The Impact Of Social Media Usage On Mental Health Of Youngsters In Pakistan: Mediation Of Depression And Moderating Role Of Parental Attachment

Kiran Naz*¹ , Irum Rasheed² , Areeba Ikram³ , Sana Shahzadi⁴

₁*Lecture, Department of Management Sciences, Faculty of Management Sciences, Riphah International university, Peshawar Road, Rawalpindi *kiran.naz@riphah.edu.pk*
₂*Radiologist, Primax clinic & diagnostics, Rawalpindi.*
₃*Radiologist, POF Hospital, Islamabad.*
₄ *Lecturer, Holy Family Hospital, Rawalpindi.*

ABSTRACT

Social media usage is the most likely going on activity of current generation. Such sites are directing towards entertainment and communication sources that is growing in recent years. So, to overcome this problem, parents must play a significant role in the lives of their children and to keep their check while using such social media sites more frequently. The area of current research was some universities of Islamabad, Rawalpindi & also some online excessive social media users. The target population was both female and male belonging to age group 15-25 who reported to be using SNS excessively through research tool questionnaires. 400 questionnaires were distributed manual and online. By hand we got 70 responses while through online we got 161 responses back so overall response rate was 58%. In order to effectively handle this issue of current century, causal based observational study has been conducted to explore this relationship between variables as social media usage and mental health of youngsters with the mediation of depression and moderation of parental care. For data collection, convenient sampling method was used under deductive research approach. Linear regression models by SPSS software were used to assess if social media use predicted depression or if depression predicted social media use. After successful implementation of SPSS software it was indicated that there exists positive relationship between social media use and ill mental health among youngsters with positive mediation of depression between them. Parental support is acting as a significantly moderator in the relationship between depression and mental health. The current study shows that excessive social media usage by youngsters is actually causing depression among them that eventually affects their mental health. This group of youngsters is easily distracted by captivating social media sites and its continuous usage affects their mind badly while if their parents focus more on their children, then their mental health could be stabilized.

Key words: Anti-social behavior, displaced behavior theory, Ill mental health & depression, Parental care, quantitative research.

1. INTRODUCTION

After the emergence of social media, its use and access has been expanded aggressively. People use social networking sites for communication purposes, sharing ideas with others and especially for self-representation. Increase number of social media users is a valid authentication that people have speedily gained access to social communication as an integral part of their life. Social media can be defined as "the forms of electronic communication through which users

create online communities to share information, ideas, personal messages, and other content like videos" (Merriam Webster). As there are both positive and negative consequences of social media usage but it's obvious that negativity has stronger impact than positivity on human mind. As social media portrays behavioral attributes that are closely linked to individual's personality, activities, mood orientations and communication.

In early times, many researchers found that more internet usage result in negative consequences on some one's health. It was termed as "I-disorder" that depicts inverse relationship between excessive media usage and healthy mental health (Rosen, 2012). However, countless studies have shown a direct strong proportional relationship between social media use and increase risks of mental illness including depression, anxiety, compulsive behavior and narcissism. Pantic et al. (2012) showed that more time spending on Facebook by high school results in high level of depression and antisocial behavior.

In another study, it was concluded that more Facebook activity results in more narcissism that eventually decrease depression but it's not enough to be counted as its positive outcomes (Rosen, 2013). They also found that younger generation now a days keep check on their messages and social sites more anxiously than the older generation. This was termed as Phantom syndrome as "perceived vibrations from a cell phone that is not vibrating" has been reported by large community (Drouin et al., 2012). This syndrome may exhibit illustration of depression in youngsters having great obsession for checking their messages and social networking sites more

often. Such individuals with depression are less socially active with greater negative emotions. While in Pakistan from 2011 the usage further raised up to 31 million users (ICT indicators, 2010). The basic thrust of this paper is to emphasize on negative consequences of social media on mental health and excessive usage leading to depression and anti-social behavior among adults that emphasizes on major gaps that currently exist in literature highlight. It will also emphasize a clear impact of most habitually used social media sights by youngsters and daily hour's consumption by these sights. This study will help us to analyze the moderating role of parental care to reduce depression created by excessive media usage.

