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THE IMPORTANCE OF EMOTIONS AND PERSONAL
CHARACTERISTICS ON ADOLESCENTS' RISKY PHOTO-
DISCLOSURE ONLINE

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Abstract

Researchers state that adolescents are likely to engage in risky photo disclosure online, which might be related to their emotions and personal characteristics. Research Questions: How positive and negative emotions when sharing risky photos online are related to adolescents' risky photo disclosure online? How important personal characteristics are related to adolescents' risky photo disclosure online? The purpose of this study is to find out how positive and negative emotions are related to adolescents' tendency to engage in risky photo disclosure and how personal characteristics (narcissism, social anxiety and privacy concern) are related to such kind of behaviour. A randomised cross-sectional survey with a hardcopy questionnaire, based on the measures of variety of the forms of risky photo disclosure online (e.g., sharing nude photos); frequency of risky photo disclosure when feeling positive and negative emotions; personal characteristics (social anxiety, narcissism and privacy concern) was conducted in 2019. 459 adolescents (59.1% female) aged 12-17 years old ($M=14.55$, $SD=1.24$) participated in the study. The results of the study showed that positive and negative emotions towards sharing risky photos on risky photo disclosure online ($F=136.85$, $p<.001$) explains 56% of actual adolescents' risky photo disclosure, with the strongest predictor of positive emotions ($\beta=0.82$, $p<\alpha$); personal characteristics ($F=8.57$, $p<\alpha$) explain only 9.6% of risky photo disclosure online, with the strongest predictor of narcissism ($\beta=0.25$, $p<\alpha$). According to the results, we conclude that positive emotions towards sharing risky photos online and more expressed narcissistic personality trait increases adolescents' tendency to engage in risky photo disclosure online.

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Keywords: Risky behaviour online, photo disclosure, adolescents.

1. Introduction



Adolescents are called to be using the Internet the most often (“Life Online...”, 2017): according to Pew Research Centre Internet Project (2018), around 93% of adolescents are using the Internet. Nowadays they can access the Internet on different devices: smartphone (95%), desktop computer or laptop (88%) (Anderson & Jiang, 2018). One of the most popular activities of today’s adolescents is using social networking sites (SNS) (Van Gool, Van Ouytsel, Ponnet, & Walrave, 2015). The most popular SNS among adolescents are: Youtube (85%), Instagram (72%), Snapchat (69%) and Facebook (51%) (Anderson & Jiang, 2018). It is important to mention that Facebook becomes less popular SNS among teenagers as other networks like Instagram and Snapchat become more entertaining and less parents are using them.

One of the main features of using SNS is disclosing one’s personal information which can be both, verbal and non-verbal. Verbal disclosure refers to sharing person identifiable information (e.g., name, surname, e-mail), opinions, ideas or thoughts and feelings (Valkenburg, Sumter, & Peter, 2011; Xie & Kang, 2015). Nowadays non-verbal self-disclosure, especially photo disclosure, becomes to be a widely spread phenomenon among adolescents on SNS (Anderson & Jiang, 2018; Grigutyte, Raižienė, Pakalniškienė, & Povilaitis, 2018): teens more than ever are into communication online through sharing their photos.

Despite the fact that a lot of researchers around the globe analyse adolescents’ behaviour on SNS and their self-disclosure behaviours, research on adolescents’ photo disclosure on the Internet is still scarce (Houghton et al., 2018). Researchers, analysing both, verbal and non-verbal adolescents’ photo disclosure on the Internet, state that personal characteristics, for example, personality traits, are highly related to adolescents’ online self-disclosure (Hawk, Ter Bogt, Van Den Eijnden, & Nelemans, 2015; Schouten, Valkenburg, & Peter, 2007; Walrave, Vanwesenbeeck, & Heirman, 2012). However, it is unclear how significant personal characteristics, playing an important role in verbal adolescents’ disclosure online, are related to their risky photo disclosure on SNS.

Moreover, it is observed that while analysing self-disclosure on the Internet researchers generally focus on cognitive factors, leaving behind another important aspect – affects. Thus, the study of Yu, Jen-Hwa, & Tsang-Hsiang (2015) shows promising results: positive emotions of adults are related to their disclosure on SNS. According to these results, it would be meaningful to test the relation between adolescents’ risky photo disclosure and their emotions. Finally, to our knowledge, this is one of the first studies analysing the importance of affect on risky adolescents’ photo disclosure on SNS.

