*International Research Journal of Social Sciences*_____ ISSN 2319–3565
Vol. **10(1),** 20-27, January **(2021)** *Int. Res. J. Social Sci.*

Determination of the prevalence of phubbing and its possible relations with personality characteristics and with the other factors among the students of the faculty of medicine from western Turkey

Hatice AYGAR[1], Mustafa TOZUN[2], Alaettin UNSAL[1], Didem ARSLANTAS[1], Didem OKTAR[1] and Gokce DAGTEKIN[1]
[1]Department of Public Health, Medical Faculty, Eskisehir Osmangazi University, Izmir, Turkey
[2]Department of Public Health, Medical Faculty, Izmir Katip Celebi University, Izmir, Turkey
mtzn76@gmail.com

Available online at: www.isca.in, www.isca.me
Received 10th June 2020, revised 2nd November 2020, accepted 3rd December 2020

Abstract

Phubbing is defined that an individual's attention to the smartphone while he / she is in communication with another individual. Phubber is interested in the smartphone and he misses his perception from interpersonal communication. The aim of the study was to determine the prevalence of phubbing and its possible relations with personality structure and with the other factors among the students of the faculty of medicine. This cross-sectional study was conducted from 02 January to 28 February 2019 among a medical faculty students in western Turkey. Target medical students were 1544 and 1216 (78.7%) students agreed to participate in the study. Phubbing level was evaluated with the Phubbing Scale. Personality traits were evaluated with the Ten-Item Personality Scale. Chi-square test and Logistic Regression Analysis (Backward Wald) were used to analyze the data. P≤0.05 was accepted as the statistical significance value. In the study, 615 (50.6%) of the study group was female and 601 (49.4%) was male. Ages ranged between from 17 to 28 and the mean was 21.40 ± 2.05 years. The prevalence of phubbing was 12.7% (n = 154). The risk factors for phubbing are smoking (OR: 1.548), sleeping time of 9 hours or more (OR: 1.824), daily smartphone usage time of 5 hours and above (OR: 3.447), seeing the place of the smartphone as indispensable (OR: 5.284), and not doing regular physical exercise (OR: 1.537). No relationship has been shown between the personality structure and phubbing (p>0.05). According the study's results, we can say that phubbing is one of the most common health problem among the medical students. In order to reduce the frequency of phubbing, it will be useful to inform students, parents and teachers about negative results of use of smart phones out of purpose.

Keywords: Phubbing, medical students, risk factors.

Introduction

Phubbing (in other words, sociothelism) is defined that an individual's attention to the smartphone while he / she is in communication with another individual. Phubber is interested in the smartphone and he misses his perception from interpersonal communication[1]. Phubbing is generally described as an addiction.

It is considered as a social behavior disorder also. Together with this, it is associated with smart phone addiction and/or internet addiction. A phubbed individual may also show all the features of addiction, internet and / or smart phone addiction, or show some symptoms, or may not show any traces of these addictions[2]. Since 2007, the number of mobile phone subscribers in Turkey has increased from 62 million to 73.6 million. In this rise in the use of smartphones, the share of the Y and Z generation is high.

Those born between from 1977 to 1994 (Generation Y) are highly intellectual and prone to technology. However, those born after 1995 (generation Z) are a generation that has more internalized information and communication technology than generation Y[3]. Internet addiction in adolescence is also a factor associated with *egocentrism*. An adolescent tries to get rid of family dependence, while endeavoring new developed own self-identity to his/her family and society[4].

A study from Turkey shows that college students reduced their use of Facebook and Twitter. In the same study, it is reported that Facebook is used for social interaction and information, Twitter's access to the news, and the expression of thoughts, and Instagram is mainly used for entertainment and spending time[5].

The aim of the study was to determine the prevalence of phubbing and its possible relations with personality structure and with the other factors among the students of the faculty of medicine.

Materials and methods

This cross-sectional study was conducted from 2 January to 28 February 2019 among a medical faculty students in western Turkey. The target population of the study was 1544 students in

a medical faculty of western Turkey. Students who were not in the school during the study period and did not agree to participate in the study were excluded from the study. The study group was created with 1216 (78.7%) students.

A questionnaire form was prepared using the literature as a data collection tool.

The questionnaire included questions about some socio-demographic characteristics of students (age, gender, number of siblings, family income status, etc.) and some variables that are thought to be related to phubbing (age of using a smartphone, daily smartphone usage time, applications used on a smartphone, etc.).

