

The Effect of Interaction with Others Through Social Media on Mental Health

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Bachelor's Thesis

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15-06-2020

Abstract

The use of social media has increased significantly in the last two decades. Research on the effect of the use of social media has been performed by many researchers and institutes. However they do not find a consistent result. Theories exist that argue it has a negative effect on mental health, others claim it has a positive effect. Using the theory of social networks, it is hypothesized that the use of social media can have a positive effect on mental health. It is also hypothesized that using social media to interact with weak ties further increases satisfaction with life. 175 Participants filled in an online survey on a number of different studies. They were asked to report their use of social media to interact with strong and weak ties and their satisfaction with life. The correlation between social media use and satisfaction with life was investigated with hierarchical regression analyses. These analyses did not find any significant correlations between the use of social media and satisfaction with life. There was also no significant correlation found between the interaction with weak ties and satisfaction with life. Possible reasons for this are discussed. Possibilities for future research are also discussed.

Keywords: social media, mental health, strong ties, weak ties

The Effect of Interaction with Others Through Social Media on Mental Health

Social media has taken a big role in peoples day to day life. They use it to communicate with friends, keep up with daily news, follow their favourite brands and much more. The use of social media has increased greatly in the past two decades. Between 2005 and 2015 the number of adults using social media in America went up greatly from 7% to 65% (Perrin, 2015). This is also seen in other countries. This increase has flattened in developed countries in the past few years. However this rise of social media usage is still seen in emerging countries in more recent years (Poushter, Bishop, & Chwe, 2018).

The effects of social media on the mental health of people is a topic that is researched by many people and institutes. Mental health has many different aspects to it. The World Health Organization describes it as a state of well-being in which the individual realizes his or her own capabilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community (World Health Organisation, 2005). This includes many facets of life, including general physical health, economic status and social factors. The research on the effects of social media on mental health have shown many different results. A study by Berryman, Ferguson & Negy (2017) found that the use of social media is not a good predictor of different factors of mental health. Things like social anxiety and suicidal thoughts were not correlated with social media usage. This suggests that social media has no influence on peoples mental health.

There are however many studies that show a negative effect of social media on mental health. Chou & Edge (2012) found that people who spent more time on social media rate other peoples lives better compared to their own. They also disagree more with the statement that life is fair. This is also supported by Kross et al (2013). They found that social media predicts a negative change in how people feel and how they rate their satisfaction with life.

Self-esteem is also influenced by social media usage. According to Vogel, Rose, Roberts & Eckles, (2014), self-esteem is negatively correlated with social media usage. They showed that people who spend more time on social media, score lower on self-esteem. According to them, this is because they compare their own lives with the lives of other people who are in a better position. This causes a negative effect on one's self-esteem. This upwards comparison, meaning people compare themselves to people perceived to be better off, happens more often the more time someone spends on social media. This effect is also found by Donnelly & Kuss (2016). They found that time spent on social media is correlated positively with depression. This might be because people see others portraying their lives as better and happier than their own. These studies support the theory described by Vogel, Rose, Roberts & Eckles. It seems that comparison of one's life to another causes multiple negative effects, including lower self-esteem, higher scores of depression and a sense that life is unfair.

However this is not universally accepted. Not all of the effects of social media on mental health are negative. Valkenburg, Peter & Schouten (2006) conducted a study to look at the influence of social media on people's self-esteem and well-being. They found that people who often get positive replies on their social media have a higher level of self-esteem than people who often get negative replies. This might indicate that the use of social media can in fact increase self-esteem. Increase of self-esteem is also found by Gonzales & Hancock (2011). They argue this is because people can decide how to present themselves. This leads to the possibility to only present their best self. This relates to the previous theory of comparison leading to lower self-esteem. It could be argued that many people only show their best side on social media. Showing this side to others increases one's self-esteem. However comparing yourself to someone else's best side might cause lower self-esteem.

One of the biggest reasons for the use of social media is the communication with other

people. According to a study by Whiting & Williams (2013), 88% of people who use social media lists social interaction as one of their reasons. This study also states that some people interact more with others through social media as opposed to face to face contact. This is also supported by Drago (2015). This is why it is interesting to look further into the way in which people communicate with others on social media, and what the effects are on mental health.

