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### Facebook-based Social Support and Health: A Systematic Review

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### **Abstract**

The rise of social networking sites (SNSs) have provided a new avenue for interpersonal communication. Facebook, as the largest SNS targeted at providing access to interpersonal social networks, has been found to be a source of social support. Facebook-based social support has been found to be beneficial across a number of health outcomes, however, no systematic evaluation of these effects, and the factors that influence them, has been conducted. A systematic review has been conducted to examine the effects of Facebook-based social support on health. A total of 27 studies met selection criteria and were included in the final review. Facebook-based social support was found to impact health across three major domains: general health, mental illness, and well-being. Facebook-based social support was found to improve general physical and mental health, as well as well-being. It was also found reduce to symptomology associated with mental illness, including depression, anxiety, online victimisation, and loneliness. There were a number of behavioural factors that influenced these outcomes, including social comparison, communication competence, and self-disclosure. While the effects of Facebook-based social support was found to be generally positive, future research is required to explore how best to maximise this new form of social support.

**Keywords:** Social support, Facebook, health, well-being, mental illness.

**Public Policy Relevance Statement:** A review of the literature on the use of Facebook to access social support, and how that can affect health outcomes. Overall, using Facebook as a mechanism for social support was found to improve health outcomes across domains including: improving mental health, physical health, well-being, and reducing mental illness symptomology, like depression. The use of Facebook to positively interact and gain support from friends and family can be beneficial to a person's overall well-being.

### Facebook-based Social Support and Health: A Systematic Review

Communication on social media has become an increasingly prevalent form of social interaction over the last 10 years (Perrin et al., 2015). Social Networking Sites (SNSs) have increased in popularity, with Facebook approaching 2.23 billion monthly users (Facebook, 2018). Facebook allows for the communal sharing of personal information (posting written messages, photos, and videos about one's life or interests) for others to comment on or show non-verbal appreciation ('liking'), as well as private communication (private messaging), and the ability to join "Facebook groups" with shared interests or experiences (Nadkarni & Hofmann, 2012; Oh, Lauckner, Boehmer, Fewins-Bliss, & Li, 2013). The motivations for using Facebook have been mainly identified as the need to belong and for self-presentation, rather than informational support, with most users utilising the SNS to maintain relationships or pass time (Nadkarni & Hofmann, 2012; Ryan, Chester, Reece, & Xenos, 2014). This makes Facebook distinct from other sites like Twitter, in which users are motivated by interests in celebrities, sports news, and general entertainment (Hargittai & Litt, 2011). Additionally, Facebook is distinct from Instagram, in which users are motivated by archiving their experiences and browsing other site users photos (E. Lee, Lee, Moon, & Sung, 2015). While Twitter does not appear to play a role in the maintenance of long-term social relationships, Facebook does provide a virtual medium for maintaining these types of connections (Petersen & Johnston, 2015), suggesting Facebook may be a pertinent source of social support.

Social support is defined as the extent to which an individual feels a sense of belonging and value to a social network based upon communication and reciprocity (Cobb, 1976; Heaney & Israel, 2008; House, 1981). Social support is often best conceptualised in four broad concepts: emotional support (providing comfort and expressions of caring); instrumental support (providing assistance such as material goods and services);

informational support (providing practical, problem solving assistance, such as advice, or feedback); and appraisal support (providing information and feedback that is useful in self-evaluation; House, 1981; Zhang, 2017). Social support can be both actual (i.e., enacted supportive behaviour or acts) and perceived (i.e., the perception that one's social network is willing to engage in supportive behaviours and acts; McDowell & Serovich, 2007). It has been found that the perception of social support has a greater effect on improving physical and mental health than actual social support (Li, Chen, & Popiel, 2015; McDowell & Serovich, 2007), and provides a greater buffer against mental health concerns, such as stress. Social support has been shown to moderate the negative effect that stress has on physical and mental health (Cohen & Wills, 1985; Li et al., 2015).

Research into social support drawn from Facebook has found that it can have a positive effect on various outcomes. These have included depression (Frison & Eggermont, 2016; Wright et al., 2013), anxiety (Indian & Grieve, 2014), well-being (Huang, 2016), physical health (Cavallo et al., 2014), and loneliness (Seo, Kim, & Yang, 2016).

Additionally, there are several factors and behaviours that are intrinsic to Facebook use that can influence the amount of social support a person perceives they have from this SNS. For example, number of friends (Nabi, Prestin, & So, 2013), level and emotional content of interactions (Seo et al., 2016), self-disclosure (Huang, 2016), communication competence (Wright et al., 2013), and social comparison to other Facebook users (Jang, Park, & Song, 2016) which can have both positive and negative effects on perceptions of social support.

Facebook use has been found to negatively affect mental health, including increased anxiety, depression, body image and disordered eating issues, drinking cognitions, and alcohol use (Frost & Rickwood, 2017). However, while Facebook can have significant negative effects on mental health, there has been a significant body of work that examines Facebook as a mechanism for enhancing social support. Facebook has become a fixture in

developed countries, with more than 1.74 billion people accessing Facebook via mobile devices (Statista, 2018b). This means that this form of virtual social support can be utilised both as a part of everyday life (Frison & Eggermont, 2015), and when individuals are not readily able to access face-to-face social support (Indian & Grieve, 2014). Given the extent to which Facebook usage has become common, a systematic examination of the potential benefits of socialising via Facebook, not just the disadvantages, should be conducted.

The aim of this study was to provide a comprehensive and systematic review of the state of the literature pertaining to Facebook-based social support. The research question for this study was ‘Does the current literature indicate that social support drawn from Facebook translates into positive physical or mental health outcomes?’ By answering this question, this review will provide direction on how to utilise Facebook in a way that is beneficial for everyday users. At the time of writing, no such review known to the authors exists in the literature and there has been a significant focus on the negative effects of Facebook (mis)use (see Frost & Rickwood, 2017). Facebook-based social support has been found to be beneficial for many mental and physical health outcomes (Frison & Eggermont, 2015; Nabi et al., 2013), however, these findings have not been systematically collated and reviewed. Given the diverse conclusions and methodologies employed by studies examining Facebook-based social support, a comprehensive review would provide future research in this area with a valuable overview of the current state of the literature, recommendations for methodology, and future directions for research.

## **Method**

### **Search Strategy**

The databases searched were Science Direct, PsychINFO/ARTICLES, PubMed, Scopus, Wiley, and Web of Science. The initial search was independently conducted by three researchers, and included articles from 1 January, 2007 to 19 September, 2017 (Facebook became open to the general public on 26 September, 2006; Facebook, 2018). An additional follow-up search was conducted by three researchers to include articles from 20 September, 2017 to 17 July, 2018, prior to final manuscript preparation. Search terms were developed using published articles that relate to Facebook as a mechanism for social support ("social networking site" OR "online social network" OR "sns" OR "facebook" OR "social media" AND "social connect\*" OR "social inclusion" OR "social support" OR "perceived support" OR "online support" OR "belong\*" OR "social capital" AND "mental health" OR "physical health" OR "quality of life" OR "mental illness" OR "physical illness" OR "well-being" OR "wellbeing" OR "well being" OR "life satisfaction" OR "depression" OR "anxiety" OR "stress" OR "self-efficacy" OR "self efficacy" OR "self-esteem" OR "self esteem" OR "lone\*"). Search terms were performed on article titles, keywords, and abstracts.

