of this study. The most articles mentioned that social media use in adolescents has a significant relationship with feelings of self-worth and it also had positive correlation with self-esteem^{4, 10, 11, 16-26}; There were few articles mentioned that social media use and self-esteem in adolescents are negatively correlated^{24, 27-29}.

The kinds of social media also mentioned in the articles. Snapchat show a positive association with self-worth in adolescents³⁰. Meanwhile, there was one study mentioned that Instagram had negative effect on self-esteem³¹ and TikTok had effect on low self-esteem of women with fat or thin bodies³².

The results showed that most of predominant age in the articles were between 10-16 age years old and gender was predominantly with girl²⁸. There were studies mentioned that social media use by students is related to self-worth and correlates with academic achievement^{24, 27}.

In term of instrument that was used to assess self-esteem, 16 studies used the Rosenberg Self-Esteem Scale^{10, 16, 22-24, 26, 29-33}. others tool were a questionnaire from Mendelson, White, and Mendelson's Body Esteem⁴; the physical appearance using the Self-Description Questionnaire²⁸; self-esteem scale³⁴, Comparative Physical Appearance Scale²⁰. Ostracism Online paradigm²¹, self-perception profile for adolescents¹⁷. Different questionnaire can lead to various self-esteem results, and diverse social media usage have an impact on the overall findings and recommendations.

Table 1 showed risk of bias of final article. All of the articles had score more than 50% based on JBI critical appraisal checklist.

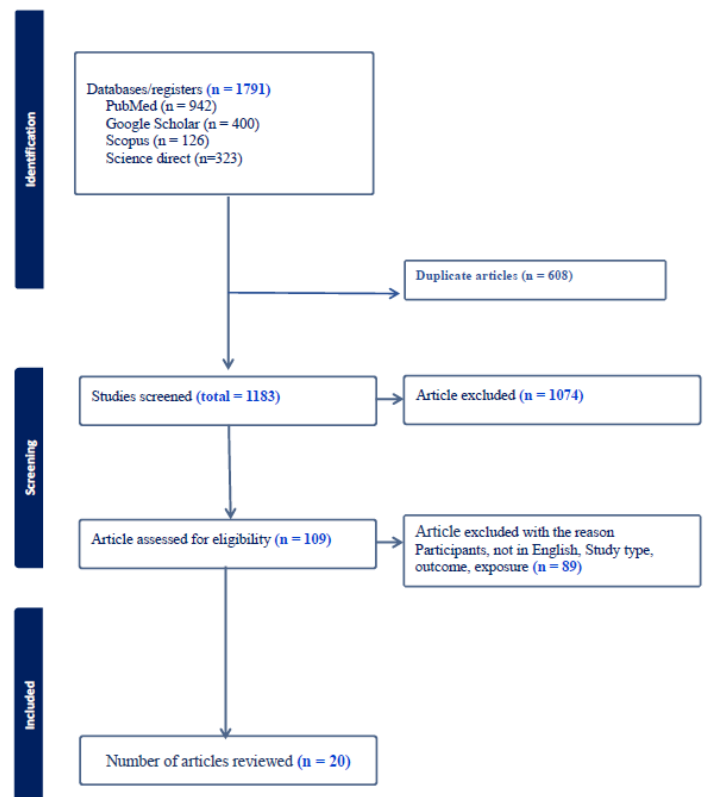


Figure 1. Flowchart for self-esteem of social media using PRISMA

Table 1 Risk of Bias

Source	Score									Total
	1	2	3	4	5	6	7	8	9	
Cross-sectional study										
(Chang et al., 2019)	√	√	√	√	√	√	√	√	√	100.0%
(Ciacchini et al., 2023)	√	√	√	√	√	√	√	√	√	100.0%
(Fernandes et al., 2021)	√	-	√	√	√	√	√	√	√	87.5%
(Lake Yimer, 2023)	√	-	√	√	√	√	√	√	√	87.5%
(Martinez-Pecino & Garcia-Gavilán, 2019)	√	-	√	√	√	√	√	√	√	87.5%
(Steinsbekk et al., 2021)	√	√	√	√	√	√	√	√	√	100.0%
(Prieler et al., 2021)	√	√	-	√	√	√	√	√	√	87.5%
(Timeo et al., 2020)	√	-	-	√	√	√	√	√	√	75.0%
(Fitzpatrick et al., 2019)	√	√	√	√	√	√	√	√	√	100.0%
(Uram & Skalski, 2022)	√	√	√	√	√	√	√	√	√	100.0%
(Midgley et al., 2021)	√	-	√	√	√	√	√	√	√	87.5%
(Fox et al., 2021)	√	-	√	√	√	√	√	√	√	87.5%
(Romero-Rodríguez et al., 2020)	√	-	√	√	√	√	√	√	√	87.5%
(Pop et al., 2022)	√	√	-	√	√	√	√	√	√	87.5%
(Meeus et al., 2019)	√	√	√	√	√	√	√	√	√	100.0%
(Ma, 2022)	√	√	√	√	√	√	√	√	√	100.0%
(Vall-Roqué et al., 2021)	√	√	√	√	√	√	√	√	√	100.0%
(Mann & Blumberg, 2022)	√	√	√	√	√	√	√	√	√	100.0%
(Pérez-Fuentes et al., 2019)	√	√	√	√	√	√	√	√	√	100.0%
Quasy-Experiment study										
(Ribeiro et al., 2020)	√	-	√	√	-	√	√	-	-	67.7%

