



# Nomophobia: Clinical and Demographic Profile of Social Network Excessive Users

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## Abstract

**Introduction:** The new technologies-computer, internet, cell phone (CIC)-and the daily interactivity of the individuals, have produced significant changes in the clinical, cognitive-behavioral, social, professional and environmental aspects which need to be analyzed constantly. The nomophobia [1] has to do with the dependence on technology. Are the symptoms of anxiety, distress and discomfort, among others that the pathological dependent technologies tend to feel when they can't be connected.

**Objective:** Our focus intends to define the psychopathological and social demographic profile of the daily abusive users of the CIC, as well as to point out the difference between pathological dependent individuals of the CIC.

**Methods:** A descriptive and quantitative study taken into effect for 18 months, using specific instruments, evaluated 113 volunteers showing an abusive daily use of CIC, there being 72 individuals with an associated disorder and 41 individuals of the control group showing no disorders. For both groups, we offered orientation for a conscious use of the technologies as well as medical and psychological treatments.

**Results:** we were able to trace the profile of the men and women of the "Disorder Group", in relation to the abusive use of the CIC technologies. The most abusive daily users of these technologies were the women (69%) ranging from 18 to 29 years of age. The psychopathologic profile revealed that within the mental disorders researched, the generalized anxiety disorder (85%), following it, panic (51%), agoraphobia (49%), depression (43%), social phobia (15%), obsessive compulsive disorder (13%), post-traumatic stress (6%) and anorexia (1%).

**Conclusion:** We can conclude that there is a relationship between the psychiatric disorders with the abusive use of technologies.

**Keywords:** Dependence; Technology; Nomophobia; Disorder; Treatment; Addiction; Emotions

## Introduction

The progress of the new technologies [1] and the daily interactivity in the lives of the individuals using computer, Internet, social nets and cell phone (CIC), has caused a monumental alteration on life, customs, habits and behavior that should not be out of our observation due to the physical and emotional impacts related to the quality of life that have been produced starting under this context. Due to this new form of expression and communication, several changes-clinical, cognitive-behavioural, social, professional and environmental, are being analyzed [1]. The nomophobia has to do with the dependence on technology. Are the symptoms of anxiety, distress, and discomfort, among others that the pathological dependent technologies tend to feel when they can't be connected.

In general technologies do not stop to develop and get better, thus interacting constantly with the individuals' lives [2], besides improving so fast that they are never prepared to absorb or to follow these evolutions with the same versatility [2].

No other phenomenon has impacted so much in the lives of the individuals, or on the society [3], than the daily presence of the CIC. The life that separated the house tasks from the ones at work, and the day off from the leisure, does not exist anymore. Today, with such technologies in our hands, the environments are totally mixed, the limits clearly established are now totally broken. As a result, one can see not only the positive effects, but the negative ones as well in the lives of most people [3].

Today, we can see in the doctors and psychologists offices a new demand of patients presenting specific characteristics, such as the "technological dependents", that also need treatment. Nevertheless, we do not have as yet a traced profile related to this population, in order to define an efficient model for treatment, preparing us as professionals of the Mental Health segment for this type of consultation.

At this moment, this fundamental and unheard-of study had as its objective to define the psychopathological and social demographic profile of the CIC abusive daily users; more than that, to differentiate the pathological CIC dependent individuals-which are those that may have any type of primary associated disorder (anxiety, panic, compulsion, social phobia, among others), from the also abusive CIC users which are considered "normal", even making excessive use of

those technologies, it does not matter if for relaxation or working reasons. We hope to contribute to the development of the specific scientific theory and to ameliorate the medical care of the individuals depending of such technologies.

## Methods

Looking for the learning of conditions that would allow us to develop the work of tracing the psychopathological and social demographic profile of the volunteers presenting abusive use of the Technologies of the CIC and to obtain interviews and medical/psychological attendance, the Delete-Detox digital Group and conscious use of these Technologies [4] was created by the first author of this article in order to absorb this new demand of patients that emerged at the ambulatory, the so called “dependents of technologies”.

