RELATIONSHIP BETWEEN "NOMOPHOBIA" AND MATERIAL ADDICTION "CIGARETTE" AND FACTORS AFFECTING THEM

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Abstract

Abstract Objective: Since technological devices used for communication affect communication between people, Nomophobia is a disorder of a new age. In this study, we discuss the relationship between nomophobia and smoking addiction and the factors affecting them. Methods: The Demographic Information Form and Nomophobia Scale (NMP-Q), ıf they were smoking we applied the Fagerström Test for Nicotine Dependence (FTND) Scales were directed among students (N = 641) at Süleyman Demirel University studying Medicine, Dental, Nursing, and Physiotherapy departments in the 1st and 4th grades. Mann-Whitney U, Kruskal Wallis test to compare the scores of the variables with more groups. Correlation analysis was performed between the NMP-Q and Fagerström Test for Nicotine Dependence scores by Spearman correlation. Bonferroni test applied as Post Hoc test for multiple comparisons of groups. Results: In our study, 267 (42,6%) of participants who had nomophobia refuse to be dependent and smartphone addiction level was found to be 99.69 for all students.Responses were received from 73,2% (n=469) female and 26,8% (n=172) male participants. There is no significant difference between smokers in terms of factors in nomophobia ($p>0.05$). Total score of the questionnaire ($p<0.01$*) by gender and averages scores of women were higher in all mentioned sub-dimensions and total scores. Conclusions: In our study, there was no correlation between nomophobia and cigarette addiction due to the low number of smokers participating in our survey. Therefore, new conflicts with wider audiences are needed to examine the relationship between these two addictions Keywords: Nomophobia, Smartphone Addiction, Cigarette, Addiction What's Already Known About This Topic? All addictions trigger each other. Here, we examined the effects of these two addictions on each other. 'What does this article add? There are not many studies on the effects of nomophobia and smoking addiction on each other. People should be careful about these two addictions.

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Conclusions: In our study, there was no correlation between nomophobia and cigarette addiction due to the low number of smokers participating in our survey. Therefore, new conflicts with wider audiences are needed to examine the relationship between these two addictions

Keywords: Nomophobia, Smartphone Addiction, Cigarette, Addiction

WHAT'S KNOWN ABOUT THIS TOPIC

The term NOMOPHOBIA or NO MObile PHone PhoBIA is used to describe a psychological condition when people have a fear of being detached from mobile phone connectivity. The term NOMOPHOBIA is constructed on definitions described in the DSM-IV, it has been labelled as a "phobia for a particular/specific things". This is our new worlds disease than we want to learn new thins about this.

WHAT DOES THIS ARTICLE ADD?

All addictions trigger each other and we want to learn the relaton between nomophobia and nicotine addiction becase there are not mch studies about this subject.

1. Introduction

The increasing use of new technologies and the constructive connection involving computers, tablets, and smartphones cause changes in people's daily habits [1]. So such technological infrastructures have become an indispensable part of our lives[2]. Nomophobia is a disease of the new world order and includes fear of not being able to access or communicate with a device such as a computer or smartphone[3]. The term was first mentioned in 2008 when examining the concerns of smartphone users in the UK [4]. Nomophobia is a psychiatric illness like agoraphobia and includes fear of not being reached in emergency access. [5]. As their performance and efficiency increase regularly, problems with smartphones and their negative effects on individuals also increase[6].

In the last decade, many innovations have been added to mobile phones and phones have turned into smartphones.[7].GSM İntelligence (2015) reports that the number of active smart subscriptions overrun the total world population with more than 7.5 billion subscriptions compared to a total population of around 7.2 billion. The numbers show how important these devices in people's lives[8].

Since technological devices used for communication affect communication between people, these relationships must be constantly monitored. These change people's perception of time, space and reality, and their communication with the earth [9]. Nowadays, smartphones offer many possibilities to their users, anytime and anywhere, such as playing some games, calling, messaging, using social networks, taking videos/photos, surfing the internet. It is at the forefront of technological devices that will create behavioral addiction. Although their professional and social favors, overuse of smartphones may be caused to psycho-social problems such as nervousness, increased distress level, depressive symptoms, social isolation, and decreased academic and professional success [10]. It provokes anxiety for a variety of reasons such as loss of smartphones and running out of charge. Sometimes they take multiple smartphones along with a battery charger to avoid the experimentation of being disconnected from the virtual world. A previous study shows that nearly half of people never switched off the phone [11]. Studies have shown that nomophobia is more frequently observed in the presence of an underlying psychiatric disease or vice versa [12 13].