The theoretical framework of this study through a diagram in Figure I (below), helps to examine relationship between variables of this research namely impact of social media excessive usage, depression, deterioration of mental health of youngsters and parental care. Following are the hypothesis extracted from framework as mentioned below:

H1: There is a positive relationship between excessive social media usage & depression.

H2: There is a positive relationship between depression & mental health of youngsters.

H3: The association of social media usage & mental health of youth is positively mediated by depression

H4: Parental support moderates the link between depression and mental health such that more parental care weakens relationship between social media usage and depression.

Figure I: Research model
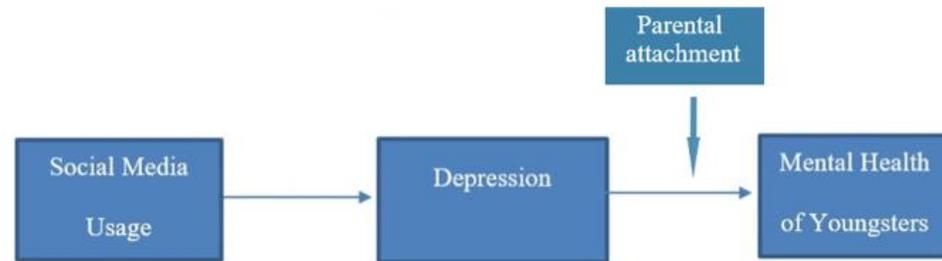
2.   LITERATURE REVIEW:

Social media belongs to web-based applications that allow individuals to access and develop new material of interest using social networking sites (Boyd and Ellison, 2008; Kaplan & Haenlein, 2010). Social networking sites are of great significance as it acts as an important part of communication among youngsters of U.S (Ito et al., 2010; Purcell, 2012). Basically, social media provides a pathway to its users to develop and promote social interactions with others on internet. Similarly, they share their daily routine activities such as pictures, day to day adventures, assumptions etc.   Social media is basically affecting young one's life in both positive as well as negative aspects. According to PISA Wellbeing study a 15-year-old boy expressed his feelings about social media that "I forget about time when I'm using digital devices" and "I feel really bad if no internet connection is possible". From last year's social media use has become an all-time activity that is so popular all over the world (Kuss & Griffiths, 2011). Individuals visit social media sites to engage in many different types of entertainment and social activity including playing games, socializing, passing time, communicating, and posting pictures (Allen et al., 2014; Ryan et al., 2014). Pew Internet and American Life Project shows that 65% of all Americans use social sites in 2015 while 90% of individuals having age between 18-29. Furthermore 90% of people use social sites

habitually so these findings clearly depict increase influx of social sites usage among youngsters (Verduyn et al. 2017: 277). Depression is a psychological disorder associated with frustration, appetite loss, mood swings and loss of interest in social well beings. This life-threatening problem needs a short time remedy otherwise it could be more severe with time and could lead to devastating consequences. Social media depression is defined as a depression that develops when Pre teens and teens spend a great deal of time on social media sites, such as Facebook, and then begin to exhibit classic symptoms of depression (Davila et al., 2009). The phrase 'social media depression' has been fabricated to show that maladaptive use of social media initiates depressive symptoms. This daily excessive use of social sites makes youngsters more susceptible towards anxiety, depression and other mental disorders (APA, 2011). Development of adolescents depends upon the cordial relationship between folks and their kids. Primarily young adulthoods demand longer from their folks throughout their development stages as a result of this the foremost risky section of their resource. Thus, thanks to such demands it's terribly essential to produce them mental satisfaction by meeting their distinctive wants.

(A)   Relationship between impact of social media usage & depression:

A Croatian study (Pantic et al., 2012) revealed a positive correlation between depression and time spent on facebook by high school. Further demonstrated by Rosen et al. (2013) that those individuals having excessive usage of social media are associated with major depressive symptoms. Another study on American students also confirmed loneliness associated with maladaptive use of social media (Lou et al., 2012). Heavy media user youngsters are being accused as having unhappy or boredom level and less contentedness Sawyer et al. (2010). According to this hypothesis spending more time on social media "displaces" time to be spent on other part time social and physical activities that in turn results in high level of depression, loneliness and anxiety (Kraut et al., 1998). Based on the above arguments we hypothesize that:

H1: There is a positive association between social media excessive usage & depression.

