

Parenting, Adolescents' Social Media Use and The Effects on Life Satisfaction

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**Abstract**

Social media has taken a more central role in adolescents' lives in the past few years. This raises the question what the effects of different types of social media use (active and passive) are on adolescents' life satisfaction and what role parents can play to prevent possible negative outcomes of social media use. This study examines whether internet specific rules and reactive restrictions can positively affect adolescents' life satisfaction by regulating their social media use. Also, it examines whether quality of parental communication serves as a protective factor in the link between adolescents' social media use and their life satisfaction. Data are retrieved from the Digital Youth Project, a longitudinal study of the Utrecht University. Online surveys are conducted on multiple high schools in the Netherlands, which resulted in a final sample of N= 1419. Results of this study show that internet specific rules and reactive restrictions do not have an effect on adolescents' social media use and do not affect adolescents' life satisfaction. Also, quality of parental communication does not serve as a protective factor for the life satisfaction of adolescents who use social media. Furthermore, interpretation of results and suggestions for future research are discussed.

*Keywords:* Adolescents; active and passive social media use; internet specific rules; reactive restrictions; quality of parental communication; life satisfaction.

### **Samenvatting**

Sociale media hebben afgelopen jaren een meer centrale rol ingenomen in het leven van adolescenten. Hierdoor ontstaat de vraag wat voor effect verschillende soorten gebruik van sociale media (actief en passief) hebben op het algemeen welbevinden van adolescenten en welke rol ouders hierin kunnen spelen om eventuele negatieve uitkomsten van sociale media te voorkomen. Deze studie onderzoekt of internet specifieke regels en reactieve restricties een positief effect kunnen hebben op het algemeen welbevinden van adolescenten, door het reguleren van het sociale media gebruik. Daarbij onderzoekt deze studie of kwaliteit van ouderlijke communicatie een beschermende rol kan spelen in het verband tussen het sociale media gebruik van adolescenten en hun algemeen welbevinden. Data zijn afkomstig van het Digital Youth Project, een longitudinale studie van de Universiteit Utrecht. Online vragenlijsten zijn afgenomen op verschillende middelbare scholen in Nederland. Dit heeft geresulteerd in een totale steekproef van N=1419. De resultaten laten zien dat internet specifieke regels en reactieve restricties geen effect hebben op het sociale media gebruik noch op het algemeen welbevinden van adolescenten. Daarbij heeft kwaliteit van ouderlijke communicatie geen beschermend effect op het algemeen welbevinden van adolescenten die sociale media gebruiken. Interpretatie van de resultaten en suggesties voor vervolgonderzoek worden besproken.

*Kernwoorden:* Adolescenten; actief en passief sociale media gebruik; internet specifieke regels; reactieve restricties; kwaliteit van ouderlijke communicaties; algemeen welbevinden.

### **Parenting, Adolescent Social Media Use and the Effects on Life Satisfaction**

Adolescents' social media use has increased in the past few years (Van der Veer, Boeke, & Peters, 2017). With the rise of smartphones and the increase of WiFi access, adolescents can engage in social media use on a 24 hour basis (Van der Veer, et al., 2017). Social media cover the use of different internet applications for example email, instant messaging (e.g. Whatsapp), and the use of social network sites (e.g. Facebook) (Zhan, Sun, Wang, & Zhang, 2016). The use of social media can be distinguished in active and passive use (Krasnova, Wenninger, Widjaja, & Buxmann, 2013). Active use refers to engaging in activities that facilitate direct exchange with other people online. Passive use refers to monitoring other people's lives and does not facilitate direct exchange with other people (Verduyn, Ybarra, Résibois, Jonides, & Kross, 2017).

With the fact that social media have taken a more central role in adolescents' lives in the past few years, the question arises what the effects of social media use are on adolescents' life satisfaction. Studies have shown contradictory results when it comes to the effect social media use has on adolescents' life satisfaction (Krasnova et al., 2013; Kross et al., 2013; Utz & Breuer, 2017; Valenzuela, Park & Kee, 2009; Verduyn et al., 2017). This study examines how different types of social media use (active and passive) affect adolescents' life satisfaction. Besides, studies have shown that parents have an important influence when it comes to adolescents' life satisfaction (Boniel-Nissim et al., 2015). The question arises what role parents have in optimizing their adolescents' life satisfaction by regulating their children's social media use. Parental mediation theory shows (Clark, 2011) that parents can use different strategies to suppress or enhance the social media use of their adolescent children and in this way optimize their life satisfaction. Two important strategies are restrictive mediation and active mediation (Jiow, Lim, & Lin, 2016). Restrictive mediation refers to parents setting rules and putting limits to adolescents' social media use and to specific content of social media (Valkenburg, Piotrowski, Hermanns, & Leeuw, 2013). This study examines whether restrictive parental mediation can affect adolescents' life satisfaction by regulating adolescents' active and passive social media use. The second strategy parents can use is active mediation. This refers to parent-child communication about media use, content and using media together, so called 'co-use' (Jiow et al., 2016). In this study active parental mediation is further referred to as **quality of parental communication**. This study examines whether quality of parental communication can serve as a protective factor in the link between adolescents' active and passive social media use and life satisfaction.

### **Social Media Use and Life Satisfaction**

Social media can have positive and negative effects on life satisfaction (Krasnova et al., 2013; Valenzuela et al., 2009; Zhan et al., 2016). In general, people have the urge to create and maintain relationships with other people (Verduyn et al., 2017). When using social media, people interact with others which contributes to the building and maintenance of their relations with others. Furthermore, when people get a feeling of connectedness to others and gain support from their network, it has a positive effect on their life satisfaction (Valenzuela et al., 2009; Utz & Breuer, 2017). On the other hand, social media use can also have negative effects on life satisfaction because people tend to compare themselves with others they meet on social network sites, and can feel envious of other people's lives (Krasnova et al., 2013; Verduyn et al., 2017). Social media are particularly likely to exacerbate feelings of envy because most social media users only share positive things about themselves online. This can trigger the idea that others have a better and nicer life, which in turn can have a negative effect on people's life satisfaction (Krasnova et al., 2013).

Empirical findings regarding the relationship between social media use and life satisfaction are somewhat contradictory. Several cross-sectional studies showed that Facebook use (Valenzuela et al., 2009) and social media use (Zhan et al., 2016) were positively associated with life satisfaction. Yet, in their experimental study, Kross et al. (2013) found that people who used Facebook felt worse later that day, and it predicted a decrease in life satisfaction over a longer period of time. However, in the opposite direction, the longitudinal study of Utz and Breuer (2017) found that users of social network sites had higher levels of life satisfaction than non-users of social network sites.

