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Khalid Ismail Mustafa
Koya University, Iraq

Zhwan Dalshad Abdullah
Koya University, Iraq

Renas Osman Abdulrahman
Koya University, Iraq

Azad Ali Ismail
Koya University, Iraq

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Factors Underlie Selfie Addiction: Developing and Validating a Scale

Khalid Ismail Mustafa, Zhwan Dalshad Abdullah, Renas Osman Abdulrahman, Azad Ali Ismail

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Abstract

This study aimed at investigating the underlying factors of selfie addiction among university students. It further attempted to find out the role of gender difference in selfie addiction. A 19-item self-developed questionnaire used to measure selfie addiction. The questionnaire was validated using a sample of 269 randomly selected university students. Principle Component Analysis (PCA) was conducted to test the validity of the questionnaire. The results revealed three underlined factors which were: Intention, Self-Obsessed, and Self-Acceptance. The results also indicated that females are more addicted with respect to selfies on social media than their males.

Introduction

Selfie taking has spread increasingly across different age groups and has become ubiquitous with everyday life (Roberts & Koliska, 2017; Moon et al., 2016). Social networking platform users utilize various types of pictures, particularly selfies, to display their personalities, lifestyles, and preferences (Sung et al., 2016). “Selfie” has been defined in Oxford Dictionary (2003) as a: “photograph that one has taken of oneself, typically one taken with a Smartphone or webcam and, uploaded to a social media website”. It has been also defined by other researchers as a digital self-portrait that is aided by the technological explosion of front-facing mobile cameras, photo-editing software and multiple social media platforms (Shah & Tewari, 2016). Kiprin (2013) defined it as a photo taken by an individual using any hand-held device (e.g., phone, iPad), whether or not the intention is to share it online. Selfie includes also photographs taken of oneself with a partner or a group of people (Sorokowski et al., 2015).

Selfie, as a new social phenomenon warrants greater academic attention which needs more investigation about the intention behind selfie taking. Although, little is known about the selfie addiction in general, selfies have recently received increasing attention from researchers and practitioners in psychology and communication as they represent image-based self-presentation on social networking sites (Chua & Chang, 2016; Qiu et al., 2015). With the easy access to these platforms via mobile devices, social networking sites have become an important part of people's daily lives (Kim et al., 2016). Dhir et al. (2016a) found that the selfie category encompasses a range of uses and intentions. People are now constantly urged to use the new digital technologies and social networks as a mode of entertainment and communication (Giroux, 2015). The usual criticism of selfies is that they are an out of-control form of narcissism in a society that promotes forms of extensive self-interest (Biressi & Nunn, 2014). It has also been linked to self-obsession (Patricia, 2016).

Regarding gender differences, previous studies (e.g., Colley & Maltby, 2008; Jackson et al., 2001) indicated that females tend to use the Internet for social gratifications, e.g. connecting and communications. Saleem et al. (2014) indicated that female students were more prone to develop a Facebook addiction as compared to male students. In addition, studies found that women posted more own, partner, and group selfies than men did (Som et al., 2017; Brown et al., 2016; Sorokowski et al., 2015). Studies found that women spending more time on social media and selfie-posting (Arpaci, 2018). Dhir (2015) suggested that the older extrovert males, and those who perceive online information to be public, have more experience of taking and sharing photos on Facebook. Even though, males are apprehensive about self-image (Haferkamp et al., 2012), Dhir et al. (2016a) suggested that male adolescents tend to seek higher "Likes and Comments" and "Gain Popularity" gratifications compared to female adolescents.

In their study, Duggan et al. (2015) showed that in terms of platform popularity among young adults 18-29 years old with Internet access, 87% use Facebook, 53% use Instagram, and 37% use Twitter. Users share photos to gratify needs of affection, attention seeking, disclosure, habit, information sharing, and social influence (Malik, Dhir & Nieminen, 2016). While, the new report from Pew Research Center (as cited in Tran, 2018) on social media demographics and usage, social media continues to be most popular among younger age groups. Of all age groups, 18- to 29-year-olds drive the most social media consumption 88% percent of 18- to 29-year-olds indicated using some form of social media. Snapchat and Instagram appeal more strongly to a subset of younger social media users, while other top social platforms, such as Facebook and YouTube, appeal to the masses.

Different reasons were reported for taking and posting selfies include self-presentation and identification (Kazt & Crocker, 2015). For some, it is often an act of fun and assertion of one"s right to „self-depiction" (Shah & Tewari, 2016). Age and gender affect the number of selfies one clicks, be it a behavioral change, peer pressure is considered a psychological phenomenon in which people do something primarily because other people are doing it (Som et al., 2017).

