

Social Network Misuse in Black African Subjects: Results of the Application of the Facebook Addiction Scale to 1000 Students in Ivory Coast

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Abstract: With the popularization of digital tools in Black Africa, the observation of the problematic use of Facebook raises questions about the emergence of new forms of behavioral addiction in a socio-cultural space that seemed to be spared from it until now. In conducting this descriptive cross-sectional study of 1000 black students at the University of Félix Houphouët-Boigny, our objective was to investigate behavioral addiction to Facebook among black African users of this digital social network. The results of the study revealed that in 28.3% of the cases, the daily connection time exceeded 5 hours with extremes of more than 8 hours (9.4%). Our respondents showed psycho-emotional and behavioral disturbances related to the connection to Facebook. These were: insomnia with phase delay (32.3%), irritability in the absence of connection (3.3%), narrowing of physical social interactions (8.3%) and neglect of one's needs (2.3%) in favor of Facebook use. The application of the Facebook Addiction Scale found a prevalence of problematic use at 11.8% in this study population. Given the problematic use of this social network, the hypothesis of the existence of an addiction to Facebook is supportable regardless of the socio-cultural area. The presence of signs of behavioral addiction, the psycho-emotional disturbances attributable to the regular use of this tool in some users and the suffering expressed by them, illustrates it pertinently.

Keywords: Students, Social Networks, Facebook, Behavioral Addiction, Black Race

1. Introduction

The development of new technologies and the reorganization of our daily life around tools that assist or facilitate our activities evoke an "extension of the field of addiction", especially since the media and *marketers* make the adjective "addictive" a selling point or an object of polemic [1].

The success of online social networks and other web community systems is based on our archaic tendency to look

for partners. Anthropological studies have shown that homo sapiens is a collaborative species par excellence. For this reason, humans can only survive and fulfill themselves through interaction with their fellow human beings [2]. Today, the rate of use of social networks has reached 3.4 million people worldwide, with Facebook at the top of the list; nearly 2.271 million active users worldwide [3]. If we consider the enslavement of its various applications available on the Internet such as, the problematic use of Facebook, could it be

understood as a new form of behavioral addiction?

Initially limited to addictions to toxic substances, which still constitute a real public health problem, the concept of addiction is currently enjoying great popular and media success and has seen its scope of application expand considerably [4]. The inclusion of non-drug addictions has opened up a new paradigm: that of "behavioral addictions", in particular: to the Internet, gambling, sex, sports, shopping, etc. Cyberaddiction, or Internet addiction, has been the subject of as much controversy as scientific research and is struggling to be recognized. For many authors, it is more accurate to distinguish various subtypes of Internet addiction according to the type of activity involved. Otherwise they would have to be linked to other types of addictions that exist outside the Internet. Moreover, Griffiths will use the notion of "secondary internet addiction" [5].

Based on the discoveries in neurobiology and functional brain imaging, Holden makes a link between addictions with and without substances [6]. The notion of experience and pleasure felt by the subject in his or her behavior would involve brain structures in the development of addiction. For many authors, it is a dysfunction of this system that is at the origin of addictive behavior: the "Reward Deficiency Syndrome" [7]. Thus, addiction should no longer be considered simply as the encounter of an individual with a product but as the expression of a basic underlying addictive process, which may be expressed by one or more types of addiction in the same individual. This basic process as explained by Goodman is the combination of genetic and environmental factors in a given individual [8].

In Ivory Coast, a study was conducted on students at the University Alassane Ouattara of Bouaké and focused on the prevalence of behavioral addiction to the Internet [9]. In the same perspective the present study, conducted at the University Félix Houphouët-Boigny, will attempt to address the issue through various factors by applying a standard questionnaire and the "Facebook Addiction Scale (FAS)" to a population of one thousand students enrolled in 11 TRU/13 of the said University [10].

2. Material and Method

The objective of the study was to investigate behavioral addiction to Facebook among users of this digital social network. The research field was a multidisciplinary public university in Côte d'Ivoire, composed of 13 Training and Research Units (TRU). The study was of a prospective cross-sectional type with a descriptive aim going from March to July 2018. One thousand (1000) students enrolled in 11 of the 13 TRUs were selected using a non-probability sampling technique by reasoned choice. The inclusion criteria were: being a student in one of the TRU of this university, regularly enrolled, having an internet connection tool and having an active Facebook account. The data collection was done by a questionnaire and the Facebook Addiction Scale (FAS) of Adreassen G. S. [10]. The latter makes it possible to measure the risk of addiction associated with Facebook. It is based on six questions and gives a score ranging from 6 to 12 points,

with 5 suggested answers. A score of 6 to 9 points indicates that the person does not have problematic Facebook use, while a score of 10 to 12 indicates problematic use. The data obtained were analyzed for descriptive statistics by the IBM SPSS 25.0 statistical software. For the analytical study we used the probability of occurrence of addiction to social networks as a function of the different modalities of each variable studied according to a logit model which takes as reference a modality of the variable of interest the reference modality to from the STATA software at the 5% threshold.