Pathological gambling and substance addictions have neurobiological common etiopathogenesis suggest that they may use the same behavioral addiction mechanisms in compulsive shopping, excessive internet use-addiction, and compulsive sexual behavior. Kandel noted that the neural mechanisms of pleasure are not well known, but these are probably related to the enhancement of reward and learned behavior in the brain. The fact that dopaminergic neurons, which extend from the ventral tegmental area to the mesolimbic and mesocortical areas, can be activated by many psychoactive substances, strengthens the role of dopaminergic neurons in reward-dependence systems. When dopamine is released into the synaptic range, it can stimulate many dopaminergic receptors (D1, D5), causing the feeling of stress to decrease and the person to feel better [14].

Although there is no place for internet addiction in the fifth edition of the Diagnostic and Census Manual of the Mental Disorders (DSM-5), there is an internet game addiction subject that is planned to be classified in the future. Recently, nomophobia is suggested to be included in the Mentally Disabled Handbook, as it causes anxiety in individuals [3].

Our aim in the study; to reveal the relationship between smoking addiction level and severity of Nomophobia and the factors affecting it.

2. Materials and Methods

2.1 Research Design

The study was conducted between September 2019 and January 2020. The protocol was approved by the Ethical Committee of the Süleyman Demirel University with the date 25/06/2019 and number 194.

In the study, a questionnaire method was used to determine the differences among university student groups in terms of nomophobia and cigarette addiction according to different variables. The survey model is a kind of approach that aims to explain a situation with its current facts and the purpose of this model is to explain the current situation related to the research subject.

2.2 Study Group

This descriptive study is a correlational study modifying a correlational survey model, a kind of approach that aims to describe a situation with its current facts. These surveys were directed among students (N = 641) at Süleyman Demirel University studying Medicine, Dental, Nursing, and Physiotherapy departments in the 1st and 4th grades. Volunteering was taken as a basis for participating in the study. Incomplete surveys were excluded.

2.3 Data Collection Tools

The Demographic Information Form

We used a questionnaire consisted of three parts. The first part consisted of 11 questions, 4 of them are sociodemographic characteristics like age, gender, year of study, faculty, then about smartphone addiction, there were 7 questions with 5 points Likert scale and they were shown at Figure 1.

Figure 1: Second part of Questions

After these questions we asked "How many hours in a day do you play on the phone?" and Second part contains the Nomophobia Questionnaire (NMP-Q) and we asked "Do you use cigarettes?" than if "Yes" is said the third part contains Fagerström Test for Nicotine Dependence with Turkish validity reliability was used these participants[15].

Nomophobia Scale (NMP-Q): This scale was developed by Yildirim and Correia (2015) and adapted to Turkish by Yildirim et al (2016)[2]. It is a 7-point Likert-Type scale consisting of 20 items in total. The

Cronbach's Alpha reliability coefficient of the original Nomophobia Scale was .95, and Turkish Version's Cronbach's alpha reliability coefficient of the questionnaire is .92, indicating that the questionnaire has good internal consistency[16]. To assess the internal consistency of the items under each factor, Cronbach's alpha was calculated one by one for every factor; Factor I – Not being able to communicate – (6 items), Factor II – Losing connectedness – (5 items), Factor III – Not being able to access information – (4 items) and Factor IV – Giving up convenience– (5 items) were .94, .87, .83, and .81, respectively [2]. Minimum value of .7 were commonly accepted [17], which is indicative of good internal consistency. NMP-Q scores of 20 demonstrating the absence of nomophobia; Indicates mild-level nomophobia from 20 to 60; 60-100 indicates moderate level of nomophobia; and an NMP-Q score greater than or equal to 100 corresponding to a severe nomophobia [2].