The discussion of selfie is mostly focused on young women, forming into a critique of their apparent narcissism as a regressive trait (Murray, 2015). The previous literature has not yet examined the possible age and gender differences in the emerging and popular phenomenon of selfie-taking (Dhir et al., 2016). Since there is no agreed upon definition for selfies addiction, researchers tried to adopt Internet and Facebook addiction definitions. Young (1996) defined Internet addiction as a pathological state in which an Internet user tends to spend more time on Internet use than originally intended, despite knowing the obvious consequences. Others, (e.g., Lee et al., 2012) defined Facebook addiction as having difficulty in controlling and limiting the time spent on Facebook. In the present study, researchers define selfie-addiction as a compulsive behavior of selfie taking or over selfie-taking with any hand-held device by the individuals having difficulty in controlling and limiting taking pictures of oneself.

Students who have developed an addiction to selfie taking might not be aware that their behavior is out of control, as self-obsession, narcissistic, relationship problems, and attention seeking (Malik et al., 2015; Murray, 2015; Patricia, 2016). Charoensukmongkol (2016) reported that attention-seeking, loneliness, and self-centered

behavior had a significant relationship with selfie-liking. It was reported that deaths sometimes occurred as a result of trying to take selfie in dangerous contexts (Balakrishnan & Griffiths, 2018). Griffiths (2018) confirms that the findings of their research do not indicate that selfitis is a mental disorder, further research are required to fully assess the psychosocial impacts that the behavior might have on the individual. To researchers‟ knowledge, so far no academic research has been conducted on university students in Iraq. In order to better understand what are the factors determining the level of selfie-addiction among university students in this area, this study aims to construct and examines the underlying factors of selfie addiction with its key answers among university students. Moreover, the study aims to find out differences between male and female students with regard to selfie-addiction.

This present study aims to answer the following research questions:

RQ1. What are the underlying dimensions of selfie- addiction?

RQ2. To what extent is the level of selfie- addiction among students?

RQ3. Is there any significant difference between male and female students‟ selfie- addiction?

Method

Participants and Procedure

The participants of this study were randomly selected students at Koya University in the academic year 2013-2014. The sample consisted of 300 students, 271 of which responded (53 were male and 218 were female). The data obtained from the selected sample was used to examine how the respondents report selfie-addiction.

Measures

This study used a quantitative approach with a survey design. The data collection instrument was developed by the researchers in order to examine the underlying factors of selfie-addiction. The questionnaire consisted of 24 items with Likert scale of five-point response ranging from 1 (never) to 5 (always). The items were validated by a group of specialists and experts for establishing face validity.

The instrument was pilot tested on a sample of 120 students at Koya University. Principal Component Analysis (PCA) was used to decide the number of dimensions for each factor. Three hypothesized dimensions were identified:

- The first dimension represents students‟ self-acceptance, which is related to self-satisfaction and shaping their self-conception based on other people's perception.
- The second was geared towards measuring the self-obsessed, which describes someone‟s obsession about how they are perceived by others.
- The third dimension was concerning person's intention to engage in specific behavior.

After conducting the exploratory PCA within each block, reliability testing and a careful examination of the correlations, some items were either deleted or modified. The fine-tuning of the instruments continued until the

loadings of the items and their validity coefficients were satisfactory; thus, 4 items were deleted from the instrument and 19 items were retained. Reliability was obtained by calculating Coefficient Alpha, and a factor analysis was performed to provide further evidence of construct validity and to illustrate the factorial structure of the instrument.

Results and Discussion

Factor Analysis

PCA was applied to examine the construct of students‟ selfie-addiction based on the data collected from the respondents (n = 271) at Koya University. The analysis confined to three dimensions. In Table 1, the Kaier-Meyer-Olkin measure of sampling adequacy among the variables was high .760 which is well above the recommended threshold of .6 (Kaiser, 1974).

Table 1. KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.762
Bartlett's Test of Sphericity	Approx. Chi-Square	1172.046
	Df	190
	Sig.	.000

The Bartlett‟s test of Sphericity (1172.04) had reached statistical significance (p=0.000) indicating that the correlations were sufficiently large. To obtain sufficient factor solution, the varimax rotation method was applied to the relevant data. The items to be retained were selected on the basis of the following criteria: the solution was constrained using the criterion of eigenvalue ≥ 1.0 (Fabrigar et al., 1999) and meeting the criterion of factor loading generally not less than (.34) on the defining component (Hair et al., 1998).

The analysis confined to three dimensions has met the above criteria which equates to a total of 37.5 % of the variance. The variance of the first dimension was 13.0 %, the second was 12.2 %, and the last was 12.2 %. The largest eigenvalue was 4.48 for the first dimension, whilst the other subsequent eigenvalues were 1.59 and 1.41 respectively as seen in Table 2.