### **Selection Criteria**

Given the nature of the research question, only studies that were quantitative, experimental, or cross-sectional in design, and in English were selected for inclusion. Additional, only studies that focused on Facebook as the primary form of social media used, or studies which examined online social support in which a large portion of the sample used Facebook were included. Studies were required to measure social support, either specifically in the context of Facebook-based social support, or online social support more broadly. Studies that conceptualised aspects of Facebook use (e.g., number of friends) as measures of social support were also included. Studies were required to measure at least one of the

following: mental health related outcomes, general mental well-being, or general physical well-being. Additionally, Facebook-based social support must be hypothesised to predict or have a relationship with one of the mental or physical health outcomes.

Exclusion criteria included articles that were qualitative in nature, owing to the quantitative focus of the research question and inclusion criteria (i.e., the measurement of social support and health outcomes). Grey literature was also not included. Non-research publications (e.g., government reports), and research that was unpublished were excluded, as they had not been subjected to a peer-review process. These studies have been shown to rarely impact the results of systematic reviews, except in reviews with few studies, or in an area of the literature in which authors have questionable conflicts of interests (Hartling et al., 2017). Finally, dissertations were also excluded, as the value of such studies in systematic reviews has been found to vary (Hartling et al., 2017). Studies that focused on chronic conditions were also excluded from this review, as the research question was focused on the general physical and mental health outcomes that could be applied to the general population.

### **Data Extraction**

Duplicate articles were screened and removed from the subsequent list of potential articles. The list of articles was divided in half, with two researchers each reviewing one half of the list, and the third researcher reviewing the entire list. This ensured that all articles were examined by two researchers, with a third to act as a moderator should disagreement ensue. Following the review of title and abstract, this process was repeated for the full text review of articles.



## Results

The aim of this review was to systematically appraise the state of the current literature, as it relates to Facebook-based social support, and how it can affect mental and physical health outcomes. The search for articles followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines (Liberati et al., 2009). Twenty-seven papers were included in the final review: 24 papers from the initial search, and three papers from the follow-up search (see Figures 1 and 2 for PRISMA flow charts for the initial search and follow-up search, respectively).

The data extracted from these studies focused on study objective, design, samples, measures used, how Facebook-based social support was measured, analysis, and relevant results to the research question (see Table 1). The extraction process targeted the relationship between Facebook-based social support and mental and/or physical health outcomes. The following results are organised by the mental/physical outcomes measured in the study. As several studies focused on more than one outcome, wherever possible, these studies will be included in the factor most relevant to the research question stated in the study.

### Methodological quality

In order to evaluate the risk of bias and overall research quality for each study, the Newcastle-Ottawa Scale (NOS) adapted for Cross-sectional Studies (Herzog et al., 2013) and the Critical Skills Appraisal Program (CASP) for Randomised Control Trials (CASP, 2017) were used (see Table 2). Two researchers performed the quality assessments separately, then compared the results to evaluate any disagreement. Twenty-six studies were of cross-sectional design, as such the NOS was the primary measure of bias used. Overall, 15 studies were found to be of good quality, eight studies were found to be of satisfactory quality, and three studies were found to be of unsatisfactory quality (see Table 2). The CASP for

Randomised Control Trials (CASP, 2017) was used to assess the quality of the single randomised control trial, which was found to be of fair quality.

## **Findings**

The findings demonstrated that Facebook-based social support had effects on three broad categories: general health, mental illness, and well-being. It was found that studies focused on measuring general health outcomes, mental illness symptoms, or well-being, with a number of subcategories being found within each category. The reason for the categorisation of mental illness and well-being separately is due to the desired goals of each concept. The desired goal of treating mental illness to reduce symptoms until symptomology is absent (Slade, 2010). Well-being can be improved in persons with little or no symptoms of mental illness, and reflects positive mental states, rather than mental distress (Slade, 2010).

Studies comprising the general health category focused on the effects of Facebook-based social support in improving health, and included two factors: physical health, and mental health. Studies that focused on the use of Facebook-based social support in the reduction of mental illness symptoms were included in the mental illness category, and included factors related to depression, anxiety, online victimisation, loneliness, and Facebook addiction. Studies that focused on the use of Facebook-based social support to increase positive mental states, distinct from mental illness, such as overall well-being and satisfaction with life were included in the well-being category, and included a factor related to professional well-being. The findings for each factor will be structured in two parts: description of the studies (sample characteristics, effect sizes, and study quality), and discussion of results, including implications.

## **Health**

### **Physical health.**

Three studies (Cavallo et al., 2014; Nabi et al., 2013; Oh et al., 2013) were identified that focused on the effects of Facebook-based social support on physical health. Two of these studies found that Facebook-based social support has a positive effect on certain processes related to physical health, and health-improving behaviours (Cavallo et al., 2014; Oh et al., 2013). The third study examining the role Facebook-based social support reduces the effects of stress on physical health and psychological wellbeing (Nabi et al., 2013).

Cavallo et al. (2014) found that, when examining exercise levels and intentions, increases in companionship support was positively associated with increased intention to exercise, and indirectly affected increases in physical activity. Additionally, increases in esteem support (encouragement related to exercise ability) via Facebook, was positively associated with increases in physical activity. Informational support was not found to be predictive of intentions to exercise, or of physical activity. This is possibly due to the effects of taking part in a structured exercise program, thus the need for informational support on Facebook was negligible (Cavallo et al., 2014).

Nabi et al. (2013) explored Facebook-based social support in the context of reducing the effect of stress on physical health and psychological well-being. It was found that the more friends an individual had on Facebook, the greater the perceived social support, which in turn, indirectly affected the relationship between perceived stress, and physical health and psychological well-being. It is worth noting that this relationship was found only in individuals experiencing high levels of stress.

In an examination of the health-related social support seeking behaviours of undergraduate students, Oh et al. (2013) found that students drew emotional, instrumental, informational, and appraisal support from Facebook when confronted with health issues. However, only emotional support was predictive of health-related self-efficacy (i.e., the

belief that students had a sense of control and education surrounding managing health concerns).

### **Mental health.**

Five studies (Jang et al., 2016; Lima et al., 2017; McCloskey et al., 2015; Wright, 2012; Zhang, 2017) were identified that focused on the effects of Facebook-based social support on aspects of general mental health. Overall, it was found that Facebook-based social support was predictive of better mental health, as well as decreased levels of mental distress (Jang et al., 2016; Lima et al., 2017; McCloskey et al., 2015; Wright, 2012; Zhang, 2017). Jang et al. (2016) measured mental health as a single construct, Lima et al. (2017) measured mental health, well-being and physical health, McCloskey et al. (2015) focused on quality of life, Wright (2012) focused on how emotional support reduces stress in undergraduate students, and Zhang (2017) examined life satisfaction and depressive symptoms.

Facebook-based social support was found to predict better mental health, however, social comparisons on Facebook were detrimental to mental health (Jang et al., 2016). Emotional support drawn from Facebook was found to reduce perceived stress, although greater physical and social attraction to Facebook Friends was a factor that can improve the levels of support drawn from Facebook (Wright, 2012). Lima et al. (2017) found that the number of Facebook Friends was negatively associated with bonding social capital, or the development of reciprocal relationships (of which social support was a factor). This resulted in a negative indirect effect on health, including well-being, physical and mental health (Lima et al., 2017).

McCloskey et al. (2015) examined the evidence for the construct validity and factor structure of Facebook-based social support. Facebook-based social support was found to have four distinct factors: perceived support, emotional support, negative support, and instrumental support. Correlations with physical, psychological, social, and environmental quality of life,

and depression were examined. Negative support (i.e., negative feedback on Facebook) was found to have a positive relationship with depression, and a negative relationship with physical quality of life. Interestingly, emotional support was negatively related to psychological quality of life, and positively related to depression. This result is inconsistent to the findings of more traditional face-to-face social support approaches. This may be due to increased desire to access online support when experiencing distress, however, the correlational nature of the analysis makes causal inferences difficult (McCloskey et al., 2015).