Nomophobia is the phobias caused by discomfort, anxiety, anguish, among other symptoms, resulting from the impossibility of dependents (CIC) remain connected.

We gathered a group of professionals of the Mental Health sector in order to form a crew and therefore we institutionalized the University’s group Delete. From this moment on it was inaugurated a pioneer and unheard-of space in Brazil for the accomplishment of this specific type of care.

The “Delete-Conscious use of Technologies’ Group” is fully functioning nowadays, and receives, directs and evaluates the abusive daily users of technologies, thus offering free of charge medical and psychological cares.

This study rose from the need of the doctors and psychologists to trace a profile of the daily abusive users of the CIC Technologies, coming to know who they were, if there were more men or women and establish their psychopathological and socio-demographic characteristics, getting to understand if the use was for relaxation or work on the considered “normal” patients, or if the abusive use had any relation with some associated mental disorders [5] that could eventually cause a dependence [5].

The target group for this study was the volunteers showing a daily abusive use of the CIC. The sample was composed of 113 people of both sexes in accordance to the determined criteria for such analysis. Among them, students, workers, house wives and others, are ranging from 16 to 65 years of age, who had begun to feel some interference or complications in their personal, social, familial or professional lives, bringing damages to their quality of life. There were 72 volunteers enclosed in the “Disorder Group” (linked to any kind of associated disorder) and 41 volunteers of the “Control Group”, showing no disorders.

The volunteers looked for this service after reading about and seeing ads concerning it in the newspapers, magazines, and articles and influenced by the “mouth to mouth” commentaries. Arriving under an at random manner, they were submitted to a selection made by a psychologist in order to answer to a load of tests. After that, they were sent for a psychiatric evaluation. This way, it was possible to classify if the excessive use of those Technologies was for relaxation or working (normal) proposal, or if it was related to some mental disorder (pathological use).

When there was a relation configured with any mental disorder, it was offered a free of charge medical and psychological help and follow up. As the original disorder was treated, it was also observed a

reduction of the symptoms and of the alterations of the negative behaviours linked to the dependence of the technologies. In both cases, the normal and the pathological ones, everyone received orientation, information’s, classes on digital social behavior and suggestions for a conscious use of the Technologies.

The present descriptive and quantitative study has, as its goal, to define the psychopathological and social demographic profile of the abusive daily users of CIC and to contribute with scientific data to the creation and development of the scientific theory. The specific objective was to differentiate the CIC dependent individuals with primary disorders (anxiety, panic, compulsion, social phobia, etc.) from the abusive users that used them just for relaxation and/or working reasons. To justify the formation of such groups we considered it fundamental to trace their profiles in order to plan new treatment strategies and to evaluate the impacts and influences of the technologies on the human behavior. We work with the hypothesis that the individuals with abusive use of the technologies do CIC and some disorder of anxiety associated to it, will present pathological dependence of the referred technologies with a larger prevalence and severity level than in the group of individuals without association with any mental disorders.

The Delete-Detox digital and conscious use of technologies Group counts with all technical, professional and logistics infrastructure needed for the concretization of their scientific research. We have several classes available to work with the volunteers and the IT rooms for the use of the members of the crew and researchers.

## Inclusion Criteria

All volunteers should present an abusive daily use of the CIC technologies and achieve a score higher than 50 in the scale of the Internet Addiction Test 10, which means the beginning of some interference in the personal social, familial or professional life of the individual.

All the individuals that felt incapable to control the number of hours of use of the computer or that felt “attached” to the cell phone, with a tendency to feel sadness, anxiety or any unease sensation when not online or not holding the cell phone, were included in the study.

## Exclusion Criteria

The exclusion criteria wrote down the illiterates or those presenting some clinic severe comorbidity that could impede the normal course of the interview. And also all those that presented any significant ethic or clinic reason that would not allow them to participate of the research.

## Instruments

The instruments of evaluation used were the M.I.N.I. (DSM IV) 5, which is a neuropsychiatric diagnostic patterned interview (Version 5.0.0), of a fast applicability (about 15 min), which explores the main psychiatric disorders of the Axe I of the DSM IV.