Furthermore, empirical research found different results for the association between active social media use and life satisfaction compared to the association between passive social media use and life satisfaction. In their review study, Verduyn et al. (2017) concluded that active social media use affected life satisfaction in a positive way (Verduyn et al., 2015) and passive social media use affected life satisfaction in a negative way (Krasnova et al., 2013; Verduyn et al., 2015). In line with the review study by Verduyn et al. (2017), it can be assumed that using social media in an active way leads to more life satisfaction because it leads to more social support and a feeling of social connectedness to others. Therefore, it is hypothesized that active social media use will have a positive effect on life satisfaction (hypothesis 1). It is also hypothesized that passive social media use will have a negative effect on life satisfaction, for instance because social media are likely to exacerbate feelings of envy since most social media users share mainly positive things about themselves

(hypothesis 2).

### **Restrictive Parental Mediation and Social Media Use**

According to the parental mediation theory, parents can use different interpersonal communication strategies to regulate the media use of their adolescent children and with this they mediate the negative effects media can have on adolescents' lives (Clark, 2011; Krcmar & Cingel, 2016; Lee & Chae, 2012; Len-Ríos, Hughes, McKee, & Young, 2016). Initially the parental mediation theory was used to examine how parents regulate the television use of their children but nowadays the theory is used to study other types of media use as well (Valkenburg et al., 2013). The theory posits out that one of the strategies that parents can use to regulate their children's media use, is by making rules and putting limits to adolescents' media use, so called restrictive parental mediation (Clark, 2011).

Prior research found inconsistent results for the effect of restrictive mediation on social media use. In line with the meta-analysis of Collier et al. (2016), several cross-sectional studies found that restrictive mediation is associated with less time spent watching TV (Bjelland et al., 2015; Ramirez et al., 2011), less time spent online (Lee & Chae, 2012; Lee, 2013) and less exposure to online risks (Lee, 2013). Parental rules about content of internet use may help to prevent compulsive internet use, but strict rules about time may promote compulsive internet behaviours (Van den Eijnden, Spijkerman, Vermulst, Van Rooij, & Engels, 2010). In line with the latter result, always setting rules (Kesten et al., 2015), and setting rules without communicating them (Bjelland et al., 2015) were both associated with an increased likelihood of watching tv, computer and game console use and social media use. However, other cross-sectional studies found no associations between restrictive parental mediation and social media use (Lee & Chae, 2007; Len-Rios, Hughes, McKee, & Young, 2016).

Van den Eijnden et al. (2010) made a distinction between two types of restrictive mediation: reactive restrictions and internet specific rules. Reactive restrictions are immediate limiting responses of parents to their children's social media use, and internet specific rules are clearly communicated rules with regards to the degree of allowance of access to online devices. It was found that reactive restrictions of parents regarding excessive internet use were related to less compulsive internet use (Van den Eijnden et al., 2010). Contrary to this result, in their longitudinal study, Koning, Peeters, Finkenauer & Van den Eijnden (2018) found no effect of reactive restrictions on social media disorder symptoms, while internet specific rules did lead to less social media disorder symptoms among girls. This suggests that it may be more effective to set clear rules about social media use than to use reactive

restrictions.

Although previous results are inconsistent, most studies found a negative relationship between clear rules setting and social media use. Thus, in accordance with the parental mediation theory and these negative associations that were previously found, it is expected that internet specific rules will lead to less social media use. Also, although research on reactive restrictions and social media use is limited and results are inconsistent, the study of Van den Eijnden et al. (2010) suggests a somewhat more negative effect of reactive restrictions on adolescents' social media use. In line with the study of Van den Eijnden (2010), it is expected that reactive restrictions will have a negative effect on social media use. In line with the findings of Verduyn et al (2017), this study will make a distinction between active and passive social media use. Internet specific rules are expected to lead to less social media use for both active use and passive use (hypotheses 3 & 4). Also, it is expected that reactive restrictions will lead to less active and passive social media use (hypotheses 5 & 6).

### **The Moderating Role of Parental Communication**

Besides restrictive mediation strategy (reactive restrictions and internet specific rules), parents can use parent-child communication as a strategy to mediate the social media use of their adolescent children and in this way protect their adolescent children's life satisfaction (Clark, 2011; Krcmar & Cingel, 2016; Lee & Chae, 2012). Quality of parental communication serves as a protective factor for wellbeing and health in adolescence (Boniel-Nissim et al., 2015). For example it is effective in reducing substance use and sexual risk behaviour (Kuntsche & Kuntsche, 2016; Widman, Choukas-Bradley, Noar, Nesi, & Garrett, 2016). Additionally, better quality of parental communication was found to be associated to adolescents' online privacy concerns (Krcmar & Cingel, 2016), and a more sceptical view towards content of media (Clark, 2011; Livingstone & Helsper, 2008).

Also, the study of Boniel-Nissim et al. (2015) found that supportive communication between parents and adolescents moderated the relationship between electronic media use and life satisfaction. This suggests that parent-adolescent communication serves as a protective factor in the link between electronic media use and life satisfaction. Based on the results of this study (Boniel-Nissim et al., 2015), it can be expected that adolescents who actively use social media and communicate with their parents about their online activities will engage less in risky activities online. This may result in more life satisfaction in comparison to adolescents who do not communicate about online risks with their parents. In this line of reasoning, it is expected that quality of parental communication will have a protective effect in the link between active social media use and life satisfaction (hypothesis 7). Also it can be

assumed that adolescents who passively use social media and communicate with their parents about it, will be more sceptical about what they see on social media and will be less influenced by this content. Therefore, it is likely that quality of parental communication will be a protective factor in the link between passive social media use and life satisfaction (hypothesis 8).

### **Current Study**

The goal of this longitudinal study is fourfold. Firstly, this study examines the predicting effect of adolescents' active and passive social media use on life satisfaction (hypotheses 1 & 2). Secondly, this study examines the predicting effect of internet specific rules and reactive restrictions on adolescents' active and passive social media use (hypotheses 3, 4, 5, 6). Based on the foregoing it is thus expected that internet specific rules and reactive restrictions can affect adolescents' life satisfaction in a positive way by regulating adolescents' active and passive social media use (hypotheses 9, 10, 11, 12). Thirdly, this study examines whether the predicting effect of active and passive social media use on life satisfaction is moderated by quality of parental communication (hypotheses 7 & 8). Lastly, this study examines whether internet specific rules and reactive restrictions will have a positive effect on adolescents' life satisfaction that is mediated by active and passive social media use (hypotheses 9, 10, 11, 12).

This study is innovative for several reasons. As far as is known, it is the first longitudinal study that examines the effect of different restrictive parental mediation strategies (internet specific rules and reactive restrictions) on active and passive social media use. In addition, prior studies suggest the important role of parenting on adolescents social media use and life satisfaction, however not much is known about the link between internet specific rules and reactive restrictions, life satisfaction and the mediating role of active and passive social media use. Aside from this, there are hardly any data that have examined the moderating effect of quality of parental communication on the link between social media use and life satisfaction. Finally as far as is known, no distinction between active and passive social media use has been made before in parenting research regarding social media use. The research model (figure 1) is studied by using data from the Digital Youth Project.