WHO states mental health as "a state of well-being in which every individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community"(WHO, 2013) One of the emerging causes of disability in the world is Mental illness. An estimated shows that around 300 million people are having severe form of mental issues including depression and other mental disorders (World Health Organization, 2001). After the evolution of technology these mental disorders are collectively termed as "I Disorders" that determines all mental problems specifically due to excessive social media usage (Rosen, Cheever, and Carrier, 2012. Rosen et al. in 2013 conducted a study on 1143 college students to determine their facebook usage and he found that major depressive disorders like bipolar mania, narcissism, compulsive behavior and anti-social personality is associated with excessive facebook usage.

(B)   Relationship between Depression & mental health:

In terms of psychological well-being, depression continues to be studied frequently because of its prevalence and concern on how depression may impact other areas of individuals' lives that leads to mental illness. Depression is defined as psychiatric disorder and the common mental illness of present century which is known as psychiatric cold. In 2003 a study conducted by Kessler and colleagues that stated that the prevalence rate of depression in 16.2% as it influenced around 34 million US adults. This sort of depression becomes more aggressive with chronic episodes (Richards, 2011). WHO also reported that in coming future depression could be the leading cause of mental disorders (Richards, 2011). American college health association (2013) showed their data in which 31.3% college students were in chronic stage of mental disorder due to depression as they were not able to function properly while 45% were hopeless from their lives and 59.6% felt sad at some points.

As few researches clearly indicated that rate of depression and its severity increases during adolescence while symptoms remain stabilize during emerging adulthood (Galambos & Krahn, 2008). Depression has negative effects on our behaviors such as loss of interest, productivity, and social contact. As UN suicide states that 11 leading causes of death in US is suicide that occurs every 16 minutes that has been diagnosed as depressive disorder due to ill mental health. Unipolar depressive disorder is a common mental health problem in adolescents worldwide with an estimated 1-year prevalence of 4–5% in mid to late adolescence. Based on the above arguments we hypothesize that:

H2:   There is a positive association between depression and ill mental health.

(C)   Mediating role of depression between social media usage & mental health:

Internet usage contributes to mental illness and depicts mental disorders along with negative outcomes such as depression, anxiety, loneliness, narcissism and compulsive behavior. Rosen (2013) invented this term "I-disorder," defined it as the inverse relationship between internet usage and mental health others researchers also focused on detrimental effects of social media on mental health of teens. Davila et al. in (2012) showed that social media produce negative effects on psychological health. He conducted a study on 33 undergraduate students and concluded that social networking sites are associated with more negative and less pleasing interactions that produce higher level of depressive symptoms. As there is no tool for the analysis of mental illness or mental health thus the diagnosis is based only on person's own experiences, mental examination or his attitude disclosed by his own relatives. So here we are using social media as a tool to detect depressive mental disorders in individuals.

Displaced behavior theory:

This theory basically explains how sedentary behavior inversely associates' social media impact on mental health through displacement. As this theory basically indirectly point outs the absence of other physical activities due to excessive usage of social media results in such disorders. Term "Facebook depression" clarifies social media effects on mental health of young population that leads to depression in a report by American Academy of Pediatrics. Based on the above arguments we hypothesize that:

H3: Depression will mediate the relationship between excessive usage of social media and ill mental health.

(D)   Moderating role of parental care:

Despite adults are getting a lot of freelance in their call throughout rising adulthood section, folks will play a vital role for his or her upbringing in a very positive approach as a result of this section is packed with danger and abrupt changes thus folks ought to guide their kids towards the proper path throughout this essential section of life (Arnett, 2000). Adolescence is extraordinarily difficult section that might solely want full parental care that might facilitate them in higher cognitive process (Chaplin et al., 2012). Such positive relationship between folks {and kids and youngsters} motivates positive higher cognitive process which will defend their children from depression, anxiety and different social distress (Toombs, 2014). Analysis has shown however parenting will have a positive impact on adolescents' psychological well-being (Steinberg, 2001). Those kids with smart cordial relation with their folks have fewer depressive symptoms and a lot of smart psychological state (Galambos et al., 2006).