We also made use of the Hamilton scales (anxiety [6] and depression [7]), the Liebowitz [8] scale for the social phobia disorder (SPD), the panic and the agoraphobia [9]. We have also applied a validated and reliable test to evaluate the dependence of the Internet, the “Internet Addiction Test (IAT)” [10] and version in Portuguese. The IAT was developed by Dr. Kimberly Young [10] and is a

questionnaire of 20 items that measures the light, moderate and severe levels of dependence of the Internet [10].

The crew of the Delete-Conscious use of the Technologies Group [4] also elaborated a questionnaire that was applied to the volunteers with 33 questions upon the everyday use of the cell phone, from an extensive research related to the subject. This questionnaire embraced the social demographic data, daily routine, dependence of the mobile phone and possible symptoms or emotions of the individual, referring to the use of the mobile phone or to its absence.

Other instrument used was the Facebook Scale of Dependence [11], that is basically the scale created in 2011 by the researcher Cecilie Schou Andreassen, at the University of Bergen, Norway.

## Analysis

With the application of the M.I.N.I. (DSM IV) [5] Inventory it was possible to determine the mental state of the studied individuals and the finding or not, of the mental disorders of the volunteers. From the results obtained with the usage of such instruments (scales and questionnaires), we were able to trace the psychopathologic and social demographic profile of the volunteers, to verify their symptoms in several aspects and in the situation in which they had occurred, the type of abusive use of the CIC-if “normal” or pathologic-and to plan the strategies for the medical and psychological cares. From the analysis of the data collected we also noticed the benefits and damages caused, related to the abusive use of the CIC technologies in the daily lives of the individuals.

The questionnaires related to the Internet, social networks and cell phone contacts drew a general panorama related to the routine of use, time and interferences in the daily life of the individual, on the behavior and on the personal, social, professional and familial interactions.

All collected information's obtained via the used researching tools and composed by studied volunteers were inserted in a “Data Bank” created with the help of the Excel program. The Spread sheet [1] (Disorder Group) showed 72 CIC's abusive use volunteers bearing associated mental disorders, and the Spread sheet [2], (Control Group) showed 41 CIC's abusive users, considered “normal” for using such technologies only for relaxation and working situations. Right after, we made a statistical analysis, referring to elaborated issues and focusing on the results, conclusions and limits of the study.

Three tests were used in the studies: the Chi-square tests (Figures), the T-Test for independent samples (comparisons of averages) and the Correlations of Spearman. We opted for the correlations not parametrical in the cases of panic disorders, for the variable was dichotomist. The tests of “homoscedasticity” (or data homogeneity) were enclosed in the T test.

## Procedures

All volunteers, which subscribed the list of inclusion criteria, were considered apt to participate in the research, and those that after the investigation were diagnosed with any type of mental disorder [5] by the psychiatrists of the crew, will receive indication for a treatment prescribing medicine and/or cognitive-behavioral therapy (CBT) [12], in the same place where the research was made.

The studied volunteers were informed of all procedures taken on the research made, and after confirming their participation, they were

written down for the evaluation, signing the “Term of Free and Explained Consent”, in accordance with the Ethical Committee for Research (ECR) [13] of the Institute of Psychiatry (IPUB), of the Federal University of Rio de Janeiro (UFRJ), that is in accordance with the Helsinki's Declaration (1964).

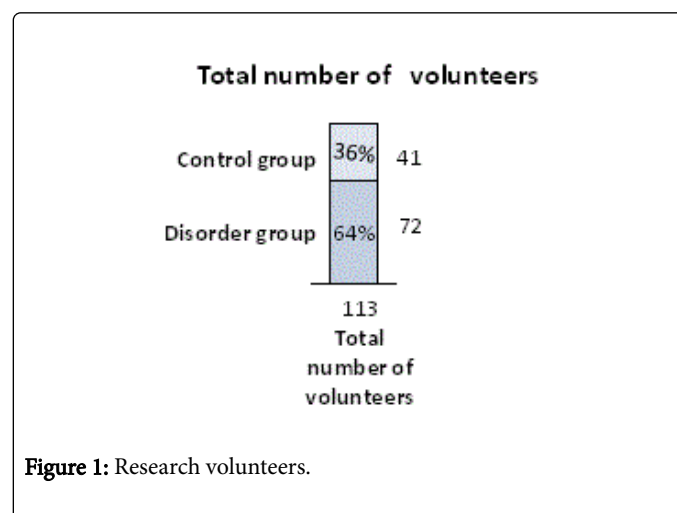
The volunteers showing abusive use but with no consequences or major mental problems interfering in their personal and/or social lives, took knowledge of the results and were informed that when participating in the research they had contributed to help the CIC's dependents with associated disorders.