People communicate and interact with people in different ways. They have social networks in which they interact with others. A social network is the series of relationships someone has with all the other people around him (Heaney & Israel, 2008). These social networks provide the person with multiple benefits. These consist of emotional support, instrumental support, informational support and appraisal support. Heaney & Israel (2008) provide a theory that explains how these factors have an effect on mental health. Having company and intimacy may improve mental health. These social networks provide these relationships with other people. This is also important in reducing risks on mental health. Stress for example, has a negative effect on mental health (Stead, Shanahan & Neufeld, 2009). Social networks can reduce the amount of stressors and the amount of time someone endures these stressors. (Heaney & Israel, 2008). The effect of social networks on mental health is also found by Achat, Kawachi, Levine, Berkey, Coakley & Colditz (1998). They found that women who are well integrated into a social network score higher on mental health measures than women who are not integrated into social networks.

Social networks are very complex systems. They include all kinds of interactions people have with others. They vary on many different levels. Ferlander (2007) describes these differences. They can vary in the way the hierarchy in a relationship is. People can be of equal status, which is a horizontal tie, or they can be higher or lower in status, which is a vertical tie. A horizontal tie could be a friend or coworker. A vertical tie could be your boss or

the government. They can also be formal or informal. Formal ties could be your boss, indicating an expected way to behave. Informal ties could be friends or coworkers, where the relationship is more open and free.

Another main difference between social ties is the strength of these ties. The distinction is made between strong and weak ties. Strong ties are connections to people that are close to us. They have a high number of interactions, high levels of emotion and can be highly intimate. Weak ties are the opposite. They have a lower number of interactions, have lower levels of emotion and are less intimate. (Aknin, Sandstrom, Dunn, Norton, 2010).

Nevertheless these weak ties offer many benefits and are very important to people.

Granovetter (1983) showed that weak ties can provide many advantages to someone. Because they often are part of different social networks, as opposed to strong close ties, they can provide you with different information. One of these is job opportunities. Having these weak social ties in your network can help with finding new jobs in places you previously did not know about. Being unemployed has a negative effect on mental health (Paul & Moser, 2009).

Having a social network including weak ties could therefore be related positively to mental health. A positive effect of the interaction with weak ties on people's mental health is also found by Sandstrom & Dunn (2014). They showed that people who have more interactions with weak ties on a daily basis report a higher level of happiness and belonging. They suggest this is because of the greater range of different people in their network. This leads to having different relationships in different situations. This makes sense because different people have different interests and ways they spend time. You cannot spend all your time or activities with strong ties. For example, if you perform a sport your close friends do not, you can still have meaningful interactions with other people performing that sport. They might be considered weak ties because you do not interact with them often or on a deep emotional level, but they

still provide a sense of belonging and this can lead to higher levels of happiness.

The theories of social networks so far have been discussed in the context of face to face interactions. These are interactions where the people are together physically. However as discussed earlier, more and more people spend a larger amount of time on social media as opposed to spending time or interacting with others face to face. There has been little research on the topic of interactions of people on social media with others, taken into consideration the framework of social networks. Drago (2015) claims that people experience a number of negative effects resulting from a higher amount of online communication. These include a lower amount of face to face interactions, lower quality of conversation and other people using technology, like a mobile phone or laptop, during their conversations. This result is opposed by a study by Chen & Li (2016). They found that the use of social media has a positive effect on psychological well-being. They also found that the social networks people have developed online are mostly similar to their face to face social network. They note that people use social media to increase the number of weak ties in their social network. Social media services use systems to suggest friends to their users, giving them more possibilities to create new ties to people.

There is no clear answer to the question what effect social media usage has on peoples mental health. There are multiple contradicting outcomes. This is why it is interesting to investigate this topic further. This study will look at the effects of the use of social media on mental health, considering the theory of social networks and the different type of social ties that exist in these networks. The hypothesis is that, since online networks are closely similar to regular physical social networks, interacting with these social networks will have a positive effect on mental health. It is also hypothesized that a higher amount of interacting with weak ties will further increase this effect and show higher levels of mental health compared to

people who interact less with weak ties.

Methods

Participants

Participants were asked to fill in an online survey. This was done either directly in person or through the sharing of the survey on social media. A total of 326 participated in the survey. Not every participant completed the survey. Of these 326 participants, 175 completed the whole survey. The sample consisted of 63 males (36%), 111 females (63.4%) and 1 other (0.6%). The age of these participants ranged between 17 and 66 ($M=29.51$, $SD=12.11$).

Measures

The survey consisted of a number of studies compiled together. The different studies were on a number of closely related subjects on sociality and well being. For this study, participants were asked about their use of social media and their satisfaction with life.

Use of social media. The use of social media was measured in the following way. Participants were asked to respond to two yes or no questions about their social media usage. First they were asked the question: Do you use social media to interact with people that are close to you (for example a close family member or good friend)? The next question was: Do you use social media to interact with people that are not very close to you (for example an acquaintance, co-worker or classmate)? If the participant responded to one or both questions with yes, they were asked about the frequency of these interactions. This was done using a five point Likert scale. This scale used the following measurements: [1] Less than once a week, [2] Once a week, [3] Multiple times week, [4] Daily and [5] Multiple times a day.