Fagerström Test for Nicotine Dependence (FTND): The Turkish version of and Fagerström Test for Nicotine Dependence (FTND) had moderate reliability (Cronbach alpha: 0.56). [15] was used. The Fagerström Test consists of 6 items and the total score is 10. Questions requiring an answer yes/no are scored from 0 to 1, whereas multiple-choice items are scored from 0 to 3. The total scores of the items are between 0-10. Total Fagerström score evaluates the intensity of physical nicotine addiction: low dependence (0 to 2 points), medium dependence (3 to 4 points), high dependence (5 to 6 points) and very high dependence (7 to 10 points). 6 points considered cut-off to assess high nicotine addiction [18].

2.4 Statistical Analyses

All statistical analyses were performed using SPSS Statistics software version 22.0.0 (IBM Corp). Demographics were presented as mean ± standard deviation for continuous variables and frequencies (percentages) for categorical variables, respectively. Categorical variables were analyzed by the chi-square test. A value of $p<0.05$ was examined significantly.

'Single Sample Kolmogorov Smirnov' was used to test whether or not the study data had a consistent normal distribution. Since the data were not found to be normally distributed, the Mann Whitney U-test, a nonparametric test, was used to compare the scores of the variables with the two groups, or the Kruskal Wallis test to compare the scores of the variables with more groups. Correlation analysis was performed between the NMP-Q and Fagerström Test for Nicotine Dependence scores by Spearman correlation. Bonferroni test applied as Post Hoc test for multiple comparisons of groups.

3. Results

The study included 641 participants. Responses were received from 73,2% (n=469) female and 26,8% (n=172) male participants [Table/Fig-1]. The mean age for the participants was 20,55 ± 1,96 years (range, 17-31). The other demographic information of the sample can be seen in Table 1.

Table 1 . Socio-demographic characteristics of the participants

In terms of sub-dimensions of the questionnaire, the highest average scores were obtained for "Not Being Able to Communicate" (27,70 ± 0,380), "Losing Connectedness" (19,09 ± 0,301) and "Not Being Able to Access Information" (15,15 ± 0,246) and followed by "Fear of Feeling not Comfortable" (14,66 ± 0,258).

Gender Effect

When factors of the nomophobia scale are evaluated, total points and the factors that differ significantly by gender are in the table below. As you see in term of sub-dimensions of the questionnaire there was a significiantly difference between using hours in a day ($p<0.01$*), and descriptively we found about average smartphone use, 282 (44%) participants usually spent 1-3 hours, 297 (46,3 %) participants spent 4-6 hours, 42 (6,6%) spent 7-9 hours and 20 (3,1%) spent 10 hours or more in a day. "Losing Connectedness" ($p=0,018$*) and "Not Being Able to Communicate" ($p<0.01$*) and total score of the questionnaire ($p<0.01$*) by gender and averages scores of women were higher in all mentioned sub-dimensions and total scores.

Table 2 . Means, Standard Deviations of Nomophobia Scores, and Mann Whitney U test results by Gender.

Age Effect

The participants' ages were between 17-31. 428 participants were between the ages of 19-25. To examine nomophobia level differences concerning age, The Kruskal Wallis was used. It is found that there is no significant difference in nomophobia levels, Fargerström results and sub-dimensions of nomophobia scale of students according to their age ($p>0.05$).

Table 3 . Age Distributions in The Study

Department Effect

To examine using hours differences about departments, The Kruskal Wallis was used. There was a statistically significant difference between the departments in terms of phone usage hours **($p<0.001$*).**Then we made pairwise comparisons to see which department differs from the other one. Using hours in a day was significantly higher in Medicine grade 4 students compared with Physiotherapy grade 1**($p<0.05$*),** nursery grade 4**($p<0.01$*),** and 1 **($p<0.01$*)**students. On the other hand, we found that dentist grade 4 and medicine grade 4 students' mean score of using hours in a day was significantly different from nursery grade 1 and 4 **(all p values were <0.01*).**

Table 4. Means and standard deviations of the departments' using hours

There is no significant difference between the departments in terms of nomophobia dependency level, sub-dimensions of nomophobia scale, fargerström nicotine dependency questionnaire scores ($p>0.05$).

Relationship between Nomophobia Scale and Fargerström Nicotine Dependency Questionnaire

Table 5 . Addiction Levels of Smoking and Nomophobia

There is no difference between nomophobia and smoking addiction scores according to Spearmen correlation ($p>0.05$). The numbers of participants who were addicted to the smartphone and smoking are at the table below. 94 participants had both of them.