Furthermore, adults having favorable support by their folks were physiologically stronger and fewer distressed than those that had less parental support (Holahan, Valentiner & Moos, 1995). Another study investigated the role of attributional vogue and perceived parental support and their relationship with depressive symptoms throughout mid-adolescence (Reuger & Malecki, 2011). Results urged that parental support qualified the link between attributional vogue and depressive symptoms for each boy and women.

Particularly maternal support plays very important role in to cut back depressive symptoms by making a trustworthy relation with their kids (Holahan, Valentiner & Moos, 1995). Thus, gap between such relations ought to be reduced to tier that it couldn't any lead adults towards negativity. With the infinite quantity of your time teenagers pay on cell-phones, computers and various varieties of video games;

their attention is absorbed by these devices and this can be one main reason why new technology my cause a decline in face-to-face relationships like the adolescent-parent relationship. Most folks have positive relationships with their adolescents. However, folks currently need to vie with the technology that's a growing a part of their adolescents' lives.

H4: Parental support moderates the link between depression and mental health such that more parental care weakens relationship between depression and mental health.

3. Methodology:

The area of current research was some universities of Islamabad, Rawalpindi & also some online excessive social media users. The target population was both female and male belonging to age group 20-30 who reported to be using SNS excessively. Here the thrust of study is to determine negative effects of excessive usage of social media by those youngsters who frequently use these sites. Convenient sampling technique was used to collect the data. 400 questionnaires were distributed manual and online. By hand we got 70 responses while through online we got 161 responses back so overall response rate was 58%.

In the first phase of the study pretesting was carried out by distributing 50 questionnaires in order to check the reliability of the instrument. For the analysis of quantitative data, statistical package for social sciences (SPSS) was used which facilitates the researcher in more than one way such as time saving and reduction of large amount data to basic pattern etc. for interpretation of results, Univariate analysis is done to check reliability of each variable. The tool was prepared in English language. For the analysis purpose, descriptive analysis was conducted using the Statistical Package for Social Science (SPSS)

version 20. Details of the measurement of each variable are described in the following section.

This study has adopted social media usage scale from Lauren Bassett et al. (2016). The scale was subdivided into 3 sections from Appendix (A) including social media usage, depression & mental health issues. All 4-items were measured on a five-point scale ranging from 1 to 5 in frequency level (strongly disagree, disagree, somewhat agree, agree and strongly agree). Few items as what social media platforms do you use more often? How frequently do you use social media each day? An internal reliability of this measure is 0.756.

This study has adopted 7- item social media usage scale from Lauren Bassett et al. (2016). All 7-items were measured on a five-point scale ranging from 1 to 5 in frequency level (strongly disagree, disagree, somewhat agree, agree and strongly agree). Few items were Do you feel sad or anxious? Do you see yourself as equally worthy and deserving as other people? The internal reliability of this measure is 0.703. This study has adopted 9- item social media usage scale from Lauren Bassett et al. (2016). All 9 items were measured on a five-point scale ranging from 1 to 5 in frequency level (strongly disagree, disagree, somewhat agree, agree and strongly agree). Few as "In your view, do you think people are happier when they have more followers or likes? Do you often feel the need to check social media or that you are missing out when you haven't checked it in a while? The internal reliability of this measure is 0.791. Parental Scale was previously obtained from 28-items "Inventory of Parent and Peer Attachment" (IPPA, by Armsden & Greenberg, 1987) that has further reduced to 14-item parent attachment scale Vignoli and Mallet (2004). All 14 items were measured on a five-point scale ranging from 1 to 5 in frequency level (strongly disagree, disagree, somewhat agree, agree and strongly

agree). Few as my parents help me to understand myself better. I get upset a lot more than my

parents know about. The internal reliability of this measure is 0.760.