Table 2. Total Variance Explained by the Research Instruments

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.488	22.438	22.438	2.614	13.068	13.068
2	1.591	7.953	30.391	2.442	12.211	25.279
3	1.418	7.089	37.479	2.440	12.201	37.479

The analysis extracted three factor solutions, and the 19 items measured three underlying dimensions as the study hypothesized initially. Moreover, the solution, free from any noise such as factorial complexity and

variable-specific factor, extracted positive loadings. This result has justified that the factor solution was extracted from the non-chance loading (see Table 3).

Table 3. Loading for Three Factor Rotated Solution of Selfie Addiction

Factor	Item	Factor loading			Cronbach's alpha coefficient
		F1	F2	F3	
Selfie-Addiction	**Intention**				**.67**
	1. I take selfie before I go out or go to any occasion.	.752			
	2. To see myself, I take selfie as a mirror.	.630			
	3. I have a reason to take selfie.	.508			
	4. I feel comfortable when I take selfie	.467			
	5. No one helps me for taking photos, so I take selfie.	.448			
	6. Taking selfie is for feeling of my beauty.	.442			
	Self-Obsessed				
	7. I take selfie to know that who, like, comment on my photos.		.851		**.66**
	8. I take selfie hopping to get more likes.		.838		
	9. I frequently change my profile picture of my account (Instagram, Viber, Facebook, etc.)		.426		
	10. I want to express my feelings through selfie.		.375		
	Self-Acceptance				**.67**
	11. I am not satisfied with my face.			.612	
	12. I edit my pictures to be accepted.			.570	
	13. Fear of losing my photos.			.536	
	14. No matter where, I take selfie.			.502	
	15. I take Selfie because it's common.			.440	
	16. I take Selfie to know what people criticize about me.			.435	
	17. I wear more makeup for taking selfie.			.415	
	18. I try to change my face shape while taking selfie?			.414	
	19. I spend much time for taking Selfie than studying.			.356	
Total sub-scale					**.81**

The result suggests the existence of three common elements of the students‟ selfie-addiction namely students‟ self-acceptance, self-obsessed, and intention. In other words, these items measured the extent to which selfie-addiction has three inter-correlated dimensions. The empirical grouping of the items loaded on this factor reasons that the high scores on these dimensions imply that the student‟s selfie-addiction are highly correlated with the self-acceptance, high self-obsession to take selfies and high intention of taking selfies at Koya University. These 19-items‟ strong and significant loading on the three dimensions are represented as being initially hypothesized as a selfie-addiction.

In order to estimate the reliability of the three dimensions of selfie-addiction, Cronbach‟s alpha formula was used (see Table 3). The internal consistency indices for this scale were (0.67) for intention, (0.66) for self-obsessed, and (0.67) for self-acceptance. The overall Cronbach‟s alpha for this scale was (0.81). The varimax rotation indicates that three dimensions of the selfie-addiction were moderately correlated.

All the three factors were found to be significantly correlated to each other (see Table 4). Correlation between intention and acceptance was the highest while between obsession and acceptance was the lowest, although significant.

Table 4. Correlation between the Components of Selfie Addiction

		Intention	Obsession	Acceptance
Intention	Pearson Correlation	1	.424**	.492**
	Sig. (2-tailed)		.000	.000
	N	271	271	271
Obsession	Pearson Correlation	.424**	1	.360**
	Sig. (2-tailed)	.000		.000
	N	271	271	271
Acceptance	Pearson Correlation	.492**	.360**	1
	Sig. (2-tailed)	.000	.000	
	N	271	271	271

**. Correlation is significant at the 0.01 level (2-tailed).

As seen from Table 4, all correlations among the three factors are found to be significant.

Key Answers

Based on the results, the study found that the key answers for the three underlined factors to be as follows (see Table 5):

Table 5. Key Answers

	Never	Less time	Some time	More time	Always
Scales (5-options)	1-1.5	1.5-2.5	2.5-3.5	3.5-4.5	4.5-5
Total scores (19-items)	19-28	29-47	48-66	67-85	85-90
Description	Not at risk	At risk	High risk	Addicted	

The Prevalence of Selfie Addiction among Students

The study found three underlying factors of selfie addiction, each of them showed different level of addiction. According to the key answers, the level of students" selfie addition of Intention is moderate (M= 14.77 SD=4.06), of Obsession is slight (M=9.93, SD= 3.56), and of Acceptance is slight (M=20.03, SD= 5.02) (see Table 6).

Table 6. The Selfie Addiction Level of Students in All Dimensions

N= 271	Intention	Obsession	Acceptance	Total
Mean	14.77	9.93	20.03	14.91
SD	4.06	3.56	5.02	4.21

Selfie Addiction and Gender Differences

The t-test results of the study revealed that the females showing statistically significant differences and highest level of Selfie-addiction with two underlying factors (Intention factor: female M= 15.24, SD=4.091, male M= 12.81, SD= 3.329, t (269)=4.015, p = 0.001) and (self-Acceptance: female M= 20.48, SD= 5.074, male M=18.17, SD= 4.402, (t(269)=3.049, p = 0.001). Moreover, males showed higher selfie addiction level in self-obsessed factor (M= 10.11, SD= 2.554) than females (M= 9.88, SD=3.774) but this difference wasn"t statistically significant (t (269)=-0.425, p =0.671) (see Table 7).