Phubbing level was evaluated with the Phubbing Scale. Personality traits were evaluated with the Ten-Item Personality Scale.

The Phubbing Scale was developed by Karadaget al.[1] in 2015, and the scale consists of 10 questions in the 5-point Likert type. The answers to the questions are always scored as "5", often "4", sometimes "3", rarely "2" and never "1". The scores that can be obtained from the scale vary between from 10 to 50, and as the score gets increased, the level of phubbing increases. In this study, those who scored 35 or higher from the scale were considered to have “phubbing”.

The Ten-Item Personality Scale was developed in 2003 by Gosling et al.[6]. The reliability and validity study was conducted in 2013 in Turkey by Atak.[7] The scale, which consists of 10 items in seven-Likert type, has 5 sub-dimensions: “Extraversion, Agreeableness, Conscientiousness, Emotional Stability and Openness to Experience”. There are two items in each sub-dimension, and scores for each sub-dimension are calculated separately.

The answers given to the scale items are scored ranging from Absolutely Disagree (1) to Totally Agree (7). The main personality trait of the individual is considered as the personality trait belonging to that sub-field, whichever sub-domain is the highest score in the scale.

The questionnaire forms and scales were filled out by the students themselves under observation. This process took about 10-15 minutes.

The individual with type A behavior is extremely competitive, committed to his job and very sensitive to time. The type B personality structure has the opposite characteristics of type A.[8]

The family income levels of the students were evaluated as "low, middle and high" according to their own perceptions.

Friendship relations are defined as “bad, medium and good” according to their own perceptions.

Ethics committee approval was received from Eskisehir Osmangazi University Non-Interventional Ethics Committee on 15.01.2020 and numbered 25403353-050.99-E.6874 to conduct the study.

In order to collect data, a written administrative permit was obtained from Eskisehir Osmangazi University Dean of Faculty of Medicine dated 22.01.2020 and numbered 64267429-044-E.9815.

The students were informed before the application of the questionnaire and their verbal consent was obtained.

The data obtained were transferred in computer environment and evaluated in SPSS 20.0 Statistics Package Program. Chi-square test and Logistic Regression Analysis (Backward Wald) were used for analysis. $P \leq 0.05$ was accepted as the statistical significance value.

Results and discussion

In the study, 615 (50.6%) of the study group were women and 601 (49.4%) are men. Their ages ranged between from 17 to 28 and the mean was 21.40±2.05 years. The frequency of phubbing in this study was found to be 12.7% (n=154).

Distribution of those with and without phubbing according to some sociodemographic characteristics in the study group was presented in Table-1.

The age of using the first smartphone in the study group ranged between 7-25 and the mean was 14.35 ± 2.30 years. Students' daily smartphone usage times vary from 1 to 16 hours, with an average of 3.85 ± 2.49 hours.

Distribution of detected and undetectable phubbing by some characteristics related to phubbing in the study group was presented in Table-2.

The numbers (percentages) for personality types of the students were follow: Extraversion, Agreeableness, Conscientiousness, Openness to Experience and Emotional Stability were 313 (25.7%), 234 (19.2%), 256 (21.1%), 256 (21.1%), and 157 (12.9%), respectively.

Distribution of detected and undetectable phubbing in the study group by personality types was presented in Table-3.

Logistic Regression Model (Backward Wald*)* results created with variables (gender, staying with family, smoking and alcohol habits, daily sleep time, daily smartphone usage time, daily number of smartphone control, location of smartphone in life, regular physical exercise status, regular newspaper-book reading habit and personality type) found to be related to phubbing in the study group (step: 5) was presented in Table-4.

Table-1: Distribution of those with and without phubbing according to some socio demographic characteristics in the study group.