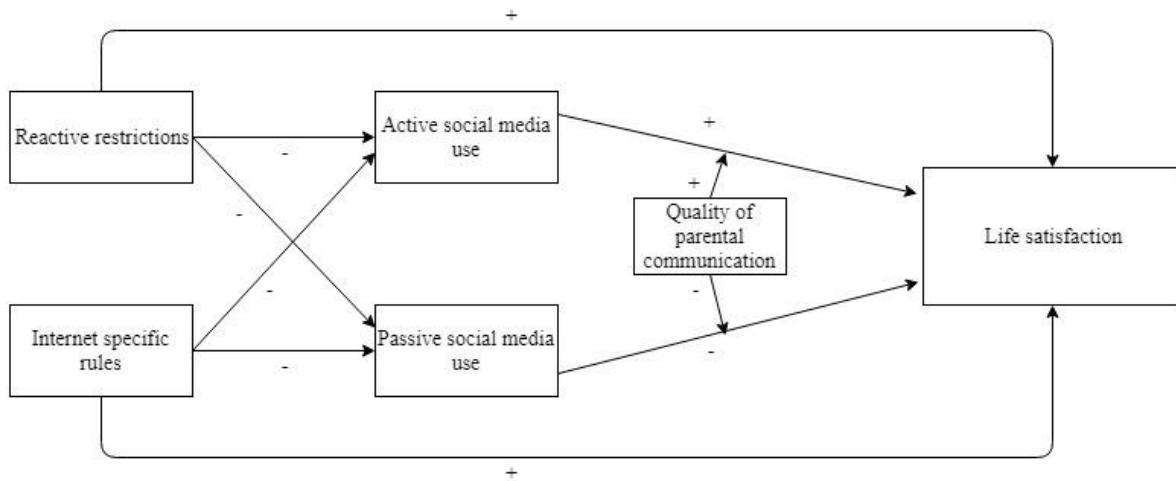


Figure 1. Research model of parenting, adolescents' social media use and the effects on life satisfaction.

## Method

### Procedure and Participants

For this study, data are derived from the Digital Youth Project, a longitudinal study of the Utrecht University. Online surveys were conducted on multiple high schools in the Netherlands. Adolescents in the first and second year of secondary education were asked to fill out a digital questionnaire. Surveys were annually assessed in February to March 2015 (T1), 2016 (T2), and 2017 (T3). Completing the questionnaires took roughly 35-45 minutes and was guided by research assistants of Utrecht University. Parents had to give permission for their child to participate. The study procedures were carried out in accordance with the Declaration of Helsinki, and were approved by the board of ethics of the Faculty of Social Sciences at Utrecht University (FETC16-076 Eijnden).

The current study uses data from the second and third measurements (T2 & T3). The T2 sample consisted of 1927 respondents. Age ranged from 10 to 16 years ( $M = 13.31$ ,  $SD = .91$ ). The T3 sample consisted of 2707 respondents. Age ranged from 11 to 17 years old ( $M = 13.94$ ,  $SD = 1.2$ ). The final sample included all respondents that participated in the study in 2016 (T2) and 2017 (T3), a total of 1419 respondents, with a response rate of 74%. Non-response was mainly due to dropout of complete classes for example because there was no time to fill out the online survey. Also, respondents dropped out because they had left school or because they were absent during the day the survey was conducted. An attrition analysis was performed to see how the final sample differed from the dropout group. There was a significant difference for passive social media use:  $t(1924) = -2.001$ ,  $p < .05$ ,  $d = 0.11$ , 95%

CI [.00, .35]. The final sample ( $M = 3.98$ ,  $SD = 1.67$ ) scored slightly lower on passive social media use in comparison to the dropout group ( $M = 4.16$ ,  $SD = 1.70$ ). This indicates that the final sample uses social media less in a passive way than the dropout group. Besides, there was a significant difference for education:  $t(1925) = -8.28$ ,  $p < .001$ ,  $d = 0.44$ , 95% CI [-.42, -.27]. The final sample had a slightly higher education level ( $M = 1.82$ ,  $SD = 0.82$ ) than the dropout group ( $M = 1.47$ ,  $SD = 0.73$ ). Also the final sample included slightly more boys ( $X^2 = (1) 637,16$ ,  $p < .001$ ) compared to the dropout group. In the final sample, most respondents had a Dutch ethnic background (76.5%), and 44.8% had a low education level, 28.8% a middle education level and 26.4% had a high education.

### Measures

**Life satisfaction.** Life satisfaction was measured using seven items (Appendix A) from the life satisfaction scale (Diener et al., 1985). Respondents could answer the questions on a 6 point scale, ranging from 1 (*totally disagree*) to 6 (*totally agree*). Two items needed recoding so a high score indicated more life satisfaction for all items.

**Passive social media use.** Passive social media use was measured by one item, "How many times a day do you look on social network sites?" Respondents had seven answer options, ranging from 1 (*never or less than once a week*) to 7 (*more than 40 times*). A higher score on the items indicated more passive social media use.

**Active social media use.** Active social media use was measured using three items: "How many times a week do you: (a) post a message, picture or video on social network sites, (b) like a message, picture or video on social network sites, (c) share or react on a message, picture or video on social network sites?" Respondents had seven answer options, ranging from 1 (*never or less than once a week*) to 7 (*more than 40 times*). A higher score on the items indicated more active social media use.

**Internet specific rules.** Internet specific rules was measured using five items, for example: "To what extent do your parents/ guardians allow you to use the internet or to game as long as you want on schooldays?" Respondents could answer the question on a 5 point scale ranging from 1 (*never*) to 5 (*very often*). All items needed recoding so a high score indicated more internet specific rules.

**Reactive restrictions.** Reactive restrictions was measured using five items, for example: "How many times do you parents/ guardians say that you should turn off your computer/ tablet or smartphone?" Respondents could answer the question on a 5 point scale ranging from 1 (*almost never*) to 5 (*more than five times a day*). All items needed recoding so a high score indicated more reactive restrictions from parents.

**Quality of parental communication.** Quality of parental communication consisted of three items: “If I talk to my parents about my internet use or gaming behaviour I feel; (a) comfortable, (b) understood, and (c) taken seriously.” The answers ranged from 1 (*not true at all*) to 5 (*completely true*). A higher score indicated better quality of parental communication.

### **Statistical Analyses**

Data are analysed by using the program IBM SPSS Statistics 24. All variables had less than 10% missing values, therefore pairwise deletion was used in the analyses. Some outliers were detected but after checking the answers it was decided that there was no good reason to remove them from the analyses. For concepts that were measured with multiple items, principal components analyses were performed before scales were created and the internal consistency was checked (Appendix B).

**Correlations.** Correlations were computed between research variables and demographic variables. Spearman correlation was calculated for gender, education, and ethnicity. Pearson correlation was used for all the correlations that did not include the categorical variables. Correlations were performed to check whether research variables were significantly correlated to each other and to check which demographic variables should be included in the analyses. In all analyses, demographic variables that significantly correlated with the dependent variable were included.