Mental health. Participants were asked to fill in the satisfaction with life scale (SWLS). This scale was designed by Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). This scale consists of five items on a seven point Likert scale. The Likert scale ranged

from [1] Strongly agree to [7] Strongly disagree. The items were reverse coded in the study, and later coded back to interpret the results. The scale used the following questions: [1] In most ways my life is close to my ideal, [2] The conditions of my life are excellent, [3] I am satisfied with my life, [4] So far I have gotten the important things I want in life and [5] If I could live my life over, I would change almost nothing. This scale was tested for internal validity and reported a Chronbach's alpha of 0.84.

Procedure

Participants used a link to open the survey in a web browser. The survey consisted of nine different blocks. These blocks contained different studies. These blocks were shown to the participants in random order, to prevent any biases. After filling in all the studies, participants were asked for their gender, age, occupation and education. After this the participant could close their web browser.

Results

Out of the 175 participants, 150 indicated they use social media to interact with people close to them. 136 Participants indicated they use social media to interact with people not very close to them.

A hierarchical regression analysis was used to determine whether the use of social media to interact with strong and weak ties has a correlation with satisfaction with life. Two models were used to look at both different questions.

Three sets of analyses were conducted. The three sets consisted of two models, making for a total of six models. The first set looked at whether or not the use of social media to interact with strong ties was correlated to satisfaction with life. The second set looked at the correlation between the interaction with weak ties and satisfaction with life. The third set looked at the combination of interaction with weak and strong ties and its correlation with

satisfaction with life.

Table 1. descriptives

	N	Mean	Std. Deviation
Age	175		
Do you use social media to interact with people close to you	175	1.14	.351
Do you use social media to interact with people not close to you	175	1.22	.417
How often do you use social media to interact with people close to you	150	3.72	1.165
How often do you use social media to interact with people not very close to you	136	2.47	1.095
In most ways my life is close to my ideal.	175	3.15	1.398
The conditions in my life are excellect.	175	2.73	1.284
I am satisfied with my life.	175	2.65	1.331
So far I have gotten the important things I want in life.	175	2.68	1.381
If I could live my life over, I would change almost nothing.	175	3.59	1.706
Satisfaction with life	175	25.201	5.596

The first model looked at the question if the interaction with people on social media close to you has an effect on satisfaction with life. The model included the variable of the interaction with strong ties in the first step. The second step included the variables of age and

gender. The first step reported a value of $r(173) = \text{adjusted } R^2 = .000$, $F = .942$, $p = .333$. The second step reported a value of $\Delta R^2 = .032$, $R^2 = .043$, $F = 3.905$, $p = .022$. The interaction on social media with strong ties does not significantly increase the level of satisfaction with life. The control variables of age and gender do have a significant effect on satisfaction with life.

The second model looked at the question if the interaction with weak ties on social media has an effect on satisfaction with life. This model included the use of social media to interact with weak ties in the first step. Age and gender was included in the second step. The first step reported a value of $\text{adjusted } R^2 = -.002$, $F = .658$, $p = .418$. The second step reported a value of $\Delta R^2 = .046$, $\text{adjusted } R^2 = .023$, $F = 3.227$, $p = .042$. The interaction on social media with weak ties does not significantly increase the level of satisfaction with life. The control variables of age and gender do have a significant effect on satisfaction with life.

Now the frequency of using social media to interact with people is considered. The third model looked at the question if the amount of times interacting with strong ties on social media has an effect on satisfaction with life. The model included the frequency of interaction with strong ties in the first step. The second step included the variables of age and gender. The first step reported a value of $\text{adjusted } R^2 = -.006$, $F = .113$, $p = .737$. The second step reported a value of $\Delta R^2 = .069$, $R^2 = .50$, $F = 5.389$, $p = .006$. The frequency of interacting with strong ties on social media does not significantly increase the level of satisfaction with life. The control variables of age and gender do have a significant effect on satisfaction with life.

The fourth model looked at the question if the frequency of interaction with weak ties on social media has an effect on satisfaction with life. This model included the frequency of interacting with weak ties in the first step. Age and gender were included in the second step.

The first step reported a value of adjusted $R^2 = -.007$, $F = .075$, $p = .784$. The second step reported a value of $\Delta R^2 = .072$, adjusted $R^2 = .051$, $F = 6.101$, $p = .007$. The frequency of interaction on social media with weak ties does not significantly increase the level of satisfaction with life. The control variables of age and gender do have a significant effect on satisfaction with life.