Socio demographic characteristics	Phubbing			Statistical analyses χ^2; p
	No n (%)*	Yes n (%)*	Total n (%)**	
Class in the medical faculty				
1-3	566 (87.5)	81 (12.5)	647 (53.2)	0.026; 0.871
4-6	496 (87.2)	73 (12.8)	569 (46.8)	
Age group				
≤19	224 (89.2)	27 (10.8)	251 (20.6)	1.771; 0.621
20-21	319 (86.4)	50 (13.6)	369 (30.3)	
22-23	347 (86.3)	55 (13.7)	402 (33.1)	
≥24	172 (88.7)	22 (11.3)	194 (16.0)	
Gender				
Woman	523 (85.0)	92 (15.0)	615 (50.6)	5.925; 0.015
Man	539 (89.7)	62 (10.3)	601 (49.4)	
Type of family				
Nuclear family	937 (87.6)	133 (12.4)	1070 (88.0)	0.923; 0.630
Extended family	75 (87.2)	11 (12.8)	86 (7.1)	
Fragmented family	50 (83.3)	10 (16.7)	60 (4.9)	
Family income				
Low	261 (86.1)	42 (13.9)	303 (24.9)	2.733, 0.255
Middle	774 (88.1)	105 (11.9)	879 (72.3)	
High	27 (79.4)	7 (20.6)	34 (2.8)	
Residence				
With his/her family	194 (91.5)	18 (8.5)	212 (17.4)	4.044; 0.044
Without his/her family	868 (86.5)	136 (13.5)	1004 (82.6)	
Number of siblings				
0	101 (85.6)	17 (14.4)	118 (9.7)	1.309; 0.727
1	486 (88.2)	65 (11.8)	551 (45.3)	
2	290 (86.1)	47 (13.9)	337 (27.7)	
3 and above	185 (88.1)	25 (11.9)	210 (17.3)	
Type of personality				
A	461 (85.8)	76 (14.2)	537 (44.2)	1.926; 0.165
B	601 (88.5)	78 (11.5)	679 (55.8)	
Smoking				
No	770 (88.8)	97 (11.2)	867 (71.3)	5.954; 0.015
Yes	292 (83.7)	57 (16.3)	349 (28.7)	
Alcohol consumption				
No	745 (89.1)	91 (10.9)	836 (68.8)	7.657; 0.006
Yes	317 (83.4)	63 (16.6)	380 (31.2)	
Overweight-obese				
No	850 (86.5)	133 (13.5)	983 (80.8)	3.475; 0.062
Yes	212 (91.0)	21 (9.0)	233 (19.2)	
Total	1062 (87.3)	154 (12.7)	1216 (100.0)	

* Percentage is taken according to the total of the row. ** Percentage is taken according to the total of the column.

Table-2: Distribution of detected and undetectable phubbing by some characteristics related to phubbing in the study group.

Some characteristics related with Phubbing	Phubbing			Statistical analyses χ^2; p
	No n (%)*	Yes n (%)*	Total n (%)**	
Relations with family members				
No good	247 (85.2)	43 (14.8)	290 (23.8)	1.611; 0.204
Good	815 (88.0)	111 (12.0)	926 (76.2)	
Relations with friends				
No good	331 (86.2)	53 (13.8)	384 (31.6)	0.657; 0.418
Good	731 (87.9)	101 (12.1)	832 (68.4)	
Daily sleep time (hours)				
≤6	280 (87.0)	42 (13.0)	322 (26.5)	13.769; 0.001
7-8	657 (89.4)	78 (10.6)	735 (60.4)	
≥9	125 (78.6)	34 (21.4)	159 (13.1)	
Age of first use of the smartphone (years)				
≤12	203 (86.0)	33 (14.0)	236 (19.4)	2.833; 0.243
13-15	586 (86.6)	91 (13.4)	677 (55.7)	
≥16	273 (90.1)	30 (9.9)	303 (24.9)	
Daily smartphone usage time (hours)				
≤2	331 (94.6)	19 (5.4)	350 (28.8)	72.407; 0.000
3-4	494 (90.5)	52 (9.5)	546 (44.9)	
≥5	237 (74.1)	83 (25.9)	320 (26.3)	
Daily smartphone checks				
≤14	307 (91.9)	27 (8.1)	334 (27.5)	14.389; 0.002
15-29	222 (87.1)	33 (12.9)	255 (21.0)	
30-44	237 (88.4)	31 (11.6)	268 (22.0)	
≥45	296 (82.5)	63 (17.5)	359 (29.5)	
Internet access status on the smartphone				
With mobile data	809 (86.6)	125 (13.4)	934 (76.8)	1.881; 0.170
With wireless network connection	253 (89.7)	29 (10.3)	282 (23.2)	
The place of the smartphone in your life				
Indispensable	383 (76.4)	118 (23.6)	501 (41.2)	91.422; 0.000
Assistant	606 (94.8)	33 (5.2)	639 (52.5)	
Even if not	73 (96.1)	3 (3.9)	76 (6.2)	
Social media membership				
No	10 (100.0)	0 (0.0)	10 (0.8)	Fisher; 1.27
Yes	1052 (87.2)	154 (12.8)	1206 (88.2)	
Regular physical exercise				
Yes	470 (90.0)	52 (10.0)	522 (42.9)	6.041; 0.014
No	592 (85.3)	102 (14.7)	694 (57.1)	
Participation in artistic activities (such as playing musical instruments, drawing, dancing)				
Yes	549 (88.5)	71 (11.5)	620 (51.0)	1.682; 0.195
No	513 (86.1)	83 (13.9)	596 (49.0)	
Regular newspaper-book reading habit				
Yes	576 (89.3)	69 (10.7)	645 (53.0)	4.804; 0.028
No	486 (85.1)	85 (14.9)	571 (47.0)	
Total	1062 (87.3)	154 (12.7)	1216 (100.0)	