**Regression.** Linear regression analyses were performed to test the hypotheses. To test whether reactive restrictions and internet specific rules have an effect on life satisfaction and whether this effect is mediated by active and passive social media use, the Baron and Kenny method (1986) was used. This method consists of four steps that need to be completed (Field, 2013). First, a significant association should be found between the independent variable (reactive restrictions T2 & internet specific rules T2) and the dependent variable (life satisfaction T3). Second, a significant association should be found between the independent variable (reactive restrictions T2 & internet specific rules T2) and the mediating variable (active social media use T2 & passive social media use T2). Third, a significant association should exist between the mediating variable and the dependent variable, even after controlling for the independent variable. Fourth, the direct effect between the independent and dependent variable should significantly decrease when the entire model is tested. In addition, to test whether quality of parental communication has a moderating effect on the link between active and passive social media use and life satisfaction, two interaction variables were created for active social media use and quality of parental communication and

passive social media use and quality of parental communication. To make the interaction variables, the variables for passive social media use, active social media use and quality of parental communication were centred. Also, in all regression analyses an earlier measurement point of the dependent variable was included, to test what the actual effect of the independent variable was.

## Results

### Descriptive Statistics

Table 1 shows the descriptive statistics for the research variables. For both measurements it is shown that adolescents are relatively satisfied with their lives. Active social media use is almost the same at both measurements, while passive social media use has slightly increased at T3.

Table 1

*Descriptive Statistics of the Research Variables*

	T2					T3				
	<i>N</i>	<i>Mean</i>	<i>SD</i>	Min	Max	<i>N</i>	<i>Mean</i>	<i>SD</i>	Min	Max
Life satisfaction	1400	4.79	0.84	1	6	1399	4.61	0.87	1	6
Active social media use	1419	3.45	1.49	1	7	1418	3.53	3.53	1	7
Passive social media use	1419	3.98	1.67	1	7	1418	4.37	1.65	1	7
Reactive restrictions	1367	1.68	0.73	1	5	1360	1.62	0.75	1	5
Internet specific rules	1340	3.25	1.04	1	5	1360	2.99	1.09	1	5
Parental communication	1343	3.17	1.15	1	5	1350	3.44	1.13	1	5

### **Gender differences for active and passive social media use and life satisfaction.**

Table 2 shows the results for the independent sample t-test for active social media use, passive social media use and life satisfaction for boys and girls. It shows a significant difference between boys and girls for active social media use and passive social media use. For both active and passive social media use, girls have a higher score, meaning girls use social media more in an active and passive way than boys. Table 2 also shows a significant difference between boys and girls for life satisfaction, indicating that boys score slightly higher on life satisfaction than girls.

Table 2

*Gender differences for active and passive social media use and life satisfaction*

	Boys	Girls	<i>t</i>	<i>df</i>
Active social media use T2	3.18 (0.08)	3.79 (0.08)	7.85**	1417
Passive social media use T2	3.84 (1.70)	4.16 (1.62)	3.61**	1417
Life satisfaction T2	4.85 (0.80)	4.72 (0.87)	-.3.10**	1398
Life satisfaction T3	4.66 (0.87)	4.53 (0.87)	-2.82**	1397

Note. \* =  $p < .05$ , \*\* =  $p < .01$ .

Standard Deviations appear in parentheses below means.

### Correlations

Table 3 shows the correlation between the research and demographic variables. It is shown that life satisfaction (T3) is significantly correlated with, passive social media use (T2), reactive restrictions (T2), and quality of parental communication (T2). There is a negative association of active social media use (T2) and life satisfaction (T3). Overall the correlations between the variables are not very strong. There appears to be a positive significant correlation between internet specific rules (T2) and life satisfaction (T3). There is a positive significant correlation between quality of parental communication (T2) and life satisfaction (T3). There is a negative significant correlation between internet specific rules and both active (T3) and passive (T3) social media use. For reactive restrictions (T2) there is a negative significant correlation with passive social media use (T3). The correlation between reactive restrictions (T2) and active social media use (T3) is not significant and therefore hypothesis 5 cannot be confirmed. Gender (T2) is significantly correlated with life satisfaction (T2 & T3), active social media use (T2 & T3), reactive restrictions (T2 & T3), and quality of parental communication (T2 & T3). Also, there is a negative significant correlation between age (T2) and life satisfaction (T2). Gender and age are significantly correlated to several research variables and therefore are included in the regression analyses as control variables.

Table 3

*Correlation matrix*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Gender T2	-																				
2. Age T2	.09**	-																			
3. Age T3	.09**	.94**	-																		
4. Middle education T2	.00	-.17**	-.14**	-																	
5. High education T2	-.09**	.00	-.01	-.38**	-																
6. Middle education T2	-.07*	-.27**	-.26**	.39**	-.15**	-															
7. High education T3	-.07**	-.02	-.01	.05	.73**	-.23**	-														
8. Ethnicity T2	-.05*	.05*	.07*	-.01	-.09**	.00	-.08**	-													
9. Ethnicity T3	-.06*	0.1	.06*	-.01	-.08**	.00	-.08**	.99**	-												
10. Life satisfaction T2	.09**	-.13**	-.12**	-.02	-.02	.03	-.03	.03	.03	-											
11. Life satisfaction T3	.09**	-.05	-.03	-.02	-.02	-.01	-.02	.03	.03	.52**	-										
12. Active social media use T2	-.21**	.04	.03	-.04	-.13**	-.01	-.15**	.03	.02	-.08**	-.07**	-									
13. Active social media use T3	-.20**	-.03	-.05	.01	-.10**	.06*	-.12**	-.03	-.03	-.07**	-.05*	.55**	-								
14. Passive social media use T2	-.09**	.12**	.11**	-.03	-.12**	-.02	-.14**	.03	.02	-.09**	-.06*	.69**	.46**	-							
15. Passive social media use T3	-.09**	.03	.02	.02	-.12**	.04	-.12**	-.01	-.01	-.08**	-.07*	.47**	.68**	.52**	-						
16. Reactive restrictions T2	.11**	-.11**	-.10**	.11**	-.02	.05	.05	.00	.00	-.11**	-.07*	-.04	-.02	-.06*	-.06*	-					
17. Reactive restrictions T3	.06*	-.18**	-.17**	.11**	-.04	.10**	.02	.02	.03	-.08**	-.18**	-.04	.02	-.08**	-.02	.42**	-				
18. Internet specific rules T2	-.03	-.20**	-.20**	.10**	.06*	.11**	.11**	-.03	-.03	.09**	.03	-.23**	-.10**	-.28**	-.18**	.23**	.23**	-			
19. Internet specific rules T3	.04	-.15**	-.16**	.09**	.01	.10**	.04	.04	.04	.12**	-.02	-.14**	-.14**	-.20**	-.19**	.22**	.20**	.55**	-		
20. Quality of communication T2	-.14**	.00	-.01	-.02	.09**	.03	.06*	-.04	-.04	.21**	.17**	-.04	.00	-.08**	-.07*	-.03	-.03	.01	.04	-	
21. Quality of communication T3	-.11**	.06*	.05	-.02	.06*	.00	.04	.02	.02	.11**	.24**	-.01	-.01	-.03	-.03	-.12**	-.11**	-.04	-.18**	.32**	-

Note \* =  $p < .05$ , \*\* =  $p < .01$  (two tailed).