Now the combination of the interacting with strong and weak ties is considered. The fifth model looked at the correlation between the use of social media to interact with weak and strong ties on satisfaction with life. The first step reported a value of adjusted $R^2 = -.005$, $F = .604$, $p = .584$. The second step reported a value of $\Delta R^2 = .045$, adjusted $R^2 = .029$, $F = 4.006$, $p = .020$. Interacting with strong and weak ties on social media does not significantly increase the level of satisfaction with life. The control variables of age and gender do have a significant effect on satisfaction with life.

The sixth model shows the correlation between the frequency of using social media to interact with strong and weak ties and satisfaction with life. The first step reported a value of adjusted $R^2 = -.015$, $F = .083$, $p = .921$. The second step reported a value of $\Delta R^2 = .092$, adjusted $R^2 = .063$, $F = 6.079$, $p = .003$. The frequency of interacting with strong and weak ties on social media does not significantly increase the level of satisfaction with life. The control variables of age and gender do have a significant effect on satisfaction with life.

Discussion

The use of social media has gone up significantly over the last number of years (Perrin, 2015; Poushter, Bishop, & Chwe, 2018). With it, the concern that this causes mental health issues are related to the use of social media has gone up. A great amount of research has been done on this topic. Some of these find no effects of social media on mental health (Berryman, Ferguson & Negy, 2017). Others find negative effects, ranging from higher

amounts of depression, lower satisfaction with life and lower self-esteem (Chou & Edge, 2012; Donnelly & Kuss, 2016; Kross et al, 2013; Vogel, Rose, Roberts & Eckles, 2014). Other studies even find positive effects including higher self-esteem and positive effects on psychological well-being (Chen & Li, 2016; Valkenburg, Peter & Schouten (2006) Gonzales & Hancock (2011). This study attempts to find an answer to the question if there is a correlation between the use of social media to communicate with strong and weak ties and mental health.

Using a hierarchical regression analyses, a total of six models were considered. These models looked at the correlation between satisfaction with life and the interaction with strong and weak ties, and the frequency of these interactions. These models did not find any significant correlation between the use of social media to interact with strong and weak ties and satisfaction with life. The control variables of age and gender did find an effect on satisfaction with life. Age had a positive correlation with satisfaction with life, and the female gender had a negative correlation with satisfaction with life. The hypothesis that the interaction with social networks has a positive correlation with mental health has been rejected. The hypothesis that higher degrees of interacting with weak ties would have a positive correlation with mental health has also been rejected.

One explanation could be that there is no effect. This goes against the theory suggested by Granovetter (1983) on the benefits of interacting with weak ties. This could be due to the nature of the interactions. People do interpret online interactions different as compared to face to face interactions, according to Drago (2015). They are of lower quality. However this goes against the findings of Chen & Li (2016) who did find a positive correlation of social media usage and psychological well-being. It could be that the truth is in the middle, which means such effects simply do not exist.

There are however a number of limitations to this study. First is the use of the Satisfaction with Life Scale as a measure for mental health. It might not be the best indicator. There is research that strongly links these two concepts together (Guney, Kalafat, & Boysan, 2009), but it might be measured in more ways. Another reason could be the Corona pandemic of 2020. Unfortunately this study was conducted as the pandemic was present and limited peoples ability to move around freely and live a normal life. This meant that data collection was more difficult. It was not possible to approach people on campus or on the street to have them participate in the study. Everything had to be done online. This resulted in a lower than expected number of participants. This could have effected the data. A larger number of participants would have made for a more effective data analyses. Another way the data could have been affected is the fact that most of the respondents who filled in the survey, did so after seeing this survey posted on social media. This might have caused the people that filled in this survey to already have been people who use social media more than average. This means that it is not a good representation of the real world. Another reason could be that many social activities were prohibited and stores, hairdressers, bars and restaurants were closed. People were suggested to work from home by the government and stay home if they felt ill. This might have caused a ceiling effect. It might have been the case that people who normally would not interact with weak or strong ties on social media, started to use social media because they were not able to otherwise. This makes it very hard to compare people. Since there is now less difference regarding the use of social media, it is harder to find effects of these variables on mental health. It could also be that the coronavirus impacted mental health scores. Perhaps people who would normally rate their satisfaction with life higher under normal circumstances, rated their satisfaction with life lower due to the effects of the pandemic.

Future research on the topic is still very valuable. There are conflicted results of the relation between the use of social media and mental health. Future research could perhaps measure mental health with multiple constructs, to obtain a better measurement of mental health. It could also try to limit the possible ceiling effects or other effects on the data collection caused by the pandemic. This would make for a more representative and varied sample in order to test the hypothesis suggested by this study.

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