* Percentage is taken according to the total of the row. ** Percentage is taken according to the total of the column.

Table-3: Distribution of detected and undetectable phubbing in the study group by personality types.

Type of personality	Phubbing		
	No n (%)	Yes n (%)	Total n (%)
Extraversion	281 (98.9)	32 (10.2)	313 (25.7)
Agreeableness	195 (83.3)	39 (16.7)	234 (19.2)
Conscientiousness	216 (84.4)	40 (15.6)	256 (21.1)
Openness to Experience	226 (88.3)	30 (11.7)	256 (21.1)
Emotional Stability	144 (91.7)	13 (8.3)	157 (12.9)
Total	1062 (87.3)	154 (12.7)	1216 (100.0)

*Percentage is taken according to the total of the row. **Percentage is taken according to the total of the column. X^2=10.039; 0.040

Table-4: Logistic Regression Model results created with variables found to be related to phubbing in the study group (step: 5).

Variables	ß	SE[a]	p	OR[b]	%95 CI[c]
Gender (Reference: Man)					
Woman	0.315	0.199	0.113	1.371	0.928-2.024
Smoking (Reference: No)					
Yes	0.437	0.206	0.034	1.548	1.034-2.318
Daily sleep time(Reference: 7-8 hours)					
≥6 hours	0.243	0.221	0.270	1.275	0.828-1.965
≥9 hours	0.601	0.253	0.017	1.824	1.111-2.993
Daily smartphone usage time (Reference: ≤2 hours)					
3-4 hours	0.369	0.288	0.201	1.446	0.822-2.544
≥5 hours	1.238	0.285	0.000	3.447	1.972-6.025
The place of the smartphone in your life (Reference: Even if not)					
Assistant	0.218	0.630	0.729	1.244	0.362-4.279
Indispensable	1.665	0.617	0.007	5.284	1.578-17.692
Regular physical exercise(Reference: Yes)					
No	0.430	0.199	0.030	1.537	1.042-2.269
Type of personality (Reference: Emotional Stability)					
Extraversion	0.220	0.368	0.550	1.246	0.605-2.564
Openness to Experience	0.337	0.373	0.367	1.400	0.673-2.911
Conscientiousness	0.697	0.363	0.055	2.007	0.985-4.091
Agreeableness	0.569	0.365	0.119	1.766	0.864-3.612
Constant	-4.730	0.730	0.000	-	-

SE[a]: Standard error, OR[b]: Odd's ratio, CI[c]: Confidence interval

Discussion: In 2012, the word phubbing appeared in the Macquarie Dictionary. This word was produced by the synthesis of the words "phone" and "snubbing"[9]. There are studies reporting prevalence of phubbing, which is one of today's new social and health problems. A study from India reports the prevalence of phubbing in adolescents and young people as 49.3%[10]. Phubbing prevalence was reported in Croatian university students, 50% in men and 54% in women. In the same study, it was reported that boys had more internet addiction and girls had cell phone addiction[11]. In this study, the prevalence of phubbing was found to be 12.7%. Compared to other studies, this prevalence value is quite low. The reason for this may be that the study group consists of students of medical faculties who study more and have less free time.

In our study, no difference was found between the age groups in terms of phubbing prevalence ($p > 0.05$). Due to study in medical specialty exam, 4-6. Class students were expected to move away from the internet and mobile phones. For this reason, the prevalence of phubbing could decrease in older ages. However, there was no difference between the classes of the medical faculty ($p > 0.05$). A study reporting similar results was not found in the literature.