Spearman Rho was used for correlation in which one variable was measured on a nominal or ordinal level, the other correlations are measured using Pearson.

Education is divided into low, middle and high. Gender (girl=0, boy=1) and ethnicity (non- Dutch=0, Dutch=1) are dichotomized.

Reference category migration background: "no migration background".

Reference category education level: "low education level".

**Regression**

**The predictive role of active and passive social media use on life satisfaction.**

Table 4 shows the results for the effect of active and passive social media use on life satisfaction. The results show that the effect of active social media use on life satisfaction is not significant. This indicates that active social media use does not result in more life satisfaction overtime and therefore hypothesis 1 is not confirmed. Table 4 also shows that passive social media use does not result in decreased life satisfaction overtime, thus hypothesis 2 cannot be confirmed.

Table 4

*The Predictive Role of Active and Passive Social Media Use (T2) on Life Satisfaction (T3) (N=1380)*

	Life satisfaction T3			R <sup>2</sup>
	B	Beta	SE	
Step 1				.01
Gender T2	0.14***	0.08**	0.05	
Age T2	-0.05	-0.5	0.03	
Step 2				.27
Life satisfaction T2	0.54***	0.51***	0.02	
Step 3				.27
Active social media use T2	-0.01	-0.02	0.01	
Step 1				.01
Gender T2	0.14***	0.08***	0.05	
Age T2	-0.05	-0.05	0.03	
Step 2				.27
Life satisfaction T2	0.54***	0.51***	0.02	
Step 3				.27
Passive social media use T2	-0.01	-0.02	0.01	

Note. \*p < .05. \*\*p<.01. \*\*\*p < .001 (one-tailed).

Reference category for gender is boys.

Regression coefficients of constant are unstandardized.

**The predictive role of internet specific rules on active and passive social media use.** Table 5 shows the results for the predictive role of internet specific rules on active and

passive social media use. The results show that there is no negative significant effect of internet specific rules on active and passive social media use. This indicates that internet specific rules do not predict active and passive social media use one year later. Therefore hypothesis 3 and 4 cannot be confirmed.

Table 5

*The Predictive Role of Internet Specific Rules (T2) on Active and Passive Social Media Use (T3) (N= 1338)*

Active social media use T3				
	<i>B</i>	<i>Beta</i>	<i>SE</i>	<i>R</i> <sup>2</sup>
Step 1				.04
Gender T2	-0.53***	-0.20***	0.08	
Age T2	-0.03	-0.02	0.04	
Step 2				.32
Active social media use T2	0.51***	0.54***	0.02	
Step 3				.32
Internet specific rules T2	0.01	0.01	0.03	
Passive social media use T3				
Step 1				.01
Gender T2	-0.34***	-0.10***	0.09	
Age T2	0.06	0.03	0.05	
Step 2				.28
Passive social media use T2	0.52***	0.52***	0.02	
Step 3				.28
Internet specific rules T2	-0.07	-0.05	0.04	

Note. \*p < .05. \*\*p<.01. \*\*\*p < .001 (one-tailed).

Reference category for gender is boys.

Regression coefficients of constant are unstandardized.

**The predictive role of reactive restrictions on passive social media use.** Table 6 shows the results for the predicting role of reactive restrictions on passive social media use. The results show that reactive restrictions do not predict passive social media use one year later, therefore hypothesis 6 cannot be confirmed.



Table 6

*The Predictive Role of Reactive Restrictions (T2) on Passive Social Media Use (T3)*  
(N=1365)

	Passive Social Media Use T3			<i>R</i> <sup>2</sup>
	<i>B</i>	<i>Beta</i>	<i>SE</i>	
Step 1				.01
Gender T2	-0.34***	-.10***	0.09	
Age T2	0.06	.03	0.05	
Step 2				.28
Passive Social media use T2	0.52***	0.52***	0.02	
Step 3				.28
Reactive Restrictions T2	-0.06	-0.03	0.05	

Note. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001 (one-tailed).

Reference category for gender is boys.

Regression coefficients of constant are unstandardized.

**The moderating effect of quality of parental communication.** Table 7 shows the results for the moderating effect of quality of parental communication on the link between active social media use and life satisfaction. The results show that the moderating effect of quality of parental communication is not significant on the link between active social media use and life satisfaction. Therefore, hypothesis 11 cannot be confirmed. Table 7 also shows the results for the moderating effect of quality of parental communication on the link between passive social media use and life satisfaction. The results show that this moderating effect is not significant and therefore hypothesis 12 cannot be confirmed. However, the results show that quality of parental communication has a positive significant effect on life satisfaction. This indicates that quality of parental communication predicts more life satisfaction one year later.

Table 7

*The Moderating Role of Quality of Communication (T2) between Active and Passive Social Media Use (T2) and Life Satisfaction (T3) (N=1325)*

Active social media use (T2) and Life satisfaction (T3)				
Model	<i>B</i>	<i>Beta</i>	<i>SE</i>	<i>R2</i>
Step 1				.01
Gender T2 (ref: boys)	0.14***	0.08**	0.05	
Age T2	-0.05*	-0.5*	0.03	
Step 2				.27
Life satisfaction T2	0.54***	0.51***	0.03	
Step 3				.27
Active social media use T2	-0.01	-0.02	0.01	
Quality of communication T2	0.05**	0.07**	0.02	
Step 4				.27
ASM*QPC T2	-0.01	-.03	0.01	
Passive social media use (T2) and life satisfaction (T3)				
Step 1				.01
Gender T2	0.14***	0.08***	0.05	
Age T2	-0.05*	-0.05*	0.03	
Step 2				.27
Life satisfaction T2	0.54***	0.51***	0.03	
Step 3				.27
Passive Social media use	-0.01	-0.01	0.01	
Quality of communication	0.05**	0.07**	0.02	
Step 4				.27
PSM*QPC T2	-0.00	-0.01	0.01	

Note. \*p < .05. \*\*p<.01. \*\*\*p < .001 (one-tailed).

Reference category for gender is boys.

Regression coefficients of constant are unstandardized.

ASM\*QPC is the moderation effect of active social media use and quality of parental communication.

PSM\*QPC is the moderation effect of passive social media use and quality of parental communication.

**The predictive role of internet specific rules and reactive restrictions on life satisfaction.** To test whether active and passive social media use mediate the link between internet specific rules and life satisfaction, and between reactive restrictions and life satisfaction, it is first tested whether there is a significant effect of internet specific rules and reactive restrictions on life satisfaction. Table 8 shows that internet specific rules do not significantly affect life satisfaction. Also, there is no significant effect of reactive restrictions on life satisfaction. For both internet specific rules and reactive restrictions, the mediation effect cannot be tested and therefore hypotheses 9, 10, 11 and 12 cannot be confirmed.