3. Results

3.1. Socio-demographic Characteristics of the Respondents

Table 1. Socio-demographic characteristics of the respondents.

Sociodemographic characteristics studied		
Sex	(n=1000)	%
Male	625	62,5
Female	375	37,5
Age		
<20 years old	77	07,70
20-25 years old	656	65,60
26-30 years old	241	24,10
>30 years old	26	02,6
Level of study		
Bachelor	705	70,5
Master's degree	224	22,4
Doctorate	71	7,10

The male gender represented (62.50%) of our workforce with an age between 20 and 25 years for 65.60%. Students with a bachelor's degree represented 70% of our workforce.

3.2. Ethological Aspects Related to the Use of Facebook Among the Respondents

Table 2. Facebook Usage Behavior of Respondents.

Facebook usage behavior		
Connection tool (s)	(n=1000)	%
Phone	919	91,9
Computer	292	29,2
Tablet	86	8,6
Activities on the networks		
Dredge	65	6,5
Chat	476	47,6
Meet	267	26,7
Information	832	83,2
Cyber scam	08	0,8
E-commerce	04	0,4
Daily connection time		
Less than 1 hour	260	26,0
Between 1 hour and 4 hours	457	45,7
Between 5am and 8am	189	18,9
More than 8 hours	94	9,4
Places of connection		
Home	965	96,5
Cybercafe	432	43,2
TD/TP room	281	28,1
Internship	87	8,7
University City	277	27,7
Place of worship	250	25,0
Any place	248	24,8

The cell phone was the most used connection tool at 91.9%. The home was the preferred place of connection for 96.5% of the students, with a daily connection of 01 hour to 04 hours in 45.7% of cases and the search for information as the main activity for 83.2%.

Table 3. Distribution of respondents according to psycho-emotional and behavioral disturbances related to the connection to the R. S Facebook.

Psycho-emotional and behavioral disturbances identified		
Nature of the disturbance	(n=1000)	%
Insomnia (phase delay)	323	32,3
Irritability if no connection	33	3,3
Narrowing of social interactions	83	8,3
Neglect of one's own needs	23	2,3

3.3. Psycho-emotional and Behavioral Disturbances Identified in Facebook Users

32.3% of the students had sleep disorders such as phase delay and psycho-emotional and behavioral disturbances dominated by irritability, narrowing of social interactions and neglect of one's own needs.

3.4. Prevalence of Problematic Facebook Use

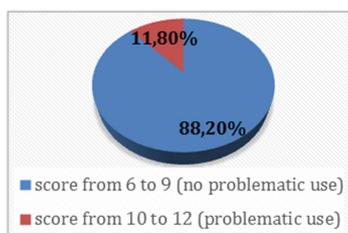


Figure 1. Distribution of students according to their score on the Facebook Addiction scale.

11.8% of respondents scored between 10 and 12 on the Facebook Addiction Scale.

4. Discussion

The analysis of the socio-demographic characteristics of the study population reveals a prevalence of male gender which represented 62.50% of our workforce. The age of our students was between 20 and 25 years in 65.60%. Our figures are similar to those of Cocorada E. and Kouadio E. Their study on internet addiction among students has an almost identical age range (20-25 years) to our study [11, 9]. This can be explained by the characteristic of the study population, which is made up of university students. Indeed, most of them are still going through adolescence, a phase of life influenced by marketing and digital media that affect health and well-being during these years [12].

Undergraduate students represented 70% of the respondents. Our study revealed a male predominance of 62.5%. In contrast, studies conducted in France [13] and in Ivory Coast [9] showed a female predominance of 73% and 52.32% respectively. Based on the results of several studies, it appears that women more than men, use the Internet for interpersonal communication and social interaction [14],

while men report using it more for entertainment [15]. Social networks thus combine the means (internet) and the objective (interpersonal relations) and would be, without surprise, very much invested by female subjects [9]. The results of our survey show, on the other hand, a male predominance. These differences in sex ratio are to be related to the statistics of the schooling of the said university. Indeed according to the figures of the year 2016-2017, this university had about 60,000 students in proportions of 90% for the male sex [16].

Regardless of gender and age, the cell phone was the most used connection tool 91.9%. Any new connected tool that increases our possibilities is suspected of hindering our freedom to abstain from using it, at the risk of reducing addiction to the sole dimension of habit or dependence on the object or behavior [1].