1.1. Adolescents’ photo-disclosure on SNS

As it was already mentioned, adolescents’ tendency to share photos on SNS is just growing (Anderson & Jiang, 2018). For example, according to the study based on “EU Kids online” project, around 70% of Lithuanian adolescents state that they are likely to share photos online (Grigutyte et al., 2018).

According to the emerging SNS users’ tendency to post or share photos online, researchers in their qualitative studies attempted to categorize different types of photos SNS users are likely to share online. For example, Dorsch and Ilhan (2016) in their study of adolescents photo sharing on Facebook suggest these general photo categories: photos where adolescents are partying, where alcohol is shown, using

drugs, expressing physical/sexual contact, showing sexiness, photos of a naked body, non-verbal aggression, trend photos, no person in a photo (e.g., architecture, animals), and portrait photos (e.g., selfies). Similarly, to this, Sherman and colleagues (2016), analysing peer influence on adolescents neural and behavioural responses to viewing photos, distinguished neutral photos (e.g., pictures of friends) and photos of risky behaviours, such as: drinking alcohol, smoking, showing rude gestures, wearing provocative clothing. Dorsch and Ilhan (2016) in their study found that the majority of adolescents (90%) would share their portrait photos and would accept their friends doing so. Talking about risky photo sharing, authors note that 98% of participants stated that they would never share photos where their naked body is shown. It is possible to predict that almost all adolescents have negative attitude towards risky photo disclosure online. However, according to the results of the study of Stevens and colleagues (2016), around 25-33% of adolescents post or share provocative or sexual images online.

Considering the fact that any kind of photo disclosure online might be to some extent risky or have negative consequences for the discloser, it is meaningful to figure out what are the underlying mechanisms of such kind of adolescents' behaviour.

1.2. The role of personal characteristics and emotions on adolescents' self-disclosure on SNS

Personal characteristics, as the main determinants of one's behaviour in online and offline settings, have an important impact on adolescents' behaviour on SNS. Recent systematic literature review (Paluckaitė & Žardeckaitė-Matulaitienė, 2019) showed that the most common personal characteristics, related to adolescents' online self-disclosure, are: social anxiety, narcissism and privacy concern. It is said that social anxiety is one of the main features fostering online communication (Pierce, 2009; Schouten et al., 2007). Liu, Ang and Lwin (2013) and Wang, Jackson, and Zhang (2011) in their studies of adolescents' online self-disclosure found that more socially anxious adolescents are more likely to disclose online. In a well-known study of Schouten, Valkenburg and Peter (2007) it is stated that social anxiety has an indirect effect on adolescents' online self-disclosure: it depends on interrelated processes of attribute and perception. Despite that, the majority of authors contribute that social anxiety is one of the most important factors explaining self-disclosure online.

Another personal characteristic is narcissism. Researchers, analysing adolescents self-disclosure in online settings (e.g., Krmar, van der Meer, & Cingel, 2015; Liu, Ang, & Lwin, 2013; Hawk et al., 2015) state that narcissism fosters online self-disclosure: more narcissistic adolescents are more likely to disclose online.

Privacy concern, which in general determines discloser's decision to disclose or not, is a very popular and widely studied phenomenon among users behaviour on the Internet (Paluckaitė & Žardeckaitė-Matulaitienė, 2019). Thus, it is expected that more concerned about their privacy adolescents will share less photos online. For example, Dhir, Chen and Chen (2017) state that more concerned about their privacy adolescents are less likely to share selfies online. However, other researchers observe different tendencies: people are concerned about their privacy online, however, at the same time, they (especially adolescents) are more likely to engage in self-disclosing activities. This phenomenon is called as "privacy paradox": more concerned about their privacy issues users are more likely to self-disclose online. Talking about adolescents disclosure on SNS, most of the studies on teens self-disclosure online

(e.g., Liu, Ang, & Lwin, 2013; Livingstone, Haddon, Görzig, & Ólafsson, 2011; Xie & Kang, 2015) ended up with a notion that more concerned about their privacy online adolescents are less likely to self-disclose.

Age and gender also play an important role in adolescents' risky online self-disclosure. For example, in general, it is stated that boys are seen as the ones who are more likely to engage in risky behaviour online (Notten & Nikken, 2014). Talking about risky photo disclosure, it is important to mention that teenage girls, for example, are seen as the ones who are more likely to engage in sharing flirtatious or sexual photos on SNS (Ramsey & Horan, 2018). Moreover, it is also stated that older adolescents are more likely to engage in different kinds of risky behaviours online (El Asam & Katz, 2018). Thus, we may predict that older female adolescents will be more likely to engage in risky photo disclosure online.