Zhang (2017) found that intent to self-disclose, and the amount and honest of self-disclosure yielded greater acts of social support from persons on Facebook of social support. Interestingly, greater depth of personal self-disclosure on Facebook can result in decreased perceptions of social support, and negatively affect mental health (Zhang, 2017). This may feed into deceptive positive attention-seeking behaviours on Facebook, and the need to editorialise negative disclosures online (Dumas, Maxwell-Smith, Davis, & Giulietti, 2017). Given that honest self-disclosure may not be advantageous online, this may lead to posts that only portray the user in a positive light. This 'highlight reel' style of posting may result in poor social comparisons that can negatively affect mental health.

## **Mental illness**

### **Depression.**

Four studies were identified that focused on the effects of Facebook social support on depression (Frison & Eggermont, 2015, 2016; Park et al., 2016; Wright et al., 2013). Three of the studies that examined Facebook-based social support and depression found that social support drawn from Facebook was predictive of lower levels of depression, depressive mood, and symptomology (Frison & Eggermont, 2015; Park et al., 2016; Wright et al., 2013). The fourth study found that Facebook-based social support only predicted lower levels of

depression in adolescent girls, not boys (Frison & Eggermont, 2016). Additionally, private (i.e., messaging) and public (i.e., posting on one's wall) Facebook use was found to predict greater Facebook-based social support, which was associated with lowered depression in adolescent girls (Frison & Eggermont, 2016). In adolescent males, it was found that active public Facebook use was associated with greater levels of depression, with Facebook-based social support not predicting depression (Frison & Eggermont, 2016). When adolescents encounter daily stress, it more likely that they will actively seek social support through Facebook, rather than via interpersonal interactions, to increase perceived social support and decrease depressive moods (Frison & Eggermont, 2015). It was also found that this social support seeking behaviour may increase depressive moods (Frison & Eggermont, 2015

Perceptions of Facebook-based social support was found to negatively affect depression levels when participants disclosed negative feelings on Facebook (Park et al., 2016), and had greater face-to-face and computer-mediated communication competency (Wright et al., 2013). However, receiving actual socially supportive behaviours on Facebook (i.e., public expressions of support on posts) did not have an effect on depression levels (Park et al., 2016). This result is consistent with previous research by McDowell and Serovich (2007) showing that the perception of social support is more impactful than actual supportive behaviour.).

### **Anxiety.**

One study examined the effects of Facebook-based social support and social anxiety (Indian & Grieve, 2014). Indian and Grieve (2014) found, in a sample of high and low socially anxious individuals, psychological disposition to face-to-face or Facebook can play a role in how social support affects well-being. Within the high socially anxious group, Facebook-based social support significantly predicted greater psychological well-being, whereas face-to-face social support did not. Within the low socially anxious group, face-to-

face social support significantly predicted greater psychological well-being, however Facebook-based social support had no significant relationship with psychological well-being. While face-to-face social support was found to be important for persons who have little difficulties socially, for persons with high social anxiety, Facebook-based social support appeared to work in a compensatory manner when more typical social interaction is a barrier (Indian & Grieve, 2014).

### **Online victimisation.**

Two studies focused on the effects of cyberbullying and victimisation, while controlling for Facebook-based social support on psychological distress (Cole et al., 2017; McConnell et al., 2017). The results showed that when accounting for reported online victimisation, social support did not predict psychological distress, however offering support to other users was a predictor of greater psychological distress (McConnell et al., 2017). This result is may be due to the vicarious exposure to trauma associated with offering support to highly victimised peers (Fox, 2015). Facebook-based social support was predictive of less depressive cognitions, and partially offset the effects of online victimisation for LGBTQ persons (Cole et al., 2017). It was also noted that Facebook-based social support is redundant in LGBTQ persons with strong face-to-face social support (Cole et al., 2017), further supporting that the notion Facebook can be used to compensate for poor inclination or opportunity to access social support in person.

### **Loneliness.**

Two studies focused on the effects of Facebook-based social support and loneliness (K. T. Lee et al., 2013; Seo et al., 2016). Seo et al. (2016) examined the role Facebook-based social support can have on loneliness. The number of interactions on Facebook is predictive of the level of Facebook-based social support, suggesting that the more active a person is on Facebook, the greater the opportunities for support (Seo et al., 2016). The average time taken

for friends to comment on a person's public post has a reported effect on the levels of social support perceived, though this finding was only found in individuals with a high level of interpersonal awareness (Seo et al., 2016). Generally, individuals with a greater sensitivity to interpersonal interactions drew greater support from Facebook to reduce loneliness. K. T. Lee et al. (2013) examined how loneliness can affect well-being when mediated by online self-disclosure and Facebook-based social support. Loneliness was predictive of greater self-disclosure, which increased levels of perceived Facebook-based social support, which improved well-being (K. T. Lee et al., 2013). This suggests that Facebook-based social support reduces loneliness, and mediates the relationship between loneliness and well-being.

### **Facebook addiction.**

A single study focused on the role that social support can play on Facebook addiction in university students (Tang et al., 2016). Online interpersonal relationships predicted high levels of Facebook addiction (i.e., the compulsive overuse of Facebook), while personality traits of neuroticism and conscientiousness predicted lower levels of Facebook addiction (Tang et al., 2016). Of the Facebook-based social support factors, informational support was found to positively predict higher levels of Facebook addiction in this sample, with social companionship negatively predicting Facebook addiction. This suggests that not all of the factors of social support can be beneficial to Facebook users.

### **Well-being**

Seven studies were found that focused on the effect of Facebook-based social support on psychological well-being (Chan, 2018; Chen & Bello, 2017; Hu et al., 2017; Huang, 2016; H. Kim, 2014; J. Kim & Lee, 2011; Liu & Yu, 2013). Five of the seven studies found that greater Facebook-based social support was predictive of greater levels of well-being (Chan, 2018; Hu et al., 2017; Huang, 2016; J. Kim & Lee, 2011; Liu & Yu, 2013). It is worth noting that Chan (2018) found Facebook-based social support was only predictive of well-being in



35-54 year olds. H. Kim (2014) found that Facebook-based social support did not predict life satisfaction over and above face-to-face social support. This is not unexpected, as the utility of Facebook-based social support over face-to-face social support is often contingent on circumstance and predisposition of a person to use Facebook to compensate for poor face-to-face social support (Cole et al., 2017; Indian & Grieve, 2014). Chen and Bello (2017) found that receiving social support on Facebook was not predictive of life satisfaction or stress, whereas providing support on Facebook predicted greater stress and reduced perceived life satisfaction. However, persons with low self-esteem found greater life satisfaction when providing social support on Facebook (Chen & Bello, 2017). There were a number of factors that influenced levels of Facebook-based social support in these studies: online self-disclosure (Huang, 2016), honest self-presentation (J. Kim & Lee, 2011), age (Chan, 2018), strong ties with Facebook Friends (H. Kim, 2014), and Facebook intensity (Hu et al., 2017; H. Kim, 2014; Liu & Yu, 2013).

#### **Professional well-being.**

Two studies examined the effects of Facebook-based support on professional-based well-being outcomes (Chung & Chen, 2018; Gray et al., 2013). Number of friends and perceptions of support found at university (bonding social capital) was found to have a positive effect on social adjustment to college, which helped predict increased persistence in college for first year students (Gray et al., 2013). Collaborative Facebook behaviours was predictive of greater bonding social capital, suggesting that utilising instrumental support via Facebook is also a factor in adjusting to college (Gray et al., 2013). Additionally, it was found that providing social support via Facebook improved self-efficacy for creative teaching, above and beyond receiving social support (Chung & Chen, 2018). This suggests that providing support to peers via Facebook may provide an opportunity for vicarious support, which improves self-efficacy.