Cross-sectional study

1. Were the criteria for inclusion in the sample clearly defined?; 2. Were the study subjects and the setting described in detail?; 3. Was the exposure measured in a valid and reliable way?; 4. Were objective, standard criteria used for measurement of the condition?; 5. Were confounding factors identified?; 6. Were strategies to deal with confounding factors stated?; 7. Were the outcomes measured in a valid and reliable way?; 8. Was appropriate statistical analysis used?.

Experiment study

1. Is it clear in the study what is the “cause” and what is the “effect” (i.e. there is no confusion about which variable comes first)?; 2. Was there a control group?; 3. Were participants included in any comparisons similar?; 4. Were the participants included in any comparisons receiving similar treatment/care, other than the exposure or intervention of interest?; 5. Were there multiple measurements of the outcome, both pre and post the intervention/exposure?; 6. Were the outcomes of participants included in any comparisons measured in the same way?; 7. Were outcomes measured in a reliable way?; 8. Was follow-up complete and if not, were differences between groups in terms of their follow-up adequately described and analyzed?

Table 2. Description of self-esteem of social media users in adolescents

Reference	Study Aims	Sample/location	Study design/ Data collection tool	Analysis	Result
(Chang et al., 2019)	Analyze the relationships between the numerous Instagram selfie habits of adolescent girls and their self-esteem	303 teenage females from Singapore's secondary schools. aged 12-14 years (61%) and 15-16 years (38%), respectively.	Cross sectional 1. Comparative physical scale by Thompson, Heinberg and Tantleff-Dunn 2. Side direction comparisons were measured with two items adopted from Fardouly and Vartanian (2015). 3. Scale of respect for the body by Mendelson, White and Mendelson	Multiple regression analysis,	Comparing performance with peers leads to a completely negative relationship between audience and participants in terms of self-esteem. The association between uploading selfies and self-confidence was strong and unaffected by peer ratings of appearance.
(Ciacchini et al., 2023)	Researching the relationship between the psychological health of social media users and internet abuse in the first year of	265 school students in Italy; aged 14-22 years	Cross-sectional 1. Bergen Addiction Scale 2. Rosenberg's Self-Esteem Scale	Relationship test Spearman correlation, Mann-Whitney test and Kruskal-	1. Significant social media addiction affected 11% of individuals, predominantly women (59%). 2. Social media presence and activity control in performing other daily