It was found that the prevalence of phubbing in women in the study group was higher than that of men. In the Logistic Regression Analysis, the relationship between phubbing and gender disappeared ($p > 0.05$). Another study that supports our study result was carried out on 402 university students in Ukraine. The Ukrainian sample explains that the effect of gender on phubbing is indirect: There is a relationship between phubbing and depression. In this relationship, loneliness is the mediator. Loneliness, which is observed with high frequency in men, increases the mediating role of phubbing, which turns into more pronounced depression. This mediation effect is weaker in girls[12].

A study in the US provides the following information: phubbing in parents is related to the depression of adolescents. Additionally, phubbing in adolescents is related to parent phubbing[13]. This information made us think that there might be a relationship between the family structure and the socioeconomic status of the family and phubbing in our study group which includes university youth. However, no relation was found between the family type and family income status of students and the prevalence of phubbing in the study group (for each one $p>0.05$). The high number of children in the family indicates low socioeconomic level. Therefore, the number of siblings was questioned. However, no relation was found between the number of siblings and phubbing ($p > 0.05$). This result supports that no relationship between socioeconomic status and phubbing in our study group.

In the study, it was found that the frequency of phubbing was higher in the students who remained somewhere outside the family than the ones who stayed with the family ($p <0.05$). This result indicates the relationship between young people's feeling of loneliness and phubbing. A study on Polish young people showed that young people who experience loneliness have low self-esteem and are prone to phubbing and facebook intrusion[14].

In our study, the prevalence of phubbing was found to be higher among students with smoking and alcohol addiction ($p>0.05$ for each). As a result of the Logistic Regression Analysis, smoking was found to be a risk factor for phubbing (OR: 1.548; $p <0.05$), (Table 4). Alcohol consumption was eliminated in the logistics model ($p>0.05$). Combating tobacco and tobacco products is one of the basic works of preventive health services for young people. Unfortunately, smoking is a tool to prove that it is an adult who can take responsibility. In addition, young people tend to smoke because of their social problems and anxiety. For this reason, phubbing can be expected in frequent smokers. No studies directly related to the relationship between phubbing and smoking were found. However, in many studies, it has been reported that there is a relationship between internet addiction or mobile phone addiction and smoking[15,16]. In a study conducted in medical students in Saudi Arabia, it was reported that there was no relationship between smartphone addiction and smoking[17].

Especially in adolescents, obesity is known to decrease self-esteem and cause problems in social reletionsips[18]. Therefore, it was thought that there might be a relationship between phubbing and obesity. However, there was no difference in the prevalence of phubbing between those who were overweight/ obese and the others in the study group ($p>0.05$). In a study conducted by medical students in Saudi Arabia, it was reported that there was no relationship between obesity and mobile phone addiction[17]. A study from Turkey to investigate the relationship between internet addiction and obesity, which realized among adolescents aged 11-18, and it is no relationship has been reported[19].

In this study, good relationships with family members and friends and phubbing relationship were not found (for each; $p > 0.05$). However, it expected that the prevalence of phubbing would be high in those who did not have good relationships with family members and friends. A study on adolescents and young in India revealed the relationship between poor social relationships and phubbing[20]. We can reconcile bad social relationships with loneliness. The relationship between phubbing and loneliness was also revealed by David & Roberts[20].

No relation was found between students' age of starting the use the smartphone and the prevalence of phubbing ($p > 0.05$). This may be because students are to have a mobile phone at similar ages, first time.

Some studies on the excessive use of smartphones are talking about lack of sleep and poor sleep quality. Excessive sleep time may be associated with a predisposition to depression[21-23].

However, no study describing the relationship between sleep time and phubbing has been found in the literature. In the study, the prevalence of phubbing was found to be higher in patients with a daily sleep time of 9 hours or more. In the Logistic Regression Analysis, phubbing prevalence was found to be 1.824 times higher in those with a daily sleep time of 9 hours or more ($p < 0.05$), (Table-4).