## Discussion

Overall, the results generally demonstrated that higher levels of Facebook-based social support predicted greater positive mental and physical health outcomes, including physical activity (Cavallo et al., 2014), physical health (Nabi et al., 2013), life satisfaction and well-being (Chan, 2018; Hu et al., 2017; Huang, 2016; J. Kim & Lee, 2011; Liu & Yu, 2013), and college engagement (Gray et al., 2013). Higher levels of Facebook-based social support also predicted lower levels of a wide range of negative outcomes that were also measured, including depression (Frison & Eggermont, 2015, 2016), victimisation (Cole et al., 2017; McConnell et al., 2017), and loneliness (K. T. Lee et al., 2013; Seo et al., 2016). There were some notable exceptions to these findings; for example, for persons with little to no social anxiety (Indian & Grieve, 2014), and male adolescent boys (Frison & Eggermont, 2016).

There are a number of factors that appear to mediate the relationship between Facebook-based social support and health outcomes. While self-disclosure on Facebook was generally found to improve perceptions of social support, and mental health (Huang, 2016; Park et al., 2016), disclosing intimate feelings at a high rate had a detrimental effect to perceptions social support and to mental health (Zhang, 2017). This suggests that sharing high numbers of intentionally intimate posts is not beneficial when seeking social support. Private communication on Facebook, as opposed to public posting, appears to be of greater benefit to perceptions of social support, and mental health, particularly for adolescent girls (Frison & Eggermont, 2016). This is likely due to the non-public, confidential nature when directly communicating via Facebook, as opposed to posting publicly. While adolescent boys do draw social support from public Facebook posts, this does not translate into improvements in mental health (Frison & Eggermont, 2016). This could be due to the lack of emotional expression that characterises male online interactions, resulting in little beneficial effects to

mental health (Kaare, Brandtzaeg, Heim, & Endestad, 2007). Greater sensitivity to interpersonal interactions was predictive of increased perceptions of social support from Facebook, showing that persons who are more attentive to interpersonal interactions will perceive greater support than those who are less attentive the expressions of others (Seo et al., 2016). Competency in communication was also found to predict better Facebook-based social support which reduced depression, suggesting that teachable communication skills can be beneficial for online interactions and mental health (Wright, 2013). Honesty in interactions (J. Kim & Lee, 2011), and strong ties to friends on Facebook (H. Kim, 2014) were also predictive of greater social support, showing that quality of interactions and relationships online are important to improving perceptions of support.

While eight of the 27 studies drew on a wide range of populations, including Taiwanese teachers, Belgium high school students, and North American LGBTQ young adults, there was an overreliance on college or university students in 70% of the total studies. However, this may be justifiable, given that university students are likely to be Facebook users, however, it does limit generalisability of findings of these studies to wider populations. Additionally, all but two studies reported a larger proportion of female to male participants, which is not unexpected, as 52% of Facebook users are reported to be female (Statista, 2018a). An additional limitation found was the lack of diversity in the age range of the sample, with only 19% of studies reporting the mean age of participants being over 25 years old. This limitation suggests a need to evaluate Facebook-based social support in older populations. Most studies sampled American-based Facebook users (52%), suggesting a need to examine the utility of Facebook-based social support in more culturally diverse countries.

Most studies (88%) were found to be of satisfactory or good quality. The inclusions of the three studies that were found to be of unsatisfactory quality was justified, as the results of those studies did not differ from the main findings of this review. Finally, there was a lack of

consistent measurement methodology of Facebook-based social support, or consistent measurement of outcomes, presenting a difficulty in applying consistent conclusions.

### **The Measurement of Facebook-based Social Support**

Facebook-based social support was not measured consistently across studies. Methods ranging from altered versions of established face-to-face social measures, for example, the Interpersonal Support Evaluation List (ISEL) used by Indian and Grieve (2014) and J. Kim and Lee (2011), to the number of Facebook Friends and posts as a measure of social support, e.g., Park et al. (2016). A number of studies also used the number of Facebook Friends or Facebook usage to predict some of the variance within conventional measures of social support, which were then predictive of outcomes (Hu et al., 2017; Liu & Yu, 2013; Nabi et al., 2013). It is likely that current social support measures altered to capture Facebook-based social support may be best when capturing this construct (e.g., the ISEL). Additionally, intensity of Facebook use appears to be best captured using the Facebook Intensity Scale (FIS), which is a self-report measure designed to measure Facebook use, number of friends, and the extent to which a person actively engages with Facebook (Ellison, Steinfield, & Lampe, 2007). This measure was used by a number of studies: e.g., Hu et al. (2017), H. Kim (2014), and Liu and Yu (2013).

### **Number of Facebook Friends and Social Support**

While research into the use of Facebook has shown that number of Facebook Friends can predict greater levels of perceived social support, general well-being, and other positive outcomes, this effect can be reduced if an individual overextends their Facebook Friend group (J. Kim & Lee, 2011). An increased number of 'friends' on Facebook who are not close to the user can often lead to a dilution effect, resulting in less positive outcomes, such as lowered levels of perceived social support (Greitemeyer, Mügge, & Bollermann, 2014; J. Kim & Lee, 2011). This, in turn, has been found to result in poorer mental and physical

health outcomes (Campisi et al., 2012; J. Kim & Lee, 2011). These results may suggest that the positive effects of social support can be negated by an overextension of a person's online social network.

### **Types of Social Support and Outcomes**

Of the four conceptual types of social support (emotional, instrumental, informational, and appraisal support; House, 1981; Zhang, 2017), emotional support was most strongly associated with improved health outcomes (Cavallo et al., 2014; Oh et al., 2013; Seo et al., 2016; Wright, 2012). Emotional support drawn from Facebook was found to improve physical health behaviours (Cavallo et al., 2014; Oh et al., 2013), and lower levels of perceived stress (Wright, 2012) and loneliness (Seo et al., 2016). Informational support was predictive of high levels of Facebook addiction in university students, suggesting that motivation for Facebook use (i.e. recreational vs informational reasons) may play a role in Facebook overuse (Tang et al., 2016). Instrumental support was associated with better adjustment to college, as collaborative behaviours are likely to facilitate relationship development in a new social environment. (Gray et al., 2013). While health-related support seeking was associated with appraisal support, appraisal support did not predict any health-related outcome (Oh et al., 2013), suggesting feedback for self-evaluation may not play a role in the relationship between Facebook-based social support and health.

Six studies examined the utility of Facebook-based social support, over and above the effects of face-to-face social support. Three studies found that, when controlling for face-to-face social support, Facebook-based social support was predictive of better health outcomes (Frison & Eggermont, 2015; Liu & Yu, 2013; Wright et al., 2013). One study found that Facebook-based social support was not predictive of life satisfaction, over and above face-to-face social support, suggesting that long term, face-to-face relationships are better for improving a person's satisfaction with life (H. Kim, 2014). However, one study found that

Facebook-based social support was strongest in persons with low levels of face-to-face social support (Cole et al., 2017), and one study found that, when compared to face-to-face social support, Facebook-based social support was only predictive of well-being in persons with high social anxiety (Indian & Grieve, 2014). This suggests that when a person is poorly disposed to or unable to draw social support from one method (i.e., face-to-face vs online), they can compensate and utilise the other.