The lowest and highest scores, arithmetic mean, and standard deviation scores of the scales were calculated on the data that were obtained to determine the level of smartphone addiction and the nomophobia of the participants, and the findings are presented in Table 6and 7.

Table 6 . Means and standard deviations of the Fagerström Test for Nicotine Dependence (FTND)

Table 7 . Means and standard deviations of the Nomophobia scales and sub-dimensions

The average age of the participants who smoke is 23.38 ± 1.88 and the number is 94. The addiction score average is 2.83 ± 2.67. 64.9% of these scores are between 0 and 3. In general, we can talk about the low level of addiction to the group. In other words, the dependency level of 53.2% is very light ($n = 50$).

There is no significant difference between smokers in terms of factors in nomophobia ($p>0.05$). There is no significant difference between the sections in terms of nomophobia scale sub-dimensions and nomophobia total scores ($p>0.05$).

Table 8 . Numbers of participants who were thinking that they were addicted to the phone and the nomophobia scale scores.

265 participants were addicted from mild to nomophobia, even though they did not think they were phone addicts. This shows us how dangerous addiction nomophobia is.

Table 9 . Nomophobia and Fargerström Addiction Levels

4. Conclusions and Discussion

In this study, the relationship between the Fargerström Nicotine Dependency Questionnaire and the prevalence of nomophobia among university students was examined.

Due to the excessive use of technology, a new way of interaction has emerged between people. Nomophobia is also a problem of the new age due to anxiety and stress that arise in its absence.[19,20].

In our study, only 0.03 % of the participants did not have nomophobia. This finding indicates that 99.97 % (mild: 25%, moderate: 59%, severe: 16%) of the participating Turkish university students were with nomophobia. This result is essentially higher than the results that have been reported in past studies [21-23]

In our study, we found female predomination that contradicted a study by Dixit et al. 2010. Our study included 641 participants. Responses were received from 73,2% (n=469) female and 26,8% (n=172) male participants. The predomination was the same as Ahmed and Sohel 2019, Arpaci et al. 2017, Gezgin et al. 2016, Ozdemir et al. 2018, Özaslan 2019 [24,25,26,27,28]. The results of the study showed a statistical difference between males and females in terms of nomophobia levels (p=0,003*). Many studies are supporting this claim and stating that females tend to be more nomophobic than males Research showed that 17,2 % (n = 81) of the female and 12,2 % (n=21) of the male had severe nomophobia. 59.9 % (n =281) of the female and 55,2 % (n=95) of the male had moderate nomophobia and 22,6 % (n = 106) of the female also 32,9 % (n=55) of the male had mild nomophobia and one (0.005 %) person of the female and (0.002 %) of the male had no nomophobia. When the results of the study were analyzed in terms of gender, findings on nomophobia levels of university students indicate those female students had more nomophobia compared to male students. There are many studies supporting this claim [22,28-30]. Differently some studies and reports put forward that there is no significant difference in terms of gender [23,31-33] and males had more nomophobia [25]

In a study conducted with young adults, nomophobia was observed with a rate of 77% in young people between the ages of 18-24, while this rate decreased to 68% between the ages of 25-34 and nomophobia further decreased over the age of 55 [2]. In another study 83% of adults with smartphones are 18-29 years old, 74% are 30-49 years old, 49% are 50-64 years old, and 19% are 65 years old or older. In our study, the participants' ages were between 17-31. 428 (%66,7) participants were between the ages of 19-25. The mean age of participants was 20.55±1,96. The ages were similar to the studies done by Choi et al, Krajewska et al. 2012, Dixit et al.[32,33,34,35]

According to the medians of Nomophobia questionnaire sub-dimensions "not being able to communicate" was the highest score (27,70±9,61), then "losing connectedness" was the second (19,09±7,63), the third one was "not being able to access information" (15,15±6,23) and the last one was "giving up convenience" (14,66±6,53). Yıldırım and Correlia's study also announced that "not being able to access information", and "losing Connectedness" factors Adnan and Gezgin (2016) found same factors are higher among students while compared with Yıldırım and Correlia (2015) but it was different from our study about "not being able to access information" [2,31]. Also in our study, there was a significant gender difference in nomophobia sub-dimensions "Losing connectedness" (p=0.018*) and "not being able to communicate" (p<0.01*). Females had higher levels of nomophobia than men in these two sub-dimensions. Dalbudak et al. Supporting this claim [36].