Phubbing behaviors negatively affect the social development of the individual and disconnect the individual's communication and interaction in social settings. In other words, phubbing appears to focus on the smartphones of individuals rather than attend conversations by being indifferent to the environment[24,25]. In our study, the prevalence of phubbing was found to be 3.447 times higher in the students who use smartphone 5 hours a day or more ($p<0.05$), (Table-4). This result supports the strong relationship between smart phone addiction and phubbing. Another finding that the logistic model gives statistically significant results supports the strong effect of smart phone addiction on phubbing behavior. This result is as follows: The prevalence of phubbing has been found to be 5.284 times higher in those who report the place of the smartphone as indispensable ($p<0.05$), (Table 4). It was found that the prevalence of phubbing was higher in the students who check the mobile phone 45 or more times a day ($p < 0.05$). However, this variable was eliminated in logistic regression analysis.

There was no difference in terms of prevalence of phubbing between social media members and non-members ($p > 0.05$). The fact that only 10 students do not use social media makes it difficult for us to evaluate.

In our study, the prevalence of phubbing was found to be higher in students who did not exercise regularly. In the Logistic Regression Analysis, it was found that not exercising regularly is a risk factor for phubbing (OR: 1.537), (Table-4). In various studies, it has been proved that regular physical activity is protective from mobile phone and internet addiction. However, internet or mobile phone addiction is also a factor that causes a decrease in physical activity. Internet or mobile phone addiction and physical activity are in reverse interaction[26-30].

One of the aims of this study was to present the relationship between personality structure and phubbing. Therefore, A and B type personality structure was questioned. In addition, 5 personality structures were determined with the Ten-Item Personality Scale. No relation was found between type A and B personality and phubbing ($p > 0.05$). A similar study in which we can compare this result was not found in the literature.

In bivariate analysis, the lowest phubbing prevalence personality structure was found as Emotional Stability ($p < 0.05$), (Table-3). However, the relationship between personality structure and phubbing was eliminated in Logistic Regression Analysis ($p > 0.05$), (Table-4). A study from Turkey, Erzen and colleagues[31] examined the relationship between Big Five Personality Traits and Phubbing. They came to the following conclusion: neuroticism and conscientiousness were significant predictors of phubbing, which account for 7% of the total variance.

Limitations: Limitations include the fact that the study is a cross-sectional study, the inclusion of a single Medical Faculty in the scope of the study, and the absence of objective diagnostic methods.

Conclusion

According the study's results, we can say that phubbing is one of the most common health problem among the medical students. In order to reduce the frequency of phubbing, it will be useful to inform students, parents and teachers about negative results of use of smart phones out of purpose. More comprehensive studies are needed to reveal the relationship between phubbing and personality types.

References

1. Karadag E., Tosuntas Ş.B., Erzen E., Duru P., Bostan N., Mizrak-Sahin B., et al. (2016). Sanal dunyanınkronolojik bagimliligi: Sosyotelizm (phubbing). *Addicta: The Turkish Journal on Addiction*, 3(2), 223-269.

2. Goksun D.O. Adaptation of General Scales of Phubbing and Being Phubbed into Turkish. *Afyon Kocatepe University Journal of Social Sciences*, 21(3), 657-671.

3. Kuyucu, M. (2017). Use of Smart Phone and Problematic of Smart Phone Addiction in Young People: "Smart Phone (Colic)" University Youth. *Global Media Journal TR Edition*, 7(14), 328-359.

4. Kuss D.J. and Griffiths M.D. (2011). Online social networking and addiction-a review of the psychological literature. *International journal of environmental research and public health*, 8(9), 3528-3552.

5. Ucer N. (2016). A Study to Examine University Students' Use of Social Media in the Context of Uses and Gratification Approach. *Global Media Journal: Turkish Edition*, 6(12),1-26.

6. Gosling S.D., Rentfrow P.J. and Swann W.B. Jr. (2003). A very brief measure of the Big Five personality domains. *Journal of Research in Personality*, 37, 504-528.

7. Atak H. (2013). The Turkish Adaptation of the Ten-Item Personality Inventory. *Archives of Neuropsychiatry*, 50 (4), 312-319.

8. Friedman M. (1974). Type A behavior and your heart. Fawcett.

9. Chotpitayasunondh V. and Douglas K.M. (2016). How "phubbing" becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior*, 63, 9-18.

10. Davey S., Davey A., Raghav S.K., Singh J.V., Singh N., Blachnio A. and Przepiórkaa A. (2018). Predictors and consequences of "Phubbing" among adolescents and youth in India: An impact evaluation study. *Journal of family and Community Medicine*, 25(1), 35.