Talking about the importance of affect on online self-disclosure, it is important to mention that one of the most popular theories of affect on person's behaviour, is affect infusion model (Forgas, 1995) which states that positive mood increases the ability to engage in risky behaviour. Scientific literature on the importance of the affect on photo disclosure online is scarce, however, it is stated that affect, and especially emotions, has an impact on online self-disclosure. For example, on this notion, Yu and colleagues (2015) tried to find out if positive emotions are related to adults' online self-disclosure. According to the results of their study, emotions have an impact on online self-disclosure, however, this relation is indirect: positive emotions predict online self-disclosure through cognitive factors (e.g., risks and benefits of online self-disclosure). To our knowledge, there is no study exploring the relation between affect and adolescents photo disclosure online. However, it is stated that adolescents share certain kind of photos, willing that important others or strangers (depending on the goal of photo disclosure) will understand how they feel (Vermeulen, Vandebosch, & Heirman, 2018). Thus, we may predict that positive and/or negative emotions may also be related to adolescents' risky photo disclosure online.

According to the literature review shortly described in this section, we may conclude that both, affect and personal characteristics are important factors explaining verbal adolescents' disclosure online. Thus, we may predict that these factors may also be meaningful in explaining risky adolescents' photo disclosure online. Analysing the importance of these factors on risky teens' photo disclosure online, may help us to understand the mechanism of such kind of emerging adolescents' behaviour on SNS.

2. Problem Statement

Adolescence is a period of enormous changes in biopsychosocial development (Yuen, 2013). Researchers (e.g., van Duijvenvoorde, Peters, Braams, & Crone, 2016; Gamez-Guadix, Borrajo, & Almendros 2016; Yuen, 2013), analysing adolescents' photo disclosure, state that adolescents, because of puberty caused challenges and their need to experiment with their identities, are more likely than any other age groups to participate in such kind of behaviour. On the one hand, posting photos online and sharing those with others allow adolescents to represent themselves and explore their identities (Nosko et al., 2012; Pujazon-Zazik & Park, 2010; Valkenburg & Peter, 2007). On the other hand, such kind of behaviour might be risky (Dowell, Burgess, & Cavanaugh, 2009; Gamez-Guadix et al., 2016; Livingstone et al., 2011) and have negative consequences for the discloser. For example, in their qualitative study,

Paluckaitė and Žardeckaitė-Matulaitienė (2017) concluded that online self-disclosure may cause negative relational (e.g., cyber-bullying, identity theft) and financial (e.g., bank account theft as you publish a photo where accidentally your card's information is visible) consequences. Other researchers state that risky photo disclosure may cause: cyber-bullying, meeting online strangers in real life settings (Gamez-Guadix et al., 2016; Livingstone et al., 2011); conflicts with friends or parents (Youn, 2005); predicts the feelings of regret (Christofides, Muise, & Desmarais, 2012); is related to depressive symptoms (McCrae, Gettings, & Pursell, 2017).

As adolescents' photo disclosure on SNS isn't a widely studied and analyzed phenomenon yet, it is hard to note how likely adolescents are to engage in risky photo disclosure on SNS. For example, according to the results of the study by Stevens and colleagues (2016), around 25-33% of adolescents' post or share provocative or sexual images. Contrary to these results, Dorsch and Ilhan (2016) state that adolescents aren't likely to share sexual photos online at all.

Personal characteristics and affect, as it was already explained earlier, are highly related to adolescents' behaviour on the Internet. However, it is still unclear how these characteristics and positive and negative emotions are related to adolescents' photo disclosure on the Internet. Researchers (e.g., Branley & Covey, 2018; Yu, Hu, & Cheng, 2015) state that online self-disclosure might be related to both, positive and negative, emotions. However, in general, researchers analyse only the importance of positive emotions on online self-disclosure. Thus, it is meaningful to find out how both, positive and negative emotions towards the behaviour are related to adolescents' risky photo disclosure on SNS.

As it was already mentioned, there are a lot of studies conducted on adolescents' online self-disclosure. However, still little is known about the mechanism of adolescents' photo disclosure on SNS (Beldad & Hegner, 2017). The knowledge in this area would help us to have a better theoretical knowledge of such kind of adolescents' behaviour and would help to create or implement prevention and intervention programs, in order to minimize risky behaviour on the Internet.

3. Research Questions

According to the literature review presented above, research questions are:

RQ1: How positive and negative emotions when sharing risky photos online are related to adolescents' risky photo disclosure online?

RQ2: How important personal characteristics are related to adolescents' risky photo disclosure online?