Table 7. The t-Test in External Factor Selfie Addiction between Females and Males

Variable	Group	N	M	SD	t	df	Sig
Intention	Female	218	15.24	4.091	4.015	269	.000
	Male	53	12.81	3.329			
Self-Obsession	Female	218	9.88	3.774	-.425	269	.671
	Male	53	10.11	2.554			
Self-Acceptance	Female	218	20.48	5.074	3.049	269	.001
	Male	53	18.17	4.402			

In this study, the researchers have tried to offer a foundation regarding selfies as a rising phenomenon, with consequences driven by i.e. addiction. Thus, the purpose of this present study was to construct and examine the

underlying dimensions of selfie-addiction with its key answers among university students. It also attempted to determine the level of selfie-addiction among students, and examine their gender differences.

The findings suggested the existence of three common elements of the students‟ selfie-addiction; namely students‟ self-acceptance, self-obsession, and intention. It was also found according to the key answers the level of students‟ selfie-addiction of intention was moderate while obsession and self-acceptance were slight. Further findings revealed that females showing higher level of Selfie-addiction with two underlying factors, intention and self-acceptance. This was consistent with the findings of others (Arpaci, 2018; Brown et al., 2016; Saleem et al., 2014; Sorokowski et al., 2015; Som et al., 2017) which indicated females spending more time on social media posting their selfies and are more prone to develop a social networking addiction. The possible reason behind this finding is that, females are more prone to enhance their image through editing such as, Photoshop, Snapchat, or even plastic surgery so that they feel comfortable with the selfies they post on social media.

Although, the differences were not significant in this current study, males showed a higher selfie-addiction level in self-obsessed factor. This was consistent with the findings of other researchers (Dhir et al., 2016a; Dhir et al., 2016b; Dhir, 2015; Haferkamp et al., 2012) which revealed that males tend to show off their status seeking higher Likes and Comments and Gain Popularity, being apprehensive about their self-image. Whilst, it was inconsistent with Som et al. (2017) study, female respondents were more obsessed with selfie as compared to the male; majority agreed that selfie boosted their confidence. A person who is so self-obsessed that they post copious amounts of selfie on their social media with no purpose other than to say "look at me!”

Conclusions

As with internet addiction, the concept of “selfie addiction” started as a hoax, but recent researches have begun to empirically validate its existence (Balakrishnan & Griffiths, 2018). In order to understand the concept of "selfie-addiction" this current study defined it as a compulsive behavior of selfie taking or over selfie-taking with any hand-held device by the individuals having difficulty in controlling and limiting taking pictures of oneself. To understand what are the factors determining the level of selfie-addiction among university students in this area, this study aimed to construct and examine the underlying factors of selfie addiction among university students.

The findings suggested the existence of three common elements of the students‟ selfie-addiction; namely students' self-acceptance, self-obsession, and intention. Although these three factors were correlated, students‟ scores on every factor varied. The level of students' selfie-addiction on intention factor was moderate, while their scores on obsession and self-acceptance factors were low. Further findings revealed that females showing higher level of selfie-addiction with two underlying factors, intention and self-acceptance. This finding supports previous studies conducted on selfie addiction. Nevertheless, using the term (addiction) with taking selfies needs more assessment and diagnostic works.

The present study contributed to the prior literature, as there is an obvious lack of past studies examining selfie-addiction; the current study is also the first investigation that has examined gender differences among university students regarding selfie-addiction, which is currently rare in the new social and technology literature. Moreover, the present study provided important insights for researchers to scrutinize this concept more thoroughly and in different contexts. Further psychological researches are needed to address other potential factors such as motivation and attitudes, to better understand selfie taking behavior. So generally, this new area needs more scientific works particularly at the assessment level. We hope this study has contributed to fill some existing gap in this area.

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Author Information

Khalid Ismail Mustafa
https://orcid.org/0000-0003-0116-5467
Koya University
University Park, Danielle Mitterrand Boulevard,
Iraq
Contact e-mail: *Khalid.ismail@koyauniversity.org*

Zhwan Dalshad Abdullah
https://orcid.org/0000-0001-9570-1544
Koya University
University Park, Danielle Mitterrand Boulevard,
Iraq

Renas Osman Abdulrahman
https://orcid.org/0000-0003-2732-4067
Koya University
University Park, Danielle Mitterrand Boulevard,
Iraq

Azad Ali Ismail
https://orcid.org/0000-0002-1799-1299
Koya University
University Park, Danielle Mitterrand Boulevard,
Iraq