	the COVID-19 outbreak		3. Classmate Social Isolation Questionnaire 4. State and Trait Anxiety Inventories	Wallis's test with Dunn, chi-square test or Fisher's exact test	activities were influenced by gender. 3. Self-measurement shows a significant relationship to internet addiction and social media anxiety and self-esteem
(Fernandes et al., 2021)	To investigate whether problematic internet use is associated with emotional health in specific countries and, more importantly, whether mental distress is a predictor.	1182 people in total, with a mean age of 20.52	Compulsive Internet Use Scale; Kessler Mental Illness Scale; Social media use questionnaire; Social media use dependence scale; Rosenberg's self-esteem scale	Multiple regression analysis,	Teenagers' problematic Internet use in the Philippines and Turkey has significantly different scores. Online gambling addiction is relatively high among adolescents in Turkey, but significantly higher among youth from the Philippines. Problematic internet use is consistently affected by psychological distress, loneliness, and low self-esteem
(Lake Yimer, 2023)	Explore the relationship of social media use online, Mental health, and academic performance	A total of 204 respondents consisting of (126 males and 78 females, aged 14-27 years)	1. Beck Depression Inventory by (BDI) 2. Social Anxiety Scale in Adolescents (SAS-A) 3. Self-Esteem Scale by Rosenberg	Descriptive and Pearson product correlation coefficient, One-way ANOVA	Student academic achievement is strongly and negatively related to online social media use. The use of Facebook, Whatsapp, and Telegram is associated with mental health in the form of depression. Facebook use is strongly and negatively related to social anxiety and self-esteem in students. Female students have lower self-esteem and are more depressed than male students when using social media.
(Martinez-Pecino & Garcia-Gavilán, 2019)	Investigation of the relationship between liking other people's posts and problematic use of Instagram	244 youths were the participants.	1. PFU Scale 2. Rosenberg self-esteem scale that	Linear regression analysis	The "likes" on social media have a huge impact on people with high self-esteem. Conversely, the effect of "Like" activity has a lower effect on people with lower self-esteem.
(Steinsbekk et al., 2021)	(i) Self-oriented use of social media predicts increased self-esteem in physical appearance, (ii) Use of other-oriented social media can predict a decrease in self-esteem related to physical appearance. (iii) adolescents with higher visual self-esteem are more independent in using social media (iv) adolescents with low self-esteem reduce the use of social media.	Children were aged 10, 12 and 14 years (n=725) in Trondheim, Norway	1. Self-Description Questionnaire 2. Adolescent Self-Perception Profile scale.	Random Intercept Cross-lagged Panel Model test	1. Among girls only, increased use of other social media in 10-12 year olds and 12-14 year olds indicated lower self-esteem about their appearance. 2. Self-oriented social media use had no impact on appearance and there was no evidence of a cross-relationship between appearance and social media use.

(Prieler et al., 2021)	Knowing the relationship between social comparison with physical appearance on social media and feelings of self-worth in adolescents in cross-cultural contexts	Respondents in this study were early and middle adolescents aged between 12-16 years, as many as 981 people.	1. large-scale international survey The Self-Esteem Scale by Crocker et al (2003). 2. Thompson, Heinberg, and Tantleff's 7-element Scale of Physical Appearance	Structural equation modeling (SEM)	The dependence of self-esteem on social acceptance and the use of cultural context to examine the impact of SNS use on body image shows a positive correlation for all European countries except Korean women
(Timeo et al., 2020)	adapted Italian preadolescents were given the Ostracism Online paradigm to study the effects of social media exclusion.	There were 167 preadolescent participants (78 males, mean age = 11.47 years, standard deviation = 0.63, range 10-14)	Survey, the Ostracism Online paradigm	the linear models	The group of early adolescents who received fewer "likes" than their peers reported experiencing negative feelings. In addition, the social bonding approach can lead to a more rapid mental health recovery than individuals who experience exclusion on social media
(Fitzpatrick et al., 2019)	to discuss connections between media use and several wellbeing measures in a sample of Canadian teens that is nationally representative	47,203 pupils from Catholic, private, or public schools across all of Canada	Survey; self-esteem scale created by Rosenberg	linear regression models test	Internet use was associated with lower self-esteem; Academic success was negatively correlated with playing video games, and internet use was negatively correlated with self-esteem.
(Ribeiro et al., 2020)	determine the effect of the "Self-Esteem Strengthening" intervention on "self-efficacy" in nursing students conducted through Facebook social media.	264 students	Quasi-experimental study design; Rosenberg Self-Esteem Scale (RSES) and General Perceived Self-Efficacy Scale	Anderson-Darling and Levene test,	1. A total of 74 people (28.03%) participated in the intervention provided by the researcher and carried out post-test measurements. 2. Rosenberg's self-esteem and self-efficacy scores were much higher after the administration of the intervention with values (p = 0.026 and p = 0.001 respectively) indicating the success of the intervention.
(Uram Skalski, 2022)	Demonstrated a relationship between addiction to Facebook use, loneliness, FOMO, feelings of self-worth, and quality of life.	309 people, ages 18 to 70	Life Satisfaction Scale, Rosenberg's Self-Esteem Scale (RSES), de Jong Gierveld's Loneliness Scale, Fear of Losing Scale, Bergen's Facebook Addiction Scale	Statistical test in the form of The Kolmogorov-Smirnov test, Levene's test, t-test, The Pearson's R correlation analysis, regression analysis	1. Participants with low FoMO performed much better than those with high FoMO in terms of self-esteem and life happiness. 2. Participants with low FoMO scored considerably lower than those with high FoMO in terms of loneliness and Facebook addiction
(Midgley et al., 2021)	Researchers want to examine how people create activities and react to social comparisons on social media.	as many as 798 responses participated in the study	Rosenberg Self-Esteem Scale Instrument 10 items (10-RSES); 20 items Positive and Negative Influence Schedule (HOT; Watson, Clark, & Tellegen, 1988); five	An intercept-only multilevel model test; ANOVA	1. Teenagers experience lower self-evaluations after doing social comparisons on social media. 2. Social comparisons made by adolescents and clarifying the function of self-esteem in the online comparison process show