4. Purpose of the Study

The purpose of this study is to find out how positive and negative emotions are related to adolescents' tendency to engage in risky photo disclosure and how important personal characteristics (narcissism, social anxiety and privacy concerns) are related to such kind of behaviour.

5. Research Methods

Research method is a cross-sectional survey with a hardcopy questionnaire, based on the measures of: a variety of the forms of risky photo disclosure online (e.g., sharing nude photos); frequency of risky photo disclosure when feeling positive and negative emotions; personal characteristics (social anxiety, narcissism and privacy concern).

5.1. Procedure

The study was conducted in randomly selected Lithuanian schools. In all, ten Lithuanian schools were randomly chosen (using random numbering tools), based on the type of the school (primary, progymnasium and gymnasium). After selection procedure, schools' principals were contacted in order to inform about the research and to discuss its implementation process. All students, aged 13-17 years and studying in the selected schools, were invited to participate in the study. Informed parental consents were collected and only those students, whose parents agreed of their participation in the study, were invited to participate.

The study was conducted in schools during classes. At the beginning of the research, students were informed about the goals of the study and the importance of their opinion on given questionnaires. They were also informed that at any part of the study they can refuse to continue their participation and that collected data will be used only on scientific purposes.

5.2. Participants

Four hundred and fifty-nine adolescents participated in the study. Their age varied from 12 to 17 years ($M=14.55$, $SD=1.24$). Two hundred and seventy-two (59.1%) of them were female and 187 (40.7%) – male.

5.3. Measures

- **Risky photo disclosure** was measured by 6-item self-developed scale, based on different kind of possibly risky photos (e.g., heterosexual physical/sexual contact, semi-nude body photos, smoking) shared on social networking sites. Adolescents were asked to rate how often they share different types of photos on social networking sites (1-never, 5-very often). Cronbach's α of the scale is .82.

Self-developed risky photo disclosure scale was tested using exploratory factor analysis. The analysis was based on principal axis factoring extraction and *promax* rotation. The exploratory factor analysis confirms a one factor scale of adolescents' risky photo disclosure: $KMO=0.8$, $p<\alpha$ (44.59%).

- **Social anxiety** was measured by the 12-item short form of Social Anxiety Scale for Adolescents (SAS-A) (La Greca & Lopez, 1998). Participants were asked to rate how much each item is true for them (1- not at all, 5-all the time). Higher scores of the scale show more social anxiety. Cronbach's $\alpha=.88$.
- **Narcissism** was measured by 12-item Narcissistic Personality Questionnaire for Children-Revised (NPQC-R) (Ang & Raine, 2009). Participants were asked to rate how well each item

describes them (1- not at all like me, 5-completely like me). Higher scores of the scale show higher narcissism. Cronbach's $\alpha=.84$.

- **Privacy concern** was measured by the 5-item Privacy concern while using SNS scale (Dinev & Hart, 2006). Participants were asked to rate how much do they agree or disagree with each item (1-totally disagree, 5-totally agree). Higher scores of the scale show more expressed privacy concern. Cronbach's $\alpha=.87$.
- **Affect towards risky photo disclosure on social networking sites** was measured by positive and negative emotions towards risky photo disclosure on SNS were measured by asking adolescents if they share certain types of photos while feeling particular 5 positive (joyful, lively, happy, energetic, proud of oneself) and 5 negative (depressed, sad, frightful, scared, angry) emotions (1-totally disagree, 5-totally agree). Cronbach's α for positive emotions is .97, and Cronbach's α for negative emotions - .97.

6. Findings

In order to reach the aim of the study, a multiple regression analyses were used. Data was analysed using IBM SPSS 22. Later in this section the results of importance of positive and negative emotions towards risky photo disclosure and personal characteristics on risky photo disclosure on SNS are presented.

6.1. Importance of positive and negative emotions towards sharing risky photos on risky photo disclosure on SNS

To find out the relations between negative and positive emotions towards risky photo disclosure and actual risky photo disclosure, multiple regression analysis with enter method was used. Adolescents' actual risky photo disclosure on SNS was chosen as a dependent variable. As independent variables positive and negative emotions towards risky photo disclosure were chosen.

Table 01. Prediction of adolescents' risky photo disclosure by positive and negative emotions towards such kind of behaviour

	Risky photo disclosure		
	B	SE B	β
Positive emotions	.15	.01	.82*
Negative emotions	-.04	.01	-.13*
Age	.16	.06	.09*
Gender	.02	.14	.01
R ²	.56		
F	136.85*		

* $p<.01$

Table 01 shows that conducted model of multiple regression is statistically significant ($F(4,426)=136.85, p<.001$). According to the results presented in the Table 01, it is possible to state that positive ($\beta=.82$) and negative ($\beta=-.13$) emotions towards risky photo disclosure and age ($\beta=.09$) predict actual adolescents' risky photo disclosure on SNS. The strongest predictor is positive emotions ($\beta=.82$).