4.   Results

Variables.	1	2	3	4
1. SMU	(.880)			
2. DP	.588**	(.846)		
3. MH	.496**	.375**	(.940)	
4. PA	-.374 **	-.351**	-.554**	(.862)

4.1.   Descriptive   statistics   (Univariate Analysis):

The total number of respondents were 231, whereas the mean values depict the average

and regression). Distribution of variable around mean is Skewness while probability of this distribution of variable if kurtosis. A data value that falls within an acceptable range of skewness and kurtosis tends to satisfy the assumption of

responses of respondents for all variables on a Likert-type scale. Skewness and kurtosis values were tested in order to check whether the data meet the assumption of normality for parametric tests for data analyses (correlatio

normality. It is observed that the skewness values for all the variables also lie in the acceptable range of -1 to +1. As our value lies between the standard values so there is no skewness issue.

4.2.   Pearson   Correlation   analysis (Bivariate Analysis):

Table I: Correlation Analysis

SMU=Social Media Usage, DP= Depression, MH = Mental Health, PA= Parental Attachment.
ns = not significant, *p < .05, **p < .01,
Cronbach's Alpha Values in brackets, n = 231
        The demographic variables consisted of age, gender, and education. Gender was coded 0= Female and 1= Male. Age was reported in years, and education was also reported as higher, middle and primary education of the participants. As social media usage is not significantly correlated with any demographic variable while depression and mental health are significantly correlated with Gender while parental care is significantly

correlated with age. Results were considered significant at p ≤ 0.05. With depression it is positively but weakly correlated and values are (r=0.187, p=0.01)

Table 1 (below) shows correlation analysis among all variables. With mental health it has moderate positive correlation (r=0.496**) means with increase social media usage there is moderate risk of mental deterioration. With parental care it offers weak relationship but negative correlation that clearly shows that with high level of parental care there will be reduced social media usage.

4.3. Regression analysis:

Model 4 of PROCESS Macro for SPSS has been performed on dependent variable to check the direct and indirect effect on it. In first step of the mediation model, the regression of social media usage on Mental health of youngsters, ignoring the mediator (depression), was significant, β = .5714, p = <.001. So, the hypothesis (H1) is accepted that there is a positive relationship between S=social media usage and mental health. Second step showed that the regression of the social media usage on the mediator, depression, was also significant, β= .5347, p = <.001 which leads to the acceptance of H2 that is there is a positive relationship between social media usage and Table II (below) below shows moderated regression analysis of hypothesis 3. In the first step demographics were controlled showing R2 = 7.4

depression. Third step of the mediation process showed that the impact of mediator (depression) on dependent variable was also significant, β = .1729, p =. 0173.So, H3, that there is a positive relationship between depression and mental health, is supported. Fourth step of the analyses revealed that, controlling for the mediator (depression), social media usage score was still a significant predictor of mental health, β = .4789, p <. 001.This meaningful reduction in the presence of mediator between Independent Variable and Dependent Variable proves that depression partially mediates in the relationship between social media usage and mental health. The indirect effect is.0925 which lies between .0319 and .1504.

in dependent variable with t value of 10.3 &1.8 with aggregate R2= 36.5% respectively. After regressing interaction term, β and ΔR2 of 1.4%

	B	SE	T	P
Social media Usage ⟶ Mental Health	.5714	.0553	10.3373	.0000
Social Media usage ⟶ Depression	.5347	.0441	12.1156	.0000
Depression ⟶ Mental Health	.1729	.0722	2.3943	.0173
Social Media Usage ⟶ Depression ⟶ Mental Health	.4789	.0671	7.1407	.0000
Bootstrap Results for Indirect Effect	Indirect Effect	LL 95% CI	UL 95% CI	
	.0925	.0319	.1504	

%; then β values for respective independent variables and moderator shows that a unit change 3.

clearly shows acceptance of hypothesis

Table II: Mediated Regression Analysis

The below table III gives an illustration of the moderated regression analysis. In first step the effect of demographics is mentioned. The value of R^2 is 0.005 which means that they are responsible

for causing only 0.5% change in dependent variable. In second step depression and parental attachment were regressed on dependent variable and both show significant impacts. The value of

change in R^2 is 0.351 which means that they both are responsible for causing 35.1% change in dependent variable. Results show that in third step after incorporating interaction term such as depression × parental attachment, the change in R^2 is significant. According to regression analysis results the parental attachment statistically significantly moderate the relationship between depression and mental health leads towards the acceptance of hypothesis that parental attachment moderates the relationship between depression and mental health in such a way that relationship will get weaker when parental attachment is high than low.