Table 8

*The Predictive Role of Reactive Restrictions (T2) and Internet Specific Rules (T2) on Life Satisfaction (T3) (N=1347)*

	Life satisfaction T3			
	<i>B</i>	<i>Beta</i>	<i>SE</i>	<i>R2</i>
Step 1				.01
Gender T2	0.14***	0.08**	0.05	
Age T2	-0.05	-0.5	0.03	
Step 2				.27
Life satisfaction T2	0.54***	0.51***	0.03	
Step 3				.27
Reactive restrictions T2	-0.02	-0.02	0.03	
<hr/>				
Step 1				.01
Gender T2	0.14***	0.08***	0.05	
Age T2	-0.05	-0.05	0.03	
Step 2				.27
Life satisfaction T2	0.54***	0.51***	0.03	
Step 3				.27
Internet specific rules T2	-0.01	-0.01	0.02	

Note. \*p < .05. \*\*p < .01. \*\*\*p < .001 (one-tailed).

Reference category for gender is boys.

Regression coefficients of constant are unstandardized.

### Discussion

This study demonstrated that internet specific rules and reactive restrictions do not protect adolescents' life satisfaction by regulating adolescents' active and passive social

media use. Also, social media use does not predict adolescents' life satisfaction one year later. Furthermore, from this study it can be concluded that quality of parental communication does not suppress or enhance the effect active and passive social media have on adolescents' life satisfaction.

### **The Effect of Active and Passive Social Media Use on Life Satisfaction**

It was expected that active social media use would have a positive effect on life satisfaction. Contrary to prior studies (Verduyn et al., 2015; Verduyn et al., 2017), in this study active social media use was negatively associated with life satisfaction but it did not predict life satisfaction one year later. Studies that found a positive effect of active social media use and life satisfaction (Verduyn et al., 2015; Verduyn et al., 2017) used a sample that consisted of respondents from late adolescence and adulthood (18 to 30 years), while the sample of the current study consisted of adolescents in the age category 11 to 17 years. Adolescents use certain types of social media more often than adults, for instance: Snapchat, Instagram and YouTube (Van der Veer et al., 2017). It might be that the intensity of use of these social media types affect life satisfaction in a different way. Also it is possible that one is more vulnerable for the negative effects of social media use during an earlier phases of adolescence than in another life phase. Another possible explanation for the unexpected negative association between active social media use and life satisfaction might be that adolescents who use social media in an active way experience more negative life outcomes from social media use for example less sleep quality (Woods & Scott, 2016), and less physical exercise (Iannotti, Kogan, Janssen & Boyce, 2009), which is linked to decreased life satisfaction.

For passive social media use it was expected that it would have a negative effect on life satisfaction. From the results of this study it appeared that passive social media use was negatively associated with life satisfaction, but it was not a predictor for life satisfaction one year later. Prior longitudinal research that found a negative effect of passive social media use on life satisfaction (Verduyn et al., 2015), used a sample that only concerned females, with a mean age of 20. This might explain the differences in effects that were found. However, based on the results of these few studies it is too early to draw conclusion. Therefore future research is needed.

To make a distinction between active and passive social media use, prior studies only used Facebook use to make a distinction between active (Verduyn et al., 2015) and passive (Krasnova et al., 2013; Verduyn et al., 2015) social media use. In the current study, active and passive social media use were measured by asking questions about social media use in

general, and not on specific types of social media. Using different measurements might explain differences in results. It is recommended that future research makes a clear distinction between active and passive social media use, but also takes into account different types of social media use and the intensity of use. Besides, it is recommended to include different age groups to see how this is affecting the outcome of the results.

### **The Effect of Internet Specific Rules and Reactive Restrictions on Active and Passive Social Media Use**

It was expected that both internet specific rules and reactive restrictions would have a negative effect on active and passive social media use. It was shown that internet specific rules were, as expected, negatively associated with passive social media use. Contrary to what was expected, there was a positive association between internet specific rules and active social media use. However, internet specific rules did not predict active or passive social media use one year later. Besides, reactive restrictions were not significantly correlated with active social media use. Also reactive restrictions did not predict a decline in passive social media use one year later.

Prior studies have shown some inconsistent results with regards to the effect of internet specific rules and reactive restrictions on adolescents' social media use. Koning et al. (2018) did not find associations between reactive restrictions and social media disorder symptoms. In line with this, the current study did not find associations between reactive restrictions and social media use. However, Koning et al. (2018) found an effect of internet specific rules on social media disorder symptoms among girls only, whereas this study did not find this effect on social media use. It might be possible that internet specific rules can protect adolescent girls in developing social media disorder symptoms, but do not affect social media use in general. Also, it might be possible that internet specific rules do not predict adolescents' active and passive social media use but that the intensity of active and passive social media use do affect the amount of internet specific rules parents make to regulate the social media use of their adolescent children.

### **The Moderating Effect of Parental Communication in the Link Between Active and Passive Social Media Use and Life Satisfaction**

It was expected that quality of parental communication served as a moderating effect in the relation between active and passive social media use and life satisfaction. From this study no moderating effect of quality of parental communication was found one year later. The means that quality of parental communication cannot enhance or suppress the effect active and passive social media use have on adolescents' life satisfaction. However, the

results show that quality of parental communication does predict adolescents' life satisfaction one year later (Table 8).

### **The Mediating Effect of Active and Passive Social Media Use in the Link between Reactive Restrictions and Life Satisfaction**

It was expected that both internet specific rules and reactive restrictions would affect adolescents' life satisfaction by regulating the active and passive social media use of their adolescent children. In contrast to the expectation, the results of this study show that internet specific rules and reactive restrictions were negatively associated with life satisfaction and did not predict life satisfaction one year later. From the results of this study it cannot be concluded that internet specific rules and reactive restrictions affect adolescents' life satisfaction by regulating adolescents' social media use. The results of this study indicate that there are components of parenting, other than setting rules, that might be of importance when predicting adolescents' life satisfaction.

### **Strengths and Limitations**

This study has several strengths. It used a longitudinal design which gives the opportunity to study the order of events over time. Also, this study used a relatively large sample (1419 respondents), that included adolescents with multiple school levels in the Netherlands, which is in favour of the generalizability of the results. Besides, this study has made a valuable contribution by making a distinction between active and passive social media use, since few studies have done this before. Finally, the used scales for the concepts of life satisfaction, reactive restrictions, internet specific rules and quality of parental communication are measured using multiple items that all had good internal consistency.

Beside the strengths of the study, some limitations should be taken into account. First, data were assessed by using self-reported surveys, thus answers could be socially desirable. Second, passive social media use was measured using only one question and active social media use was measured using three questions but did not have a good internal consistency. In future studies the question whether adolescents are capable of exactly telling how often they use social media should be taken into account. It is recommended for future research to use objective data for example by using an app that actively measures the time spent on social media. Lastly, to measure reactive restrictions and internet specific rules, questions were used that focused on internet use in general and did not specifically focus on rules regarding social media use. For future research it is recommended to focus more specifically on rules regarding social media use.