6.2. Importance of personal characteristics on risky photo disclosure on SNS

To find out the relations between personal characteristics and actual risky photo disclosure, multiple regression analysis with enter method was used. Adolescents' actual risky photo disclosure on SNS was chosen as a dependent variable. As independent variables privacy concern while using social networking sites, social anxiety, narcissism, age, and gender were chosen.

Table 02. Predictions of adolescents' risky photo disclosure by privacy concern, social anxiety, narcissism, age and gender

	Risky photo disclosure		
	B	SE B	β
Privacy concern	-.02	.01	-.06
Social anxiety	.01	.01	-.01
Narcissism	.04	.01	.25*
Age	.18	.06	.15*
Gender	-.34	.14	-.12*
R ²	.096		
F	8.57*		

* $p < .05$

Table 02 shows that conducted model of multiple regression is statistically significant ($F(5,403)=8.57, p < .001$). According to the results presented in the Table 02, it is possible to state that privacy concern on using SNS, social anxiety, and narcissism predict adolescents' risky photo disclosure on SNS. However, only narcissism ($\beta=.25$), age ($\beta=.15$), and gender ($\beta=-.12$) are a statistically significant predictors of adolescents risky photo disclosure on SNS.

7. Conclusion

This study was aimed to find out the relation between affect and personal characteristics on adolescents' risky photo disclosure in online settings. The main results and conclusions are discussed in this section below.

7.1. The role of affect on adolescents risky photo disclosure

The results of multilevel regression analysis show that both, positive and negative, emotions on risky photo disclosure online predict such kind of adolescents' behaviour. As it was already mentioned, the only study we could find was Yu and colleagues (2015) study on adults' (university students) emotions towards online self-disclosure, concluding that positive emotions increase adults' likelihood to engage in disclosure on SNS. Contrary to that, our study showed that adolescents' risky photo disclosure was positively related to positive and negatively to negative emotions (with positive emotions having a higher impact).

Thus, we may state that positive emotions increase adolescents' possibility to engage in risky photo disclosure on SNS while negative emotions decrease such kind of behaviour. These results go

along with affect infusion model (Forgas, 1995), stating that positive emotions increase the likelihood to engage in risky behaviour in order to keep the positive emotions or mood emerged. It is also important to mention that age also plays an important role in affect-risky photo disclosure model of adolescents. The results of our study showed that older adolescents are more likely to engage in risky photo disclosure on SNS. These results go along with a general notion and repeated results stating that older adolescents are more likely to engage in risky behaviours online (El Asam & Katz, 2018).

To sum up, the results of the study draws an importance of both, positive and negative, emotions on risky adolescents' behaviour online. However, as it was already mentioned, the research of the importance of affect on risky photo disclosure online is scarce. Thus, it would be meaningful to conduct a deeper analysis in this area, focusing on different risky photos shared online.

7.2. The role of personal characteristics on adolescents risky photo disclosure

The results of the multilevel regression analysis show that social anxiety, privacy concern and narcissism on risky photo disclosure online predict adolescents' risky photo disclosure online. However, according to our results, only narcissism is significantly related to such kind of behaviour. Thus, we may agree with authors stating that a need to be positively evaluated by others and basically to be observed by others makes adolescents not only to self-disclose themselves verbally (Krcmar, van der Meer & Cingel, 2015), but also – is related to their need to risky photo disclosure. Not surprisingly, the results of the study also showed that age and gender plays an important role in adolescents' photo disclosure on SNS: older females are more likely to engage in risky photo disclosure than other peers. These results go along on earlier studies noting the importance of age and gender on risky adolescents behaviour online (e.g, El Asam & Katz, 2018; Ramsey & Horan, 2018).

These results highlight a need to analyse risky adolescents' photo disclosure based on their personality traits. To be more precise, there is a need to be more concerned on adolescents who are more likely to be evaluated only in a positive way (e.g., narcissistic adolescents). It's a very important notion for educators and social area specialists working with adolescents, stating that older narcissistic female adolescents might be more into risky photo disclosure on SNS.

To sum up, it is important to mention that the results of this study draw an importance of affect and personal characteristics on risky adolescents' risky photo disclosure online. However, we still can't point out the most important factors driving such kind of behaviour. Thus, further research should focus on analysis of adolescent's risky photo disclosure in a more depth methods.

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