When a therapy was detected necessary, the individual was sent to the CBT, which is a short-time therapy that works with specific techniques, among which one will find induction exercises of the symptoms (controlled induction); breathing and relaxation re-education (special exercises for it); “interoceptive” exhibitions (concerning the capture of their own sensations), alive exhibitions (to places and feared situations), cognitive restructuring (restructuring of cognitive some badly interpreted aspects) and psychoeducational (learning components that clarify concepts and mechanisms of the illness).

The CBT's [14] treatment focused on the stimulation of the patient to investigate, recognize and give a new sense to the distorted associations related to the corporeal sensations and the correction of the abusive unsuitable daily use of the CIC, therefore showing them other possibilities.

The CBT treatment plus medication [15], improved reasonably, in general, in the cases of mental disorders [5]. Concerning nomophobia [1], the nomophobic symptoms [1] (anxiety, anguish, nervousness-among others, related to the impossibility to use de cell phone or due to the fact that they were disconnected from the Internet), tended to disappear in the same proportion, as the treatment took course (Figure 1).

Project Approved by the Ethic Committee for Research (ECR) of the IPUB/UFRJ-CAAE N0 03264212.9.0000.5263.



**Figure 1:** Research volunteers.

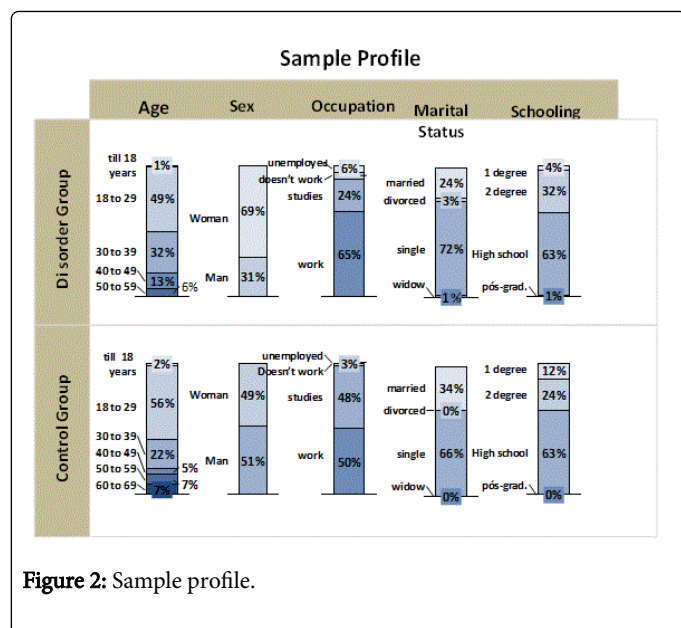


Figure 2: Sample profile.

### Observation

One must notice that 100% of the Control Group volunteers, in spite of making abusive use of the computer/internet and cell phone technologies, did not present any associated mental disorder.

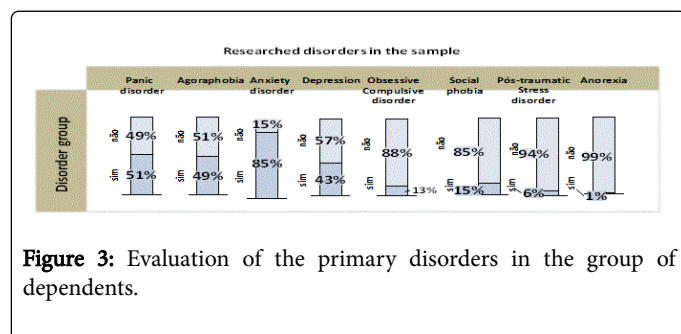


Figure 3: Evaluation of the primary disorders in the group of dependents.