### **Implications**

There are a number of implications that can be taken from this review. First, the overall results of this study run counter to the findings of Frost and Rickwood (2017), which found that Facebook use was predictive of poorer mental health outcomes. This is not unexpected, as this study focused specifically on the use of Facebook as a mechanism for social support, rather than general Facebook use. While general Facebook use has been shown to negatively affect mental health (Frost & Rickwood, 2017), when used to seek and provide social support, Facebook is beneficial across a number of mental health outcomes. Facebook-based social support may need to be considered by mental health workers as an additional way to improve mental health outcomes. Second, there may be ways to use Facebook in a way that maximises the benefits of this SNS, like using Facebook to almost exclusively interact with Facebook Friends rather than scrolling through the Newsfeed. Finally, greater education around the positive use Facebook, and how to effectively use SNSs for supportive social interactions is required. This is especially pertinent for adolescents, and persons who are experiencing social anxiety (Frison & Eggermont, 2015; Indian & Grieve, 2014).

### **Limitations**

This review has several limitations that need to be considered. The first is the lack of a meta-analysis conducted on the data gathered. The reason for this is the large variability in

the operationalisation and measurement of Facebook-based social support and health-related outcomes. This is a direction for further study. These differences in measurement would likely distort any combined analysis, and obscure results (Higgins & Green, 2011). Finally, while the overall results showed that Facebook-based social support may be beneficial, there were several studies that did not, at least partially, support this finding (Lima et al., 2017; Tang et al., 2016). This would suggest that there are factors that can directly affect the levels of social support an individual can draw from Facebook (e.g., number of friends of Facebook). These effects were likely partially obscured by the inconsistent measurement of Facebook-based social support and outcomes.

It is also worth noting that many of these studies do not consider the notion of Facebook overuse. There is evidence to suggest that a person can overuse or even become addicted to social media (Andreassen & Pallesen, 2014). An additional consideration is cyberbullying, which can negatively affect levels of online social support (McConnell et al., 2017). Levels of compulsive Facebook use, or cyberbullying would directly impact the site as a medium for social support.

In conclusion, this systematic review aimed to provide an overview of the Facebook-based social support literature. The examination of 27 studies found that, while Facebook-based social support is generally beneficial to physical and mental health outcomes, there are several factors that influence this effect, including self-disclosure, communication competence, number of friends, and social comparison. Facebook-based social support can also be used to compensate for poor opportunities or lack of opportunities for face-to-face social support, and may even be the preferred method of social support among younger users. When used optimally, Facebook can provide a virtually instantaneous method of accessing social support networks.

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# SYSTEMATIC REVIEW OF FACEBOOK-BASED SOCIAL SUPPORT

Table 1.

*Summary of Included Articles by Outcome (N = 27).*

<i>Author(s), published date</i>	<i>Country</i>	<i>Study objective</i>	<i>Study design</i>	<i>Sample</i>	<i>Measures</i>	<i>Facebook-based SS</i>	<i>Outcome</i>	<i>Controls</i>	<i>Analysis</i>	<i>Relevant Results</i>
<b>Health</b>										
<b>General Physical Health</b>										
Cavallo et al. (2014)	USA	To evaluate the efficacy of FB in increasing SS for physical activity.	Randomised control study. Participants had to be under 25 years old, report <30 min physicals activity, >30 min FB usage.	134 American female undergraduate students, < 25 years old.	SPIAQ, PAQ, author developed scales of exercise attitude, intension, and perceived behavioural control.	SPIAQ was modified to include forms of FB communication.	Intention to exercise, and physical activity.	None.	SEM.	Companionship support significantly predicted intension to exercise ( $\beta = .27$ ), which indirectly effected levels of physical activity ( $\beta = .13$ ). Esteem support significantly predicted physical activity ( $\beta = .26$ ). Information support did not significantly predict either outcome.
Nabi et al. (2013)	USA	To assess if number of FB friends has an effect on SS and physical illness and WB.	Cross-sectional survey.	401 FB-using American undergraduate students. 78% female, age M = 19.90 (SD = 1.51).	PILL, GMPS, SRRS, SNI, MSPSS, SWLS, and FB usage.	FUI and SNI.	Perceived stress, physical illness, psychological well-being.	Gender, stress level.	SEM.	Overall, number of FB friends predicted higher levels of SS ( $\beta = .08$ ), which reduced perceived stress ( $\beta = -.30$ ), in turn, indirectly reduced physical illness ( $\beta = -.37$ ) and increased psychological well-being ( $\beta = .45$ ). Number of FB Friends directly improved psychological well-being ( $\beta = .12$ ). High stress individuals reported number of FB friends predicted higher levels of SS ( $\beta = .14$ ), whereas low stress individuals did not. While health-related support seeking was predictive of all factors of perceived SS, only emotional support predicted greater levels of health self-efficacy ( $\beta = .27$ ).
Oh et al. (2013)	USA	To test how using FB for health reasons effects SS and health self-efficacy.	Cross-sectional survey.	291 American undergraduate students. 68% female, age M = 29.	ISEL, health-related support seeking, and self-efficacy items.	ISEL was altered to measure health-related SS drawn from FB.	Health self-efficacy	None.	SEM.	While health-related support seeking was predictive of all factors of perceived SS, only emotional support predicted greater levels of health self-efficacy ( $\beta = .27$ ).
<b>General Mental Health</b>										



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Jang et al. (2016)	South Korea	To assess how social comparison on FB effected perceived SS and mental health.	Cross-sectional survey.	358 South Korean university students.	INCOM, PSSS, RANDMHI, SES, and FB use.	INCOM was adapted to measure social comparison via FB, FB use was measured by evaluating the frequency of posts, and viewings.	Mental health.	None.	SEM.	FB use significantly predicted higher levels of social comparison ( $\beta = .15$ ) and perceived SS ( $\beta = .13$ ). Perceived SS significantly predicted better mental health ( $\beta = .15$ ). Social comparison predicted worse mental health ( $\beta = -.12$ ).
Lima, Marques, Muinos, and Camilo (2017)	Portugal	To examine the effects of FTF and FB-based friendships on health outcomes.	Cross-sectional surveys.	Study 1: 350 participants. 44% female age M =46.4 (SD =17.1)  Study 2: 803 participants. 50% female, age M = 44.1 (SD = 15.6).	S1. HSM, ESS, SHQ SF-36, RUCLALS, SSSS, MII, SII, GBI, BSCS.  S2. As above, plus RSES.	S1. Two versions of the HSM and ESS: FTF and FB-based friendships, as well as SS as a factor of bonding capital.  S2. As above.	S1. Physical health, mental health, subjective well-being.  S2. As above, plus self-esteem.	S1. Age, gender, SES, education, living alone.  S2. None.	S1. SEM, and mediated regression.  S2.SEM.	S1. FB friendships was not a significant predictor of bonding capital (SS was a factor), or health.  S2. FB friendships had a negative relationship with bonding social capital ( $\beta = -.35$ ), and had negative indirect effect on health ( $\beta = -.19$ ).
McCloskey, Iwanicki, Lauterbach, Giammittorio, and Maxwell (2015)	USA	To establish a FB-based measure of SS, and examine the relationships between FBBSS and depression, and quality of life.	Cross-sectional survey.	633 American undergraduate students. 70% female, median age 21 years.	FMSS (developed), ISSB, MSPSS, PHQ-9, WHOQOL-BREF.	FMSS was designed to measure SS drawn from FB.	Depression, physical health, and quality of life.	None.	EFA, and correlation	FBBSS was found to have 4 factors (perceived, emotional, negative, and instrumental). Emotional and negative SS had a positive relationship with depression ( $r = .17$ , $r = .11$ ), and a negative relationship with psychological quality of life ( $r = -.17$ , $r = -.24$ ). Negative support also had negative relationships with physical health ( $r = -.30$ ), social relationship ( $r = -.17$ ), and environmental quality of life ( $r = -.23$ ).