11. Brkljačić T., Šakić V. and Kaliterna-Lipovčan Lj. (2018). Phubbing among Croatian students. In S. NakićRadoš (Ed.), Protection and promotion of the well-being of children, youth, and families. Selected Proceedings of the 1st International Scientific Conference of the Department of Psychology at the Catholic University of Croatia, Zagreb, Croatia: Catholic University of Croatia, 109-126.

12. Ivanova A., Gorbaniuk O., Błachnio A., Przepiórka A., Mraka N., Polishchuk V., Gorbaniuk J. (2020). Mobile Phone Addiction, Phubbing, and Depression among Men and Women: A Moderated Mediation Analysis. *Psychiatric Quarterly*, 1-14.

13. Bai, Q., Lei, L., Hsueh, F.H., Yu, X., Hu, H., Wang, X., and Wang, P. (2020). Parent-adolescent congruence in phubbing and adolescents' depressive symptoms: A moderated polynomial regression with response surface analyses. *Journal of Affective Disorders*.

14. Błachnio A. and Przepiorka A. (2019). Be aware! If you start using Facebook problematically you will feel lonely: Phubbing, loneliness, self-esteem, and Facebook intrusion. A cross-sectional study. *Social Science Computer Review*, 37(2), 270-278.

15. Lee Y.S., Han D.H., Kim S.M. and Renshaw P.F. (2013). Substance abuse precedes internet addiction. *Addictive behaviors*, 38(4), 2022-2025.

16. MatarBoumosleh J. and Jaalouk D. (2017). Depression, anxiety, and smartphone addiction in university students-A cross sectional study. *PLoS one*, 12(8).

17. Alosaimi F.D., Alyahya H., Alshahwan H., Al Mahyijari, N., and Shaik S.A. (2016). Smartphone addiction among university students in Riyadh, Saudi Arabia. *Saudi Medical Journal*, 37(6), 675.

18. Griffiths L.J., Parsons T.J. and Hill A.J. (2010). Self-esteem and quality of life in obese children and adolescents: a systematic review. *International Journal of Pediatric Obesity*, 5(4), 282-304.

19. Meral, G. (2018). Is digital addiction a reason for obesity. *AGE*, 11(18), 14-50.

20. David, M. E., and Roberts, J. A. (2017). Phubbed and alone: Phone snubbing, social exclusion, and attachment to social media. *Journal of the Association for Consumer Research*, *2*(2), 155-163.

21. Acharya, J. P., Acharya, I., and Waghrey, D. (2013). A study on some of the common health effects of cell-phones amongst college students. *Journal of Community Medicine and Health Education*, 3(4), 1-4.

22. Latifa, R., Mumtaz, E.F. and Subchi, I. (2019). Psychological Explanation of Phubbing Behavior: Smartphone Addiction, Emphaty and Self Control. In *2019 7th International Conference on Cyber and IT Service Management (CITSM)*, IEEE, 7, 1-5.

23. Demirci, K., Akgönül, M., and Akpinar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of behavioral addictions*, 4(2), 85-92.

24. Nazir T, Pişkin M (2016). Phubbing: A technological invasion which connected the world but disconnected humans. *Int J Indian Psychol*, 3, 68-76.

25. Yam, F. C., and İlhan, T. (2020). Holistic Technological Addiction of Modern Age: Phubbing. *Current Approaches in Psychiatry / Psikiyatride Guncel Yaklasimlar*, 12(1).

26. Kim S.E., Kim J.W. and Jee Y.S. (2015). Relationship between smartphone addiction and physical activity in Chinese international students in Korea. *Journal of behavioral addictions*, 4(3), 200-205.

27. Choi D. (2015). Physical activity level, sleep quality, attention control and self-regulated learning along to smartphone addiction among college students. *Journal of the Korea Academia-Industrial cooperation Society*, 16(1), 429-437.

28. Kim H. (2013). Exercise rehabilitation for smartphone addiction. *Journal of exercise rehabilitation*, 9(6), 500.

29. Park S. (2014). Associations of physical activity with sleep satisfaction, perceived stress, and problematic Internet use in Korean adolescents. *BMC public health*, 14(1), 1143.

30. Khan M.A., Shabbir F. and Rajput T.A. (2017). Effect of gender and physical activity on internet addiction in medical students. *Pakistan Journal of Medical Sciences*, 33(1), 191.

31. Erzen, E., Odaci, H., and Yeniçeri, İ. (2019). Phubbing: Which personality traits are pronetophubbing?. *Social Science Computer Review*, 0894439319847415.