Table III: Moderated regression analysis

| Predictors	Mental Health		
	B	**R ^{2}**	**Δ R ^{2}**
Step 1			
Control Variables		.005	
Step 2			
Depression	.262***		
Parental attachment	-.548***	.356***	.351***
Step 3			
DP×PA	-.110*	.366*	.010*

   * p<.05 ** p<.01, *** p<.001,

DP= Depression, PA= Parental attachment

ns = not significant, *p < .05, **p < .01

Figure II below shows moderation graph depicting this negative moderation.

Figure II: Two-way interaction plot to determine interaction effects

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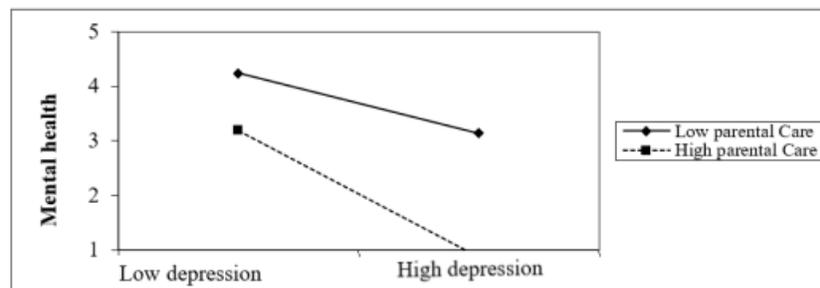
5.   Discussion

The goal of the present study was to examine that either social media usage deteriorates mental health of youngsters and induces symptoms of depression or not. It also assesses whether parental support moderated the relationship between social media use and depression. This study provided some important findings in terms of the relations between social media usage and deterioration of mental health of youth along with

episodes of depression. The correlation matrix is significant at the 0.05, whereas the regression is significant in the case of both mediation as well as moderation. The bivariate results indicate that there is a relationship between depression and social media usage, and the relationship between social media usage and deterioration of mental health of youth as depression is acting as mediator between both dependent and independent variables. It can be explained by few researches that rate of depression and its severity increases during adolescence while symptoms remain stabilize during emerging adulthood (Galambos & Krahn, 2008).

With the case of social media specifically, this could be notably true as a result of the intention of social media sites is to supply a platform for individuals to speak and share with each other. As the hypothesis was correct then we should always see that these relationships promote feelings of depression. Rosen, Cheever, and Carrier in 2012, unreal this term "I-disorder," outlined it because the inverse relationship between web usage and mental state others researchers targeted on detrimental effects of social media on mental state of teens.

Conjointly depression acts a go-between among social media usage and ill mental state as a result of individuals don't involve themselves in any inventive activities physically that would have an effect on them physiologically. As Thirlaway and Benton (1992) study showed that only one hour of physical activity in week will reduce depression in patients. Another issue is social withdrawal that induces depressive symptoms to. A lot of individuals are socially face to face connected with each other a lot of reduction of depression can occur that's conjointly tested by previous studies. The 'social interaction' hypothesis by Ransford (1982) projected that except physical activities, social interaction plays an important role to boost

mental state. An internet usage and mental health others researchers also focused on detrimental effects of social media on mental health of teens.

The hypothesis that parental support would moderate the link between depression and mental health was supported by this research. Hypothesis 4 is also confirmed by this research. The longer people spent on social media, the upper levels of depressed symptomatology. Additionally higher levels of maternal and paternal support foreseen lower levels of depression. Another study showed its results that adults having top of the range relation with their people had low depression symptoms (Aseltine et al., 1998). As an example, a recent study found that Associate in Nursing adverse family atmosphere, comprised of a range of parts like lack of parental support, was associated with higher levels of rising adult depressive symptoms (Nelson, 2011). It's going to be that as long as people are receiving some variety of support from a private or a bunch of people, the support could mitigate the potential negative consequences that a scarcity of parental support has on rising adult depression. Few studies also showed that parental care doesn't support this relationship nut in this study it is proved that parental is playing significant role in reduction of ill mental health symptoms.