**Conclusion and Perspectives**

This study demonstrates that internet specific rules and reactive restrictions do not protect adolescents' life satisfaction by regulating adolescents' active and passive social media use. Besides, from the results of this study it can be concluded that quality of parental communication does not suppress or enhance the effect active and passive social media have on adolescents' life satisfaction. Although no effects of internet specific rules and reactive restrictions are found, this study shows that quality of parental communication might be of importance in predicting adolescents' life satisfaction one year later. It is important to further examine whether the effect of quality of parental communication on adolescents' life satisfaction is only protective when it comes to adolescents' social media use or that quality of parental communication is an advantage for adolescents' lives in general.

Prior research found an effect of active and passive social media use on life satisfaction (Krasnova et al., 2013; Verduyn et al., 2015; Verduyn et al., 2017), in line with this, it may be that there is a subgroup of social media users that experiences positive or negative effects of active and passive social media use on their life satisfaction. One may speculate that the life satisfaction that this group experiences is not only related to their interaction on social media but also in interaction with other aspects of life. It might be possible that for some adolescents who already experience many positive life outcomes, social media use enhances these positive effects and increases life satisfaction. While for adolescents who are already more vulnerable for negative life outcomes, social media enhances these negative effects which decreases their life satisfaction. Future research may elucidate the factors or characteristics that explain their life satisfaction.

### References

- Bjelland, M., Soenens, B., Bere, E., Kovács, É., Lien, N., Maes, L., & Te Velde, S. J. (2015). Associations between parental rules, style of communication and children's screen time. *BMC Public Health, 15*(1), 1002. doi: 10.1186/s12889-015-2337-6
- Boniell-Nissim, M., Tabak, I., Mazur, J., Borraccino, A., Brooks, F., Gommans, R., & Finne, E. (2015). Supportive communication with parents moderates the negative effects of electronic media use on life satisfaction during adolescence. *International Journal of Public Health, 60*(2), 189-198. doi: 10.1007/s00038-014-0636-9
- Collier, K. M., Coyne, S. M., Rasmussen, E. E., Hawkins, A. J., Padilla-Walker, L. M., Erickson, S. E., & Memmott-Elison, M. K. (2016). Does parental mediation of media influence child outcomes? A meta-analysis on media time, aggression, substance use, and sexual behavior. *Developmental Psychology, 52*(5), 798. doi: 10.1037/dev0000108
- Clark, L. S. (2011). Parental mediation theory for the digital age. *Communication Theory, 21*(4), 323-343. doi: 10.1111/j.1468-2885.2011.01391.x
- Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75. doi: 10.1207/s15327752jpa4901\_13
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. London: Sage Publications Ltd
- Iannotti, R. J., Kogan, M. D., Janssen, I., & Boyce, W. F. (2009). Patterns of adolescent physical activity, screen-based media use, and positive and negative health indicators in the US and Canada. *Journal of Adolescent Health, 44*(5), 493-499. doi: 10.1016/j.jadohealth.2008.10.142
- Jiow, H. J., Lim, S. S., & Lin, J. (2016). Level up! Refreshing parental mediation theory for our digital media landscape. *Communication Theory*. doi: 10.1111/comt.12109
- Kesten, J. M., Sebire, S. J., Turner, K. M., Stewart-Brown, S., Bentley, G., & Jago, R. (2015). Associations between rule-based parenting practices and child screen viewing: a cross-sectional study. *Preventive Medicine Reports, 2*, 84-89. doi: 10.1016/j.pmedr.2015.01.005
- Koning, I.M., Peeters, M., Finkenauer, C., & Van den Eijnden, R.J.J.M. (2018). Compulsive Social Media and Internet Game use; the Role of Internet-Specific Parenting. Article



in preparation.

- Krasnova, H., Wenninger, H., Widjaja, T., & Buxmann, P. (2013). Envy on Facebook: A hidden threat to users' life satisfaction? In R. Alt & B. Franczyk (Eds.), *11th International Conference on Wirtschaftsinformatik* (Vol. 92, pp. 1–16). Leipzig, Germany. doi: 10.7892/boris.47080
- Krcmar, M., & Cingel, D. P. (2016). Examining Two Theoretical Models Predicting American and Dutch Parents' Mediation of Adolescent Social Media Use. *Journal of Family Communication, 16*(3), 247-262. ISO 690. doi: 10.1080/15267431.2016.1181632
- Kross, E., Verduyn, P., Demiralp, E., Park, J., Lee, D. S., Lin, N., & Ybarra, O. (2013). Facebook use predicts declines in subjective well-being in young adults. *PloS One, 8*(8), e69841. doi: 10.1371/journal.pone.0069841
- Kuntsche, S., & Kuntsche, E. (2016). Parent-based interventions for preventing or reducing adolescent substance use—A systematic literature review. *Clinical Psychology Review, 45*, 89-101. doi: 10.1016/j.cpr.2016.02.004
- Lee, S. J. (2013). Parental restrictive mediation of children's internet use: Effective for what and for whom?. *New Media & Society, 15*(4), 466-481. doi: 10.1177/1461444812452412
- Lee, S. J., & Chae, Y. G. (2007). Children's Internet use in a family context: Influence on family relationships and parental mediation. *CyberPsychology & Behavior, 10*(5), 640-644. doi: 10.1089/cpb.2007.9975
- Lee, S. J., & Chae, Y. G. (2012). Balancing participation and risks in children's internet use: The role of internet literacy and parental mediation. *Cyberpsychology, Behavior, and Social Networking, 15*(5), 257-262. doi: 10.1089/cyber.2011.0552
- Len-Ríos, M. E., Hughes, H. E., McKee, L. G., & Young, H. N. (2016). Early adolescents as publics: A national survey of teens with social media accounts, their media use preferences, parental mediation, and perceived Internet literacy. *Public Relations Review, 42*(1), 101-108. doi: 10.1016/j.pubrev.2015.10.003
- Livingstone, S., & Helsper, E. J. (2008). Parental mediation of children's internet use. *Journal of Broadcasting & Electronic Media, 52*(4), 581-599. doi: 10.1080/0883815080243739612.
- Ramirez, E. R., Norman, G. J., Rosenberg, D. E., Kerr, J., Saelens, B. E., Durant, N., & Sallis, J. F. (2011). Adolescent screen time and rules to limit screen time in the home. *Journal of Adolescent Health, 48*(4), 379-385. doi: 10.1016/j.jadohealth.2010.07.013