				items Satisfaction with Life Scale		how comparisons made on social media differ from comparisons made in other contexts.
(Fox et al., 2021)	examined how taking photos of oneself or objects affects women	women (N = 120, Mage = 19.87)		the Twenty Statements Test (TST); 20-item State Self-Esteem Scale (SSES)	a two-way MANCOVA	<ol style="list-style-type: none"> 1. People who take selfies show higher levels of self-objectification, lowered self-esteem, and lowered mood than people who take pictures of objects. 2. Selfies are also associated with reduced competition on social media, increased activity of "tags" that disparage images of other women.
(Romero-Rodríguez et al., 2020)	examines the impact of addictive Instagram use on self-esteem among physical education students.	undergraduate students (n = 385)		Cross-sectional study design; the instruments used in this research are the Social Media Intensity Scale (SMIS); Smartphone Addiction Scale (SAS-SV); Rosenberg Self-Esteem Scale (RSES) Self-esteem	T test; the Kolmogorov-Smirnov test ;	<ol style="list-style-type: none"> 1. Age and gender are determining factors for problematic smartphone use. 2. High correlation between Instagram usage intensity and smartphone addiction. 3. The influence of smartphones on addiction and the impact on student self-esteem is a crucial aspect. Conversely, the frequency of using Instagram has no effect on one's perception of self-worth.
(Pop et al., 2022)	Determine whether young SNS users experience loneliness, favorable body image, low self-esteem, and the connection between these problems.	427 professionals	health	The Loneliness Scale adopted from UCLA, the Body Self-Esteem Scale for Teens and Adults, and the Rosenberg Self-Esteem Scale (RSES)	Kolmogorov-Smirnov test; Kruskal-Wallis H test ; Multiple linear regression	<ol style="list-style-type: none"> 1. Individual use of the Snapchat application is strongly correlated with self-esteem, while use of the TikTok application was found to be negatively correlated with a person's weight status. 2. More than 75% reported that regular exercise can reduce weight or prevent weight gain in a person. 3. Nearly half of students have moderate to severe levels of loneliness as a result of using social media. 4. It is proven that age and gender are substantial variables on loneliness and depression scores. 5. the amount of time spent on social media by older people is greater than that of younger users. 6. Boys believe they have better physical and mental health than girls
(Meeus et al., 2019)	Investigate how social media helps younger teenagers develop their sense of self.	(Total respondent= 725, Mage = 11.61, SD = 1.01)		a type of cross-sectional survey research; measuring attitudes towards the use of media and technology adopted from Rosen et al. (2013); and the Rosenberg 10-item self-esteem scale	zero-order correlations; t tests	<ol style="list-style-type: none"> 1. Disclosed a link between users' needs for popularity and their online popularity, which was then found to be detrimental to their self-esteem. 2. Users in their early teens who express themselves online may receive comments such as "likes" on social media. Although the positive correlation between flattering comments and their self-esteem was positive, they also appeared to increase reliance on