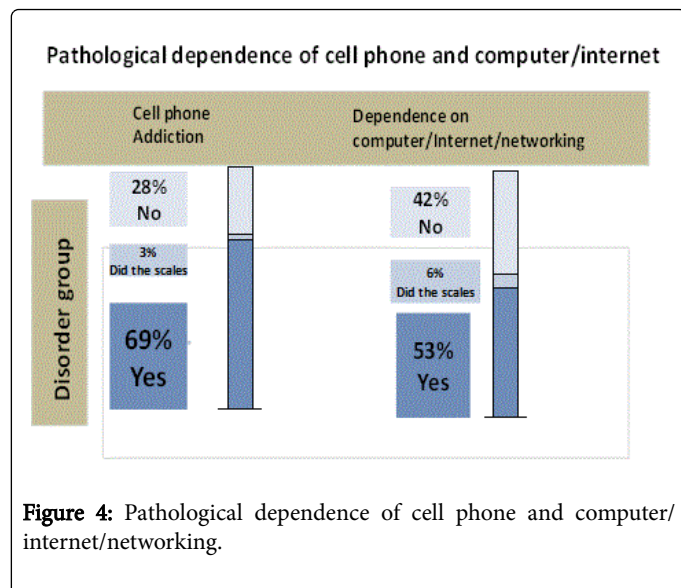


Figure 4: Pathological dependence of cell phone and computer/internet/networking.

### Results

According to this analysis, we were able to trace the profile of the men and women of the “Disorder Group”, in relation to the abusive use of the CIC technologies (Figure 2). The most abusive daily users of these technologies were the women (69%) ranging from 18 to 29 years of age, that work and/or study, 72% being single, 24% married and 63% had a higher level of education. In relation to the men presenting abusive daily use of the CIC, 31% range between 18 and 29 years of age, are working or studying; 72% are single, 24% are married and 63% presented a higher level of education.

We verified the profile of the volunteers with abusive daily use of the CIC belonging to the “Control Group”, composed in the majority by 49% of women ranging from 18 and 29 years of age, working and/or studying, 66% being single, 34% being married and 63% presenting a higher level of education. In relation to the men, 51% make abusive daily use of the CIC, range between 18 and 29 years of age, 50% work, 66% are single, 34% are married and 63% have a higher level of education.

We chose to research a few mental disorders which could, according to the hypothesis, be associated to the abusive daily use of the referred technologies (Figure 3). We present on Figure 3 the Disorder Group only, since 100% of the volunteers of the Control Group, in spite of making abusive use of the CIC, did not present associated mental disorders.

The psychopathologic profile revealed that within the mental disorders researched, the generalized anxiety disorder was the one to show a larger relation with the dependence of the technology: 85%. Following it, panic was found on 51% of the people, Agoraphobia with 49%, depression with 43%, social phobia with 15%, obsessive compulsive disorder with 13%, post-traumatic stress with 6% and anorexia with 1% (Figure 4).

In relation to the Disorder Group we verified that 69% of the volunteers presented pathologic abusive use of the cell phone, 28% did not present dependence on it and 3%, for a reason that we did not identify which, did not finish the scale of dependence. On the same Disorder Group we verified that 53% of the volunteers presented pathologic dependence of the computer, internet or social networks; 42% did not present dependence in relation to this segment and 6%, for some reason we don't know which, was not able to finalize the scales of dependence.

In the Control Group we verified that, in spite of the abusive use of the CIC, such use was considered “normal” for relaxation and/or work. Differing from the Disorder Group, making abusive use of the technologies, similarly to the Control Group, such use was considered pathologic for being directly related to a mental pre-existent disorder. In the Disorder Group, we observed that the volunteer was using determined technology as a vehicle of representation or escape valve in order to give fluidity to the characteristic symptoms of his/her original disorder.