- Utz, S., & Breuer, J. (2017). The relationship between use of social network sites, online social support, and well-being: Results from a six-wave longitudinal study. *Journal of Media Psychology: Theories, Methods, and Applications*, 29(3), 115. doi: 10.1027/1864-1105/a000222
- Valenzuela, S., Park, N., & Kee, K. F. (2009). Is there social capital in a social network site?: Facebook use and college students' life satisfaction, trust, and participation. *Journal of Computer Mediated Communication*, 14(4), 875–901. doi: 10.1111/j.1083-6101.2009.01474.x
- Valkenburg, P. M., Piotrowski, J. T., Hermanns, J., & Leeuw, R. (2013). Developing and validating the perceived parental media mediation scale: A self-determination perspective. *Human Communication Research*, 39(4), 445-469. doi: 10.1111/hcre.12010
- Van den Eijnden, R. J., Spijkerman, R., Vermulst, A. A., van Rooij, T. J., & Engels, R. C. (2010). Compulsive Internet use among adolescents: Bidirectional parent–child relationships. *Journal of Abnormal Child Psychology*, 38(1), 77-89. doi: 10.1007/s10802-009-9347-8
- Van der Veer, N., Boekee, S., & Peters, O. (2017). Nationale social media onderzoek 2015. *Amsterdam: Newcom Research & Consultancy*. Retrieved from [https://www.marketingonline.nl/sites/default/files/Newcom\\_-\\_Nationale\\_Social\\_Media\\_Onderzoek\\_2017.pdf](https://www.marketingonline.nl/sites/default/files/Newcom_-_Nationale_Social_Media_Onderzoek_2017.pdf)
- Verduyn, P., Lee, D. S., Park, J., Shablack, H., Orvell, A., Bayer, J., & Kross, E. (2015). Passive Facebook usage undermines affective well-being: Experimental and longitudinal evidence. *Journal of Experimental Psychology: General*, 144(2), 480–488. doi: 10.1037/xge0000057
- Verduyn, P., Ybarra, O., Résibois, M., Jonides, J., & Kross, E. (2017). Do social network sites enhance or undermine subjective well-being? A critical review. *Social Issues and Policy Review*, 11(1), 274–302. doi: 10.1111/sipr.12033
- Widman, L., Choukas-Bradley, S., Noar, S. M., Nesi, J., & Garrett, K. (2016). Parent-adolescent sexual communication and adolescent safer sex behavior: a meta-analysis. *JAMA Pediatrics*, 170(1), 52-61. doi: 10.1001/jamapediatrics.2015.2731
- Woods, H. C., & Scott, H. (2016). # Sleepyteens: social media use in adolescence is associated with poor sleep quality, anxiety, depression and low self-esteem. *Journal of adolescence*, 51, 41-49. doi: 10.1016/j.adolescence.2016.05.008

Zhan, L., Sun, Y., Wang, N., & Zhang, X. (2016). Understanding the influence of social media on people's life satisfaction through two competing explanatory mechanisms. *Aslib Journal of Information Management*, 68(3), 347-361. doi: 10.1108/AJIM-12-2015-0195

## **Appendix A. Measure Instruments**

### **Life Satisfaction**

---

Do you agree or disagree with the following statements:

1. My life is going well
2. My current life is fine
3. There are many things I want to change in my life
4. I wish I had a different kind of life
5. I have a good life
6. I have what I want in life
7. My life is better than the life of most young people

---

Answer categories: totally disagree, disagree, a little disagree, a little agree, agree, totally agree

### **Active Social Media Use**

- 
1. How many times a week do you post a message, picture or video on social network sites?
  2. How many times a week do you like a message, picture or video on social network sites?
  3. How many times a week do you react or share a message, picture or video on social network?

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Answer categories: Never or less than once a week, 1 to 2 times a week, 3 to 5 times a week, 6 to 10 times a week, 11 to 20 times a week, 21 to 40 times a week, more than 40 times

### **Passive Social Media Use**

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1. How many times a day do you look on social network sites?

---

Answer categories: never or less than once a week, 1 to 2 times a week, 3 to 5 times a week, 6 to 10 times a week, 11 to 20 times a week, 21 to 40 times a week, more than 40 times

### **Reactive Restrictions**

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How many times a day do your parents/ guardians tell you that:

1. You are not allowed to use internet or play games
2. You are not allowed to use internet or play games too long
3. You can only use internet or gaming for a certain period of time (e.g. 5 minutes)?
4. Have to turn off the computer / tablet or smartphone?

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Answer categories: (almost) never, a few times per week, 1 to 2 times a day, 3 to 5 times a day, more than 5 times a day.

### **Internet specific rules**

---

To what extent do your parents/ guardians allow you on normal schooldays to:

1. Use the internet or to play games as long as you want
2. Use the internet or play games more than three hours
3. Use the internet or play games when you have not yet finished your homework
4. Use the internet or play games in the hour before you are going to sleep
5. Take your tablet/ smartphone with you to your bed room before you are going to sleep

---

Answer categories: Never, almost never, sometimes, often, very often.

**Parental communication**

---

If I talk to my parents about my internet use or gaming behaviour I feel:

1. Comfortable
  2. Understood
  3. Taken seriously
- 

Answer categories: not true at all, not true, sometimes true, true, completely true

## **Appendix B. Principal Component Analyses and Internal Consistency**

### **Principal Component Analyses**

For several variables it was first checked whether it was correct to compute a scale of the items by performing principal component analyses (PCA). For active social media (T2 & T3) only one component was extracted which explained 64.16% (T2) of the variance and 58.66% (T3) of the variance. PCA was also performed for the items of reactive restrictions and internet specific rules, which resulted in a clear distinction between the items for reactive restrictions and internet specific rules. 23.32% of the variance was explained by the second component for reactive restrictions (T2) and 25.91% of the variance for T3. For internet specific rules, 37.41% (T2) of the variance was explained by the first component and 38.46% of the variance for T3. A PCA was performed for both reactive restrictions and internet specific rules separately. For reactive restrictions only one component was extracted for both measurement points. For T2 this explained 64.25% of the variance and for T3 this explained 70.41%. For internet specific rules only one components was extracted as well for both measurement. For T2 this explained 54.39% of the variance and for T3 it explained 59.11% of the variance. For quality of parental communication only one component was extracted which explained 84.98% of the variance.

### **Internal Consistency**

Before scales were created, the internal consistency was checked. For life satisfaction, the internal consistency was good, with a Cronbach's alpha of .82 at T2 and .83 at T3. For active social media use, the internal consistency was acceptable for T2 with a Cronbach's alpha of .72, while this was questionable with a Cronbach's alpha of .65. When the first item was removed, the internal consistency increased for both measurements to a Cronbach's alpha of .80 at T2 and .76 at T3. It is likely that adolescents post something on social network sites less often than they like a message or photo, so they will score lower on the first item than on the other two items, which make the internal consistency lower. However, this item is an important indicator to measure active social media use, because it measures an active way of using social media. For this reason it is decided to include the first item as well in the scale. For internet specific rules the internal consistency was acceptable for T2 with a Cronbach's alpha of .78. For T3 the internal consistency was good with a Cronbach's alpha of .82. For reactive restrictions, the internal consistency was good with a Cronbach's alpha of .83 at T2 and .85 at T3. For quality of parental communication the reliability analysis showed excellent internal consistency, with a Cronbach's alpha of .91 for both measurements.