In the manner of the age effect, there were no significant differences in nomophobia levels, sub-dimensions and fargerström scores ($p > 0.05$). This was because the participants were similarly at the same ages. Like the nomophobia scores of university students in Dalbudak et al. (2020), Öz and Tortop's (2018), Adnan and Gezgin (2016), Yıldırım et al. (2015) study there was no significant difference about age factor [2,31,36,37]. Controversially Erdem et al. (2017) [38], found a significant relationship between age and nomophobia. Bianchi and Philips (2005) concluded that nomophobia was seen as more common in young people [39].

Looking at the overall scale, it was seen that the department did not affect the nomophobia dependency level, sub-dimensions of nomophobia scale and fargerström nicotine dependency questionnaire scores ($p > 0.05$) but there was a significant difference between the departments in terms of phone usage hours (p<0.01*). Dalbudak et al. found that 129 (31.6%) participants' daily phone using time was between 1–3 hours, 215 (52.7%) 4–6 hours, 52 (12.7%) 7–9 hours and 12 (3.0%) 10 hours or more[36]. When asked for the majority of the total time spent using smartphones in our study 282 (44%) responded similarly with another study that they use a smartphone for 1-3 hours per day followed by 297 (46,3 %) who used it for only 4-6 hours whereas

42 (6,6%) used it for 7-9 hours and 20 (3,1%) used for more than 10 hours or more in a day. According to another research; students' smartphone usage time is concentrated in the range of 2-6 hours a day. Also, it was seen that the average of smartphone addiction overuse is quite high in this research. [40]. They all are students and by departments Medicine Grade 4 students spent much more time than physiotherapy grade 1 and nursery grade 4 students. On the other hand, we found that dentist grade 4 and medicine grade 4 spent much more time with smartphone than nursery grade 1 and 4. In fact, as the years of all students increase, phone usage times are shortened. We can say that as the faculty years increase, the lessons get heavier, so the students can spend less time on the phone. However, in nursing students, there is a significant difference in statistical studies with other students, as the average phone using hours are higher than other faculties.

There is no difference between Nomophobia and Fargerström Nicotine Dependency Questionnaire scores according to spearmen correlation ($p>0.05$). This may be because a very low proportion of the participants in our study are smoking. An important problem of nomophobia is comorbidity like behavioral addiction disorders (including smart and/or Internet dependence, online gaming, compulsive shopping) and personality disorders (borderline, above all)[41]. So we wanted to see if these two addictions affect each other but there is no correlation. There were some other studies like Miedziński et al. found that approximately all participants were assured that it was possible to be addicted to smoking, drinking alcohol, using drugs, computers/the Internet, and smartphone. The coexistence of different addictions was found in 34% of the participants [42]. Therefore it is necessary to make sure that there is no more serious underlying disease in such addictions [12]. In our study, 267 (42,6%) of participants who had nomophobia refuse to be dependent and smartphone addiction level was found to be 99.69 for all students. This means that you cannot assume that you are dependent on your smartphone. They said that the uninterrupted accessibility provided by smartphones, the phone addiction of the young people who have survived the time and space limitation has also increased[43]. Adolescents are incapable of being addicted to the rich content of their smartphones because their self-control is not mature [44]. Since this addiction is not noticed, it can progress quickly and cause us to become lonely in social life, so be careful. Also, those with other addictions and psychiatric illnesses may be at greater risk for this problem, so they should be more careful.

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Figure 1 :Second part of Questions

QUESTIONS	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Phone addiction is a disease. 2. I think I'm addicted to the phone. 3. I spend most of my time playing games on the phone. 4. I can stop playing games. 5. I'm a successful student.					

Table 1 . Socio-demographic characteristics of the participants

Demographics		Mean ± SD
Age		20,55 ± 1,96
Gender	**N**	**%**
Female	469	73,2
Male	172	26,8
Departments		
Medicine 1	97	15.1
Medicine 4	85	13,3
Dentist 1	76	11,9
Dentist 4	47	7,3
Nursery 1	116	18,1
Nursery 4	82	12,8
Physiotherapy 1	82	12,8
Physiotherapy 4	56	8,7
TOTAL	**641**	**100**

Table 2 . Means, Standard Deviations of Nomophobia Scores, and Mann Whitney U test results by Gender.