### Discussion

The term dependence [5] can be used with different connotations. This is the reason why whenever we face the word “dependence” we ought to differentiate the “normal” dependence from the pathologic dependence. The DSM-IV5 submits the dependence to substances (such as alcohol and other drugs), and categorizes it as a psychiatric disorder of the axe I, thus defining diagnostic criteria related to a



behavior badly adapted, in which the individual comes to express, without a volunteer control, disorders of the social, psychological and physical levels.

The purpose of the study was to define the clinical and demographic profile of social network excessive users with Nomophobia. And yet differentiate abusive users of CIC just for leisure or work. Abusive users of the CIC with any psychiatric disorder related revealed be dependents, insecure and with low self-esteem [1]. These features have been observed in the psychological interviews conducted with individuals involved in the study.

The Group 1 is composed of individuals with psychiatric disorders associated and the [2] Group composed of individuals without disorders. We believe that these psychiatric disorders are reversible in most cases after the medical and psychological treatment. There are some studies related to professions where it is necessary to use new technologies (CIC) for many hours during the day, so we recommend that evaluations of health services that meet individuals with overuse of technologies there is always scales applications and interviews that can distinguish individuals who use CIC for leisure or work, those with a related disorder. In this way, the treatment can be better targeted.

The first to designate the term "Internet dependence" was Goldberg [16] to define a diagnostic category characterized by the compulsive and pathologic use of the Internet. In the paper of King et al. [1], the authors started to use the term pathologic dependence of the CIC when the abusive use of the individual was related to some mental disorder.

Briggs et al. [17] characterized the internet dependence as analogic to the dependence of substances, describing symptoms such as tolerance (the need to enlarge the number of hours online), the syndrome of abstinence (unease feeling, anxiety and anguish when far from the computer) and a lack of control to interrupt the use of the Internet. In the present study, we call Nomophobia [1] the symptoms of abstinence presented by the abusive users of the Technologies when incapable to connect.

King et al. [1] has offered as a diagnostic category the disorder of pathologic dependence of the CIC for those individuals for which the abusive use of the referred technologies should be associated to a primary mental disorder with losses to the personal, social, familial and professional aspects and the involvement of the quality of the individuals' life [18-20].

Other disorder that can be related to the abusive use of the technologies is the depression [21]. We have noticed several individuals with depression, making abusive use of the CIC. The question is: if in one hand the depressed individuals look for social networks in order to feel less solitary, on the other hand they can worsen the problem when noticing that the others' lives are more glamorous and successful than their own.

We have noticed nowadays an abusive daily use of the CIC technologies, not only by the adults, but also by adolescents and children [22] as well. We consider it a limitation to this analysis the item "age", due to the inclusion criteria which determine for the study the inclusion of the volunteers only, and between 18 and 65 years of age.

Other barrier to be considered is related to the observed mental disorders. We have divulged the convocation of the abusive users of the CIC technologies for our present research in several vehicles and there

came volunteers of several categories, as well as individuals originated from the ambulatory destined to help with anxiety disorders.

So, we suggest new studies that may embrace a larger range of diagnostics in a general ambulatory.

We believe that individuals with anxiety disorders may present a pathologic dependence of the referred technologies with a larger prevalence and severity than the ones that do not present such anxiety. Professionals of the Mental Health Care sector must specialize to offer an adequate treatment for the dependents of technologies that are surging at the doctor's offices.

The technologies bring several benefits for the Humanity, and so we incentivize people to make a conscious use of them, reducing their time at the CIC and, in so doing, preventing from physical and emotional damages, plus privileging the real life.

We see some limitations in the study as the reduced number of participants. We recommend that further studies on the matter are conducted to obtain more consistent results.

## Conclusion

We can conclude that there is a relationship between the psychiatric disorders with the abusive use of technologies. We found that individuals who have abusive use of CIC with any psychiatric disorder associated (Group 1) may show symptoms of nomophobia (anxiety, anxiety, nervousness, among others) more often when you are unable to connect. We have seen that these symptoms do not usually occur with abusive users who use only the CIC for leisure or work (Group 2).

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## Declaration of Divulging

There are no competing conflicts of financial interests.

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