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Wright (2012)	USA	To examine the predictors of FB relationships, and the effect of FB-based emotional support on perceived stress in college students.	Cross-sectional survey.	283 American college students. 62% female, age M = 19.95 (SD = 1.95).	MPHM, IAS, ESS, GMPSS.	Participants were asked to complete measures for FB relationships.	Perceived stress.	None.	Multiple regression.	Physical and social attraction among FB partners was found to predict emotional support ( $\beta = .19$ ; $\beta = .31$ ). Emotional support predicted lower levels of perceived stress for FB partners ( $\beta = -.21$ ).
Zhang (2017)	Hong Kong	To assess how self-disclosure on FB influences SS, life satisfaction, and depression.	Cross-sectional survey.	560 Hong Kong university students. 60% female, age range 18-25 years old.	GDS, PHQ-9, SWLS, MOS.	FB usage was measured. GDS was modified to measure disclosure on FB. Items that measured enacted SS on FB were used.	Mental health, self-disclosure.	Gender, year in school, major, residence, time spent on FB, FB network size.	Hierarchical regressions.	Amount/intimacy, honesty, and intent of FB disclosure positively predicted greater levels of enacted FBBSS ( $\beta = .23$ ; $\beta = .25$ ; $\beta = .24$ ), though only amount/intimacy of FB disclosure negatively predicted perceived SS ( $\beta = -.17$ ). Enacted FBBSS predicted greater levels of perceived SS ( $\beta = .19$ ). Both enacted FBBSS and perceived SS predicted greater satisfaction with life ( $\beta = .12$ ; $\beta = .25$ ), but only perceived SS significantly predicted lower levels of depression ( $\beta = -.09$ ).
<b>Mental Illness</b>										
<b>Depression</b>										
Frison and Eggermont (2015)	Belgium	To test how online and FTFSS and support seeking buffers the relationship between daily stress and depression.	Cross-sectional survey.	910 Belgium high school students. 52% female, age (M = 15.44, SD = 1.71).	MSPSS, ASQ, CES-D, author developed measures of FTFSS and FBBSS seeking.	MSPSS was modified to rate perceptions of SS through FB.	Adolescents' depressive mood.	Gender.	SEM.	Daily stress significantly predicted increased SS seeking through FB ( $\beta = .11$ ), which in turn, predicted high levels of FBBSS ( $\beta = .54$ ), which predicted lower levels of depressed mood ( $\beta = -.12$ ). SS seeking through FB predicted greater levels of depressed mood ( $\beta = .18$ ).

## SYSTEMATIC REVIEW OF FACEBOOK-BASED SOCIAL SUPPORT

Frison and Eggermont (2016)	Belgium	To test how passive and active FB use effects OSS and depressive mood. Gender differences were also explored.	Cross-sectional survey.	910 Belgium high school students. 52% female, age (M = 15.44, SD = 1.71).	MSPSS, ASQ, CES-D, author developed measures of FB use.	MSPSS was modified to rate perceptions of SS through FB	Adolescents' depressive mood.	Gender.	SEM.	In adolescent girls, active public and private FB use significantly predicted greater FBBSS ( $\beta = .27$ , $\beta = .27$ ), which in turn, predicted lower levels of depressed mood ( $\beta = -.12$ ). In adolescent boys, active public FB use significantly predicted greater FBBSS ( $\beta = .18$ ), and greater levels of depressed mood ( $\beta = .25$ ).
Park et al. (2016)	USA	To examine the relationships between FB SS and depression.	Cross-sectional study.	Study 1: 61 undergraduate students. 61% female, age M = 19.95 (SD = 1.13).	S1. SPS, BDI-II.	S1. Participants FB walls were examined for positive and negative disclosures, as well as actual support. SPS was modified for FBBSS.	S1. Depressive symptoms.	S1. None.	Hierarchical logistical regressions using Generalised Linear Mixed Models.	S1. Participants with higher depression levels drew greater actual support from FB when they disclosed negative feelings ( $b = .05$ ), whereas those who did not disclose did not draw support. Perceived SS had a negative relationship with depression ( $r = -.37$ ).
				Study 2: 42 individuals, 21 diagnosed with MDD, 21 control participants. 86% female, age M = 24.95 (SD = 7.40).	S2. As above.	S2. As above.	S2. As above.	S2. As above.		S2. As above.
Wright et al. (2013)	USA	To explore the influence of communication competency on FB and FTF support, and its effects on depression.	Cross-sectional survey.	361 American undergraduate students. 54% female, age M = 20.26 (SD = 2.72).	SMIM, CCS, CMCCS, SSQ, CES-D.	SMIM assessed motives for using FB. Two versions of the SSQ was used, FB and FTFSS.	Depression.	None.	SEM.	Communication competence was found to positively predict FB and FTFSS ( $\beta = .07$ ; $\beta = .42$ ), respectively, which in turn, predicated lower levels of depression ( $\beta = -.12$ ; $\beta = -.23$ ).

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<b>Anxiety</b>										
Indian and Grieve (2014)	Not stated	To examine how FB-related and FTFSS predict subjective WB in social anxious and non-anxious individuals.	Cross-sectional survey.	299 FB users. 86% female, age M = 28.35 (SD = 10.88)	Mini-SPIN, ISEL, ISEL-FB Adapted, SWLS.	ISEL was adapted to measure SS drawn from FB.	Subjective well-being.	Gender.	Hierarchical multiple regressions.	In the low social anxious group, FB-related SS support was not a significant predictor of subjective WB, over and above offline SS ( $\beta = .35$ ). In the high social anxious group, offline SS was a significant predictor of higher subjective WB ( $\beta = .31$ ), however, the addition of FB-related SS made this relationship nonsignificant, FB-related SS did predict high levels of subjective WB ( $\beta = .23$ ).
<b>Online Victimisation</b>										
Cole, Nick, Zerkowitz, Roeder, and Spinelli (2017)	USA	To evaluate: if online and FTFSS are redundant; the effect of OSS vs. FTFSS on depressive thoughts and feelings; if SS moderates the effects of online victimisation.	Cross-sectional survey.	231 American undergraduate students. 72% female, age (m = 19.28, SD = 1.15).	PSSS, CES, OESA, SNS, DAS, CTI, BDI-II.	89% of participants reported using a SNS, with FB being among the most popular. SNS includes an OSS factor.	Depressive thoughts and feelings; dysfunctional attitudes, low self-esteem, depressive cognitions, depressive symptoms.	Gender, and OSS/FTFSS overlap.	Least squares regression, SEM.	OSS and FTFSS was uniquely predicted better levels of depressive thoughts and feelings ( $b = .16, b = .41$ ). High levels of OSS partially offset the effects of online victimisation ( $\beta = -.07$ ). OSS was strongest in persons with low FTFSS.
McConnell, Clifford, Korpak, Phillips, and Birkett (2017)	USA	To examine how FB effects victimisation, outness, SS, and psychological distress in LGBTQ young adults.	Cross-sectional survey.	175 American LGBTQ young adults. Age M = 24.02 (SD = 1.65).	FB usage, SMUIS, OI, MSPSS, BSI, victimisation, OSS behaviour, and cyberbullying items.	FUI and SMUIS, as well as OSB target FB behaviours.	Psychological distress.	Age, gender, race.	Multiple regressions.	FB social integration, SS, and seeking OSS did not predict psychological distress, though offering OSS predicted higher levels of psychological distress ( $\beta = .24$ ).
<b>Loneliness</b>										