6. Limitations & Future Directions

According to the results and discussion of study we come up with some limitations and future directions for further research. Limitations of the study are that there was not any evidence regarding frequency of social media usage and also dearth of information of what people did online that could actually reflect their activities. As solely fifty responses were there therefore per such little sample size, we are able to solely predict some instances. Additionally, it's still unknown if people have become depressed as a result of, they pay most time on social media or if

people are already depressed and seeking replacements for physical interactions on-line. As this study only based on psychological effects of social media on youngsters so future implications are to find out the negative effects of social media on physical life of individuals that is the sedentary lifestyle causing major health issues. Future directions are also to study the link between social media use and depression each lengthways and by experimentation to know the causative pattern of this relationship. Finally, future analysis ought to embody parents' views of

their rising adults' social media use, particularly considering a majority of rising adults still reside reception with their folks (Ryan et al., 2014). Maybe it's not parental support that will moderate the link between social media use and depression however it's going to be however folks feel regarding their children's social media use that would moderate this relationship. Further, the results from the study ought to inform future interventions that would be place in situ to buffer the harmful effects significant social media use could communicate on people.

References

1. Allen, K. A., Ryan, T., Gray, D. L., Mclnerney, D. M., & Waters, L. (2014). The Australian Educational and Developmental Psychologist, 31, 18–31.

2. American Psychological Association (APA), (2011). Science Daily: http://www.sciencedaily.com/releases/2011/08/110806203538.htm

3. Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. Journal of Youth and Adolescence, 16(5), 427-454

4. Arnett, J.J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. American Psychologist, 55(5), 469-480.

5. Aseltine, R.H., Gore, S., & Colten, M.E. (1998). The co-occurrence of depression and substance use in late adolescence. Development and Psychopathology, 10, 549- 570.

6. Boyd d and Ellison NB (2008) Social network sites: definition, history, and scholarship. Journal of Computer-M

7. Chaplin, T.M., Sinha, R., Simmons, J.A., Healy, S.M., Mayes, L.C., Hommer, R.E., Crowley, M.J. (2012). Parent–

adolescent conflict interactions and adolescent alcohol use. Addictive Behaviors, 605-612.

8. Davila, J., Hershenberg, R., Feinstein, B. A., Gorman, K., Bhatia, V., & Starr, L. R. (2012). Psychology of Popular Media Culture, 1(2), 72–86.

9. Drouin M, Kaiser DH & Miller DA, Phantom vibrations among under-graduates: Prevalence and associated psychological characteristics, Journal Computers in Human Behavior archive.28 (2012): 1490-1496.

10. Research Center's Internet & American Life Project, pp. 1–14, Washington, DC.

11. Galambos, N.L., Barker, E.T., & Krahn, H.J. (2006). Depression, self-esteem, and anger in emerging adulthood: Seven-year trajectories. Developmental Psychology, 350-365.

12. Galambos, N.L. & Krahn, H.J. (2008). Depression and anger trajectories during the transition to adulthood. Journal of Marriage and Family, 15-27.

13. Holahan, C.J., Valentiner, & Moos, R.H. (1995). Parental support, coping strategies, and psychological adjustment: An integrative model with late adolescents. Journal of Youth and Adolescence, 24(6), 633-648

14. Ito M, Baumer S, Bittani M, et al. (2010) Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media (The John D. and Catherine T. MacArthur Foundation Series on Digital Learning). Cambridge, MA: MIT Press.

15. Kaplan AM and Haenlein M (2010) Users of the world, unite! The challenges and opportunities of social media. Business Horizons 53(1): 59–68.

16. Kessler, R.C.; Berglund, P.; Demler, O. et al. 2003. The Epidemiology of Major Depressive Disorder: Results from the National Comorbidity Survey Replication. Journal of the American Medical Association 289 (23): 3095-3105.

17. Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukophadhyay, T., & Scherlis, W. (1998). Internet paradox: A social technology that reduces social involvement and psychological well-being? American Psychologist, 53(9), 1017–1031.

18. Kuss, D. J. & Griffiths, M. D. (2011). Online social networking and addiction: A literature Addictive use of social media, narcissism, and self-esteem 18 review of empirical research. International Journal of Environmental and Public Health, 8, 3528–52

19. Lenhart A (2012) Teens & online video. Pew Research Center's Internet & American Life Project, pp. 1–13, Washington, DC.

20. Lou, L. L., Yan, Z., Nickerson, A., & McMorris, R. (2012). An examination of the reciprocal relationship of loneliness and Facebook use among first-year college students. Journal of Educational Computing Research, 46(1), 105–117.

21. Meadows, S.O., Brown, J.S., & Elder, G.H. (2006). Depressive symptoms, stress, and support: Gendered trajectories from adolescence to young adulthood. Journal of Youth and Adolescence, 35(1), 93-103.

22. Merriam Webster, (2013) https://www.merriamwebster.com/dictionary/social%20media.

23. Nelson, L.J., Padilla-Walker, L.M., Christensen, K.J., Evans, C.A., & Carroll, J.S. (2011). Parenting in emerging adulthood: An examination of parenting clusters and correlates. Journal of Youth and Adolescence, 40(6), 730-743.

24. Pantic, I., et al. (2012). Association between online social networking and depression in high school students: Behavioral physiology viewpoint. Psychiatria Danubina, 24(1), 90–93

25. Purcell K (2012) Teens 2012: truth, trends, and myths about teen online behavior. In: ACT enrollment planner's annual conference, Chicago, July.

26. Ransford, C.P. (1982). A role for amines in the antidepressant effect of exercise: A review Medicine and Science in Sports and Exercise, 14, 1–10.

27. Richards, D. (2011). Prevalence and clinical course of depression: A review. Clinical Psychology Review, 31(7), 1117-1125.

28. Rosen, L. D., Cheever, N. A., & Carrier, L. M. (2012). iDisorder: Understanding our obsession with technology and overcoming its hold on us. New York, NY: Palgrave Macmillan.

29. Rosen, L.D., Whaling, K., Rab, S., Carrier, L.M., & Cheever, N.A. (2013). Is Facebook creating ''iDisorders''? The link between clinical symptoms of psychiatric disorders and technology use, attitudes and anxiety. Computers in Human Behavior, 29, 1243-1254.

30. Rueger, S.Y. & Malecki, C.K. (2011). Effects of stress, attributional style and perceived parental support on depressive symptoms in early adolescence: A prospective analysis. Journal of Clinical Child & Adolescent Psychology, 40(3), 347-359.

31. Ryan, T., Chester, A., Reece, J., & Xenos, S. (2014). The uses and abuses of Facebook: A review of Facebook addiction. Journal of Behavioral Addictions, 3, 133–48.

32. Sawyer, S. M., Proimos, J., & Towns, S. J. (2010). Adolescent-friendly health services: what have children's hospitals got to do with it? Journal of Pediatrics Child Health, 46: 214– 216.

33. Steinberg, L. (2001). We know some things: Parent-adolescent relationships in retrospect and prospect. Journal of Research on Adolescence, 11(1), 1-19.

34. Thirlaway, K. and Benton, D. (1992) Participation in physical activity and cardiovascular fitness have different effects on mental health and mood. Journal of Psychosomatic Research, 36(7), 657-665

35. Toombs, E. (2014). Evaluating the parent adolescent communication toolkit: usability, measure assessment and preliminary content effectiveness. Submitted in partial fulfillment of the requirements for the degree of Master of Arts at Dalhousie University Halifax, Nova Scotia

36. Verduyn, Philippe, Oscar Ybarra, Maxime Rsibois, John Jonides and Ethan Kross. 2017 "Do Social Network Sites Enhance Or Undermine Subjective Well-being? Social Issues & Policy :274-302.