(Ma, 2022)	Examine the connections between various internet activities (such as social contact, entertainment, and information searches) and self-esteem.	193 students, aged 12 to 19, were present.	The 10-items Rosenberg self-esteem scale;	t-test and chi-square preliminary test	social approval, which was paradoxically linked to lower self-esteem.. 1. Gender has an impact on contact activity on social media and self-esteem. 2. Women report higher levels of self-esteem and play an active role in social contact activities than men. 3. Different online behavior as a predictor for understanding the consequences of using social media among adolescents.
(Vall-Roqué et al., 2021)	determine how restrictions on outside activities during the COVID-19 outbreak affect use of social networking sites (SNS) and see whether SNS use is associated with body image problems and low self-esteem in individuals.	There are 2601 women in Spain, ranging in age from 14 to 35	The EDI-3's subscales measuring the desire for thinness and body dissatisfaction; the Rosenberg Self-Esteem Scale (RSES);	Chi-square tests; One-way ANOVA; A Wilcoxon signed rank	1 During the lockdown, there was a noticeable rise in the frequency of using various social media applications (Instagram, YouTube, TikTok, Twitter, and Facebook). This increase was observed in terms of the number of women who started following Instagram profiles that emphasize appearance, as well as the overall frequency of using social networking sites (SNS). 2 In the age group of 14 to 24, a significant correlation was found between the use of Instagram and negative body image-related factors such as body dissatisfaction, aspiration for thinness, and low self-esteem. Additionally, in the older age bracket of 25 to 35, a robust connection was identified between Instagram usage and the desire to attain a thin body shape. 3 Specifically within the 25 to 35 age group, the act of following another individual's Instagram account that primarily centers on appearance was linked to experiencing body dissatisfaction and having a desire to achieve a slim body.
(Mann & Blumberg, 2022)	studied the effect of several variables including age, self-esteem, use of social media, online self-presentation practices, on the tendency of online social comparison	152 young people between the ages of 11 and 18 (55.9% female)	the instruments used were the Presentation of Online Self Scale (POSS) Test, the Open-Ended Possible Selves instrument, and the Adolescent Self Perception Profile, 11 items lowa-Dutch Scale developed by Gibbons and Buunk in 1999.	a sequential regression analysis; A chi square analysis;	1. There were no appreciable variations between the possible self for each of the independent variables. 2. Demonstrating the difference in the contents of the feared self between male and female participants, expressing oneself with the feared interpersonal relationships.

(Pérez-Fuentes et al., 2019)	explored emotional intelligence and self-worth as advantages for the healthy development of personality traits and self-expression of creativity.	how and function for the healthy development of personality traits and self-expression of creativity.	742 high school students in the Spanish province of Almera.	cross-sectional research design; Big Five Inventory (BFI) scale, Rosenberg Self-Esteem Scale (RSE), Expression, Management, and Emotion Recognition Evaluation Scale (TMMS-24), and Creative Behavior Questionnaire: Digital (CBQD)	t-test ;	<ol style="list-style-type: none"> 1. The group of individuals who performed best in terms of restoring self-esteem, emotion, and self-expression also performed worst in terms of neuroticism. 2. Extraversion and openness to new experiences. Both directly and indirectly through the mediators of self-esteem and emotional attention, higher neuroticism scores and lower scores of extraversion and openness to experience have a detrimental impact on creative self-expression.
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DISCUSSION

This paper aims to investigate and present supporting evidence regarding the correlation between the use of social media among adolescents and their levels of self-esteem. More than 15 articles show a good relationship between social media use by adolescents, while five articles show a negative relationship. There was one study mentioned that social media usage decreased the self-esteem among adolescents between 10 to 14 age years old, in female adolescents due to other-oriented social media usage. However, social media use that is purely self-oriented has no negative effects on self-esteem²⁸.

The result showed that gender is related with social media usage, especially among girl. According to study, uploading photo selfies showed a direct and positive association with body self-esteem especially adolescent’s girl body image⁴. Adolescent girls more likely to concern their body image and self-presentation of beauty. These two are contributing in developing self-esteem among them. They use social media to justify their body image and self-presentation through total like in their posting, especially for self-portrait photograph or selfie³⁵. Meanwhile boy rarely post their selfie in social media³⁶. Regarding gender, this study is similar with another study that mentioned social media addiction is most predominantly among girl. However, the result showed that social media addiction decreased the self-esteem¹⁶.

There was a unique study mentioned that social media has a good impact on academic performance. However, there is no significant relationship between time spent accessing social media and student achievement index. Furthermore, there is relationship between self-esteem and grade point average (GPA), and their feelings of self-worth²⁶.

Based on the result of this study, most of the articles showed that social media use has benefit among adolescent’s self-esteem, especially related to self-worth. It can be used as evidence for

developing intervention to increase self-esteem among adolescents through social media. Previous studies mentioned that social media can be used as social and communicative tool among adolescents to create happiness, confidence, and optimism in their life, and it were part of self-esteem³⁷.

Conclusion and Limitation

Social media use, such as uploading selfie photo can increase body image and related to self-concept. In addition, social media use can increase self-esteem among adolescents. This study can be evidence for nursing intervention to increase self-concept among adolescents. Social media has benefit among adolescent’s self-esteem, if it is used as self-oriented. The mental health nursing is needed to develop intervention related to social media to increase self-esteem among adolescents. There was in this study must be considered. Quantitative effect is needed to measure the impact social media use on self-esteem. Meta-analysis is needed for further study.

Acknowledgments:
None

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