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K. T. Lee, Noh, and Koo (2013)	South Korea	To test if loneliness has an effect on WB when mediated by SNS-based self-disclosure and SS.	Cross-sectional survey.	265 FB-using Korean undergraduate students. 53% female, age M = 26.84 (SD = 7.70).	RUCLALS, and adapted items of self-disclosure, SS, and WB.	SS items were worded to measure support from SNSs, additionally, all participants had to regular FB users.	Well-being.	None.	SEM.	Loneliness negatively predicted WB ( $\beta = -.24$ ), as well as positively predicted self-disclosure ( $\beta = .26$ ) which improved SNS-based SS ( $\beta = .43$ ), which improved WB ( $\beta = .16$ ).
Seo et al. (2016)	South Korea	To explore how FB interactions and user response time influences FBBSS and loneliness.	Cross-sectional study.	285 South Korean university students. 39% female, age M = 21.81 (SD = 2.19).	D-UNCFSSS, ISEL, RUCLALS.	Number of FB friends, interactions, and average time taken to receive comments were taken from participants FB walls. D-UNCFSSS and ISEL were altered for FBBSS.	Loneliness.	Inter-personal awareness.	SEM.	Overall, number of interactions and average comment time positively and negatively predicted, respectively, emotional/being support ( $\beta = .50$ ; $\beta = -.24$ ) and confidant support ( $\beta = .33$ ; $\beta = -.21$ ), which in turn reduced loneliness levels ( $\beta = -.33$ ; $\beta = -.23$ ). This result was found to be greater in those with greater interpersonal awareness.

### Facebook Addiction

Tang, Chen, Yang, Chung, and Lee (2016)	Taiwan	To assess how personality traits, influence FBBSS and FB addiction.	Cross-sectional survey.	792 Taiwanese university students. 65% female.	FAS, MMSMB5, OSSS, OOIS.	OSSS.	FB addiction.	Gender, grade, school type.	Hierarchical regressions.	Informational support was found to be positively associated with FB addiction ( $\beta = .46$ ), whereas social companionship was negatively associated with FB addiction ( $\beta = -.48$ ).
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### Well-being

Chan (2018)	Hong Kong	To examine the relationships between various forms of CMC and FTFC, and friendship quality, and their effects on psychological well-being.	Cross-sectional survey.	925 Hong Kong-based participants. 52% female, Age (M range = 45-49 years)	Psychological well-being items, SPANE, DAS-4, MOS-social support, and entrapment items.	Number of FB friends, FB-based communication.	Psychological well-being, positive and negative emotions.	Age, education, income, gender, religion, marital status, children.	Hierarchical regressions	FB-based communication predicted greater SS in 18-34 year olds ( $\beta = .11$ ). FB Friends predicted greater SS in the 18-34 ( $\beta = .26$ ), and 35-54 year olds ( $\beta = .15$ ), but not in the 55-70+ group. SS predicted psychological WB only in the 35-54 group ( $\beta = .15$ ), and did not predicted positive or negative emotions. FB-based communication and FB Friends predicted greater psychological WB in the 18-34 year old group ( $\beta$
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Chen and Bello (2017)	USA	To evaluate if receiving and providing SS on FB reduces stress, and improves life satisfaction.	Cross-sectional survey.	382 American undergraduate students. 52% female, age (M = 20.17, SD = 1.85).	ISSB, PSS, RSES, and SWLS.	A modified ISSB was used to measure both receiving and providing SS on FB.	Life satisfaction.	Self-esteem, providing social support (model 1), received SS (model 2).	Moderated regression.	= .16, $\beta$ = .15), FB-based communication also predicted greater negative emotions in the 18-34 year old group ( $\beta$ = .24) Receiving SS did not affect stress, or life satisfaction. Providing SS increased stress ( $B$ =.23), and reduced life satisfaction ( $B$ =-.02), with self-esteem moderating the relationship between providing SS and life satisfaction ( $B$ =-.13). Low self-esteem predicted greater life satisfaction for great providing SS behaviours ( $B$ =.15), whereas high self-esteem did not.
Hu, Kim, Siwek, and Wilder (2017)	USA	To evaluate how FB and personality traits effect perceived SS, online and offline social relationship satisfaction, and psychological WB.	Cross-sectional survey.	405 American college students. 71% females, age M = 19.8 (SD = 2.2).	FIS, SRSS, PSSS, SIAS, BFI, SWLS.	FB intensity/usage was measured using a 5-item scale.	Psychological well-being.	Personality differences (extraverts/introverts, neurotics/non-neurotics).	SEM.	FB intensity/usage directly predicted greater levels of online SRS ( $\beta$ = .38), and SS ( $\beta$ = .11), and lower levels of offline SRS ( $\beta$ = -.13). FB intensity/usage also indirectly predicted greater levels of psychological WB, and lower levels of social interaction anxiety via online and offline SRS, and SS. SS predicted higher levels of psychological WB ( $\beta$ = .39).
Huang (2016)	Taiwan	To investigation the effects of self-disclosure in SS and online WB, and if that effects the intention to continue to use social media.	Cross-sectional survey.	333 Taiwanese FB users. 52% female, 67% aged 20-30 years.	Adapted measures of self-disclosure, emotional and information support, online WB, and continuance intension.	All scales were modified to be relevant to the context of FB use.	Online social well-being, and social media continuance intention.	None.	SEM.	Online self-disclosure directly predicted greater FB-related SS ( $\beta$ = .58), which directly greater online social WB ( $\beta$ = .38), which in turn predicted greater levels of social media continuance intention ( $\beta$ = .62).

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H. Kim (2014)	USA	To examine how FBBSS effects psychological WB.	Cross-sectional survey.	626 American undergraduate students. 62% female, age M = 20 (SD = 1.96).	FIS, ISSB, SWLS, and a measure of interpersonal ties strength.	ISSB was modified to distinguish between supportive behaviours FTF and via FB.	Life satisfaction.	Gender, age.	Multiple regressions.	FB intensity ( $\beta = .27$ ), and number of strong ties ( $\beta = .23$ ) was found to significantly predict FBBSS. FBBSS did not predict life satisfaction, over and above FTFSS, and number of strong ties.
J. Kim and Lee (2011)	USA	To review how subjective WB is influenced by self-presentation strategies on FB.	Cross-sectional survey.	391 American undergraduate students. 72% female, age M = 19.57 (SD = 2.88).	ISEL, SHS, author-developed measures of positive and honest self-presentation.	ISEL was adapted to reflect SS drawn from FB, number of FB friends was also recorded.	Subjective well-being.	None.	SEM.	Honest self-presentation on FB predicted greater levels of perceived SS ( $\beta = .25$ ), which predicted greater subjective WB ( $\beta = .22$ ). Positive self-presentation on FB did not directly predict perceived SS, but did directly predict greater levels of WB ( $\beta = .12$ ), and indirectly predict WB through perceived SS ( $\beta = .06$ ). Number of friends was found to have a negative curvilinear relationship with SS ( $\beta = -.13$ ).
Liu and Yu (2013)	Taiwan	To examine the relationships between FB use, SS, and psychological WB.	Cross-sectional survey.	330 Taiwanese college students. Female 63%, age range 18-23 years.	FIS, ISEL, RSPWB.	FB usage was measured using FIS, and ISEL was modified to include an OSS factor.	Well-being.	None.	SEM.	FB usage predicted greater levels of OSS ( $\beta = .48$ ), which predicted greater FTFSS ( $\beta = .42$ ) and WB ( $\beta = .01$ ). The relationship between OSS and WB was also mediated by FTFSS ( $\beta = .25$ )