	GENDER	N	MEAN ± SD	Range	P
Using Hours in A Day	Female	469	4,26 ± 2,01	—-	**<0,01***
	Male	172	3,51 ± 2,03		
Not Being Able to Access Information	Female	469	15,25 ± 6,17	4-28	0,367
	Male	172	14,85 ± 6,40		
Losing Connectedness	Female	469	19,55 ± 7,49	5-35	**0,018***
	Male	172	17,85 ± 7,90		
Not Being Able to Communicate	Female	469	28,86 ± 9,29	6-42	**<0,01***
	Male	*172*	24,56 ± 9,79		
Giving Up Convenience	Female	469	14,84 ± 6,46	5-35	0,169

	GENDER	N	MEAN ± SD	Range	P
	Male	*172*	14,16 ± 6,71		
Total Point	Female	469	78,10 ± 22,91		**0,003***
	Male	172	71,53 ± 24,78		
TOTAL		**641**			

Table 3 . Age Distributions in The Study

AGE	FREQUENCY	PERCENT
17	1	0,2
18	73	11,4
19	148	23,1
20	103	16,1
21	102	15,9
22	127	19,8
23	61	9,5
24	14	2,2
25	6	0,9
26	2	0,3
27	2	0,3
28	1	0,2
31	1	0,2

Table 4. Means and standard deviations of the departments' using hours

Department	Mean (SD)
Medicine 1	3,66±1,86
Medicine 4	3,21±1,60
Dentist 1	3,84±1,61
Dentist 4	3,40±1,70
Nursery 1	4,91±2,25
Nursery 4	4,67±1,98
Physiotherapy 1	4,26±2,36
Physiotherapy 4	3,93±2,03
Total	4,06±2,04

Table 5 . Addiction Levels of Smoking and Nomophobia

	No Addiction	Light	Medium	Advanced	Very Advanced	TOTAL
Smoking Addiction	**547 (%85,3)**	50 (%7,8)	19 (%3)	15 (%2,3)	10 (%1,6)	**94 (%14,7)**
Smartphone Addiction	2 (%0,3)	161 (%25,1)	376 (%58,7)	102 (%15,9)	——	639

Table 6 . Means and standard deviations of the Fagerström Test for Nicotine Dependence (FTND)

	N (%)	**X**	SD	Min	Max
Fagerström Test for Nicotine Dependence (FTND)	94 (% 14,7)	2,83	2,67	0	10

Table 7 . Means and standard deviations of the Nomophobia scales and sub-dimensions

	N (%)	**X**	SD	Min	Max
Nomophobia Scale and Sub-Dimensions	639 (%99,7)	76,34	23,59	20	140

Table 8 . Numbers of participants who were thinking that they were addicted to the phone and the nomophobia scale scores.

		Nomophobia Addiction Level	Nomophobia Addiction Level	Nomophobia Addiction Level	Nomophobia Addiction Level	
		No nomophobia	**Mild**	**Moderate**	**Severe**	**TOTAL**
I think I'm addicted to the phone	**Strongly Disagree**	2	32	26	7	**67**
	Disagree	0	71	108	21	**200**
	Neutral	0	38	120	27	**185**
	Agree	0	17	99	32	**148**
	Strongly Agree	0	3	23	15	**41**
	TOTAL	2	161	376	102	641

Table 9 . Nomophobia and Fargerström Addiction Levels

		Fargerström Dependency Levels	Fargerström Dependency Levels	Fargerström Dependency Levels	Fargerström Dependency Levels	Total
		Light	Medium	Advanced	Very Advanced	
Nomophobia Dependency Levels	No nomophobia	1 (%1,1)	0 (%0)	0 (%0)	0 (%0)	1 (%1,1)
	Mild	17 (%18,1)	5 (%5,3)	4 (%4,3)	1 (%1,1)	27 (%28,7)
	Moderate	22 (%23,4)	10 (%10,6)	11 (%11,7)	6 (%6,4)	49 (%52,1)
	Severe	10 (%10,6)	4 (%4,3)	0 (%0)	3 (%3,2)	17 (%18,1)
	TOTAL	50 (%53,2)	19 (%9,6)	15 (%10,6)	10 (%6,4)	94 (%100)