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### Professional Well-being

Chung and Chen (2018)	Taiwan	To explore the relationship between exchanging FBBSS and teacher self-efficacy.	Cross-sectional survey.	584 Taiwanese teachers. 92% female, 34% 11-15 years' experience.	Measures of teacher self-efficacy, receiving and providing SS.	A modified measure was used to measure both receiving and providing SS on FB.	Teacher self-esteem	Group membership and teaching experience.	Hierarchical regressions	In the final model, providing FBBSS predicted greater teacher self-esteem ( $\beta = .33$ ), whereas receiving SS did not.
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Gray, Vitak, Easton, and Ellison (2013)	USA	To examine the role of FB in the social adjustment of first year college students.	Cross-sectional survey.	338 college American students. 56% females, age M = 19.6 (SD = 2.12).	SACQ, author-developed measures of bonding social capital, access to academic support services, number of FB friends, and FB collaboration behaviours.	The number of college-based friends on FB, and a 9-item measure that captures how likely students are to use FB to coordinate study activities (information/-tangible support).	Social adjustment to college, bonding social capital.	Race, first generation to go to college.	SEM.	Number of college-based friends on FB was found to predict social adjustment to college ( $\beta = .16$ ). FB collaboration behaviours did not predict social adjustment to college, however, it did predict bonding social capital ( $\beta = .13$ ).
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*Note:* FB = Facebook, FBBSS = Facebook-based social support, FTFSS = Face-to-face social support, OSS = Online social support, SEM = Structural equation model, SS = Social support, WB = Well-being. *Scales:* ASQ = Adolescent Stress Questionnaire, BDI-II = Beck Depression Inventory-II, BFI = The Big Five Inventory, BSCS = Bridging Social Capital Scale, BSI = Brief Symptom Inventory, CCS = Communication Competence Scale, CES = Cyberbullying Experiences Questionnaire, CES-D = Center for Epidemiological Studies Depression, CMCCS Computer-mediated-communication Competence Scale, DAS-4 = Dyadic Adjustment Scale, D-UNCFSSS = Duke-UNC Functional Social Support Scale, ESS = Emotional Support Scale, ESS = European Social Survey, FAS = Facebook Addiction Scale, FIS = Facebook Intensity Scale, FMSS = Facebook Measure of Social Support, GDS = General Disclosiveness Scale, GMPS = Global Measure of Perceived Stress, HSM = Happiness Survey Monitor, IAS = Interpersonal Attraction Scale, INCOM = Iowa-Netherlands Comparison Orientation Measure, ISEL = Interpersonal Support Evaluation, ISSB = Inventory of Socially Supportive Behaviours, Mini-SPIN = Mini-Social Phobia Inventory, MMSMB5 = Mini-markers Scale to Measure the Big Five Personality Traits, MOS = Medical Outcome Study, MPHIM = Measure of Perceived Homophily Measure, MSPSS = Multidimensional Scale of Perceived Social Support, OESA = Ostracism Experiences Scale for Adolescents, OI = Outness Inventory, OOIIS = Online and Offline Interpersonal Interaction Survey, OSSS = Online Social Support Scale, PAQ = Paffenbarger Activity Questionnaire, PHQ-9 = Patient Health Questionnaire 9, PILL = Pennebaker Inventory of Limbic Languidness, PSSS = Perceived Social Support Scale, RANDMHI = RAND Mental Health Inventory, RSES = Rosenberg self-esteem scale, RSPWB = Ryff's Scales of Psychological Well-being, RUCLALS = Revised UCLA Loneliness Scale, SACQ = Student Adaptation to College Questionnaire, SES = Self-Esteem Scale, SHQ SF-36 = State of Health Questionnaire Short Form 36, SHS = Subjective Happiness Scale, SIAS = Social Interaction Anxiety Scale, SIPAQ = Social Influence on Physical Activity questionnaire, SMIM = Scale for Measuring Internet Motives, SMUIS = Social Media Use Integration Scale, SNI = Social Network Index, SNS = Social Network Scales, SPANE = Scale of Positive and Negative Experience, SPS = Social Provision Scale, SRRS = Social Readjustment Rating Scale, SRSS = Social Relationship Satisfaction Scale, SSQ = Social Support Questionnaire, SSSS = Scale of Subjective Social Status, SWLS = Satisfaction with Life Scale, WHOQOL-BREF = WHO Quality of Life-BREF.

SIPAQ: Social Influence on Physical Activity, FUI: Facebook Use Items, MII: Multiple Identities Items, SII: Social Integration Items, GBI: General Bridging Items, MDD: Major Depressive Disorder, CTI: Cognitive Triad Inventory, OSB: Online Support Behavior, PSS: Perceived Stress Scale, EFA: Exploratory Factor Analysis, GSPSS: Global Measure of Perceived Stress Scale.



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Table 2.

*Quality Appraisal of Included Articles using the Newcastle-Ottawa Scale (NOS) adapted for Cross-sectional Studies (Herzog et al., 2013) and the Critical Skills Appraisal Program (CASP) for Randomised Control Trials (CASP, 2017).*

Author(s), published date	Study Design	Selection			Comparability	Outcome			
		Representativeness of the sample	Sample size	Non-respondents	Ascertainment of the exposure (2 marks)	Based on design and analysis (2 marks)	Assessment of outcome	Statistical test	Quality
Chan (2018)	Cross-sectional survey.	+		+	++	++	+	+	Good
Chen and Bello (2017)	Cross-sectional survey.	+			++		+	+	Satisfactory
Chung and Chen (2018)	Cross-sectional survey.	+			+	++	+	+	Satisfactory
Cole et al. (2017)	Cross-sectional survey.	+		+	++	++	+	+	Good
Frison and Eggermont (2015)	Cross-sectional survey.	+			++	++	+	+	Good
Frison and Eggermont (2016)	Cross-sectional survey.	+			++	++	+	+	Good
Gray et al. (2013)	Cross-sectional survey.	+		+	++	++	+	+	Good
Hu et al. (2017)	Cross-sectional survey.	+		+	++	+	+	+	Good

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Huang (2016)	Cross-sectional survey.	+		+		+	+	Unsatisfactory
Indian and Grieve (2014)	Cross-sectional survey.	+		++	++	+	+	Good
Jang et al. (2016)	Cross-sectional survey.	+		++		+	+	Satisfactory
H. Kim (2014)	Cross-sectional survey.	+	+	++	++	+	+	Good
J. Kim and Lee (2011)	Cross-sectional survey.	+	+	++		+	+	Satisfactory
K. T. Lee et al. (2013)	Cross-sectional survey.	+		+		+	+	Unsatisfactory
Lima et al. (2017)	Cross-sectional surveys.	+		+	++	+	+	Satisfactory
Liu and Yu (2013)	Cross-sectional survey.	+	+	++	++	+	+	Good
McCloskey et al. (2015)	Cross-sectional survey.	+	+	++		+	+	Satisfactory
McConnell et al. (2017)	Cross-sectional survey.	+		++	++	+	+	Good
Nabi et al. (2013)	Cross-sectional survey.	+		++	++	+	+	Good
Oh et al. (2013)	Cross-sectional survey.	+		+		+	+	Unsatisfactory

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Park et al. (2016)	Cross-sectional study.	+			++		++		++	+		Good	
Seo et al. (2016)	Cross-sectional study.	+			++		+		++	+		Good	
Tang et al. (2016)	Cross-sectional survey.	+			+		++		+	+		Good	
Wright (2012)	Cross-sectional survey.	+			++				+	+		Satisfactory	
Wright et al. (2013)	Cross-sectional survey.	+			++		+		+	+		Satisfactory	
Zhang (2017)	Cross-sectional survey.	+		+	+		++		+	+		Good	
Author(s), published date	Study Design	Trial Results			Participant Methods			Results					
		Address the RQ	Randomised assignment	Participants accounted for	Blind to allocation	Group size	Group treatment	Effect	Precision	Application of results	Outcomes considered	Worth	Quality
Cavallo et al. (2014)	Randomised control study.	+	+	+			+	+			+	+	Fair