The home was the preferred place of connection (96.5%) with a daily connection of one (01) hour to four (04) hours in 45.7% of cases and the search for information as the main activity 83.2%. Our figures were similar to those of Couderc in France with a proportion of 98.26% [17]. Students go online in the places where they spend more time. However, 28.1% of students went online in classrooms and 25% in places of worship. The fact of connecting in these places, which require a particular attitude, concentration and greater attention, could suggest an impossibility of resisting the impulses to carry out this type of behavior and the frequent occurrence of episodes when the subject has to fulfill professional, academic or family or social obligations, as indicated in Goodman's criteria of addiction [8].

In the same register, the results show that almost half of the students, i.e. 45.7%, had a daily connection time of 01 to 04 hours. Kouadio E. and Suliman Mohammad al. found respectively 32.22% and 72.70% in their studies among students for the same interval of daily connection time [9, 18]. In addition, 28.3% of the respondents accumulated a daily connection time exceeding 05 hours with extremes of more than 08 hours (9.4%). Such a duration of connection is only conceivable if the user takes a considerable amount of time to perform the behavior. This type of use validates Goodman's criterion applicable to behavioural addictions. Indeed, we have among other things the following items: Intensity and duration of episodes greater than originally intended; Repeated attempts to reduce, control, or abandon the behavior; Significant time spent preparing for, engaging in, or recovering from the effects of the episodes; Frequent occurrence of episodes when the subject must fulfill professional, academic, family, or social obligations; Major social, professional, or leisure activities sacrificed as a result of the behavior; Perseverance of the behavior even though the subject is aware that it is causing or worsening a persistent or recurrent social, financial, psychological, or physical problem; Marked tolerance: Need to increase intensity or frequency to achieve the desired effect, or decrease in the effect provided by a behavior of the same intensity; and Agitation or irritability when unable to engage in the behavior [8].

The informational use of Facebook represented the main

activity among the majority of respondents, that is, 83.2%. The survey confirms the data of Mercier *et al.* in 2017, who obtained 73% of students who accessed online information through social networks at their head Facebook with 69% [19]. The information is of various headings; general media, culture, politics, humor, buzz, fashion, sports, practical life, science and environment. However, for 47.6%, the chats represented activities. According to Couderc's study, this frequency of use of Facebook is justified among users by the primary motivation of maintaining old relationships (relationships known outside the net) [17], well before that of meeting new ones [20]. A study shows that, for the vast majority of Facebook users, the main motivation is to keep in touch with friends they have met outside the Internet. Virtual relationships via Facebook thus appear as a complement to real relationships, Facebook being seen as a potentiator of social relationships. In this same study, it appeared however that, for a small number of subjects, Facebook was used more as a substitute for real "face-to-face" relationships [21].

Our respondents presented psycho-emotional and behavioral disturbances related to the connection to the Facebook R. S. Indeed, nearly a third of the students in our sample, i.e. 32.3%, had sleep disorders of the delayed phase type attributable to the regular delay in falling asleep, the objective of which is to extend the connection time. The phase delay syndrome, characterized by an inability to fall asleep before at least 2 a.m., in other words, any attempt to fall asleep earlier is doomed to failure, is a sleep disorder due to a disruption of the circadian rhythm that can be corrected by light therapy and behavioral modifications [22].

Consumers around the world are now constantly connected to distant friends, endless entertainment, and virtually unlimited information [23]. Smartphone owners interact with their phones an average of 85 times per day, including immediately upon waking, just before going to sleep, and even in the middle of the night [24-26]. Other psycho-emotional and behavioral disturbances were dominated by irritability if not connected, reduced "physical" social interaction, and neglect of one's needs in proportions of 3.3%, 8.3% and 2.3% respectively. A case study published by a Greek team mentioned a young woman of 24 years old, registered on the social network Facebook for 8 months. Her daily life and her usual functioning were severely altered: she had stopped most of her activities, had lost her job because she often left it to go to the nearby cyber café. She spent most of her time at home, on Facebook. She also alleged sleep disorders and a high level of anxiety [27]. Twenge mentions the breakdown of social interactions between the youth. They are suffering from "the worst mental health crisis in decades," she says. And the culprit is the smartphone [28]. Teens are said to be "scrolling" endlessly on social networks, shutting themselves off and suffering from comparison with their peers who post their daily lives on Facebook or Instagram. Like drug addiction, the dependence linked to the pathological use of Facebook, integrates the experience of "classic" addiction symptoms, namely mood modification (a favorable change in emotional states with the corollary of

relational narrowing, loss of interest in other activities and irritability), withdrawal or craving symptoms, i.e. unpleasant physical and emotional symptoms when the use of the social network is limited or stopped for various reasons [20, 29].

All these results suggest a probable addictive behavior to Facebook by the students, which we tried to highlight by means of the Facebook Addiction Scale (FAS). After the application of this scale, we find 11.8% of the students in the workforce with a score of 10 to 12. According to the FAS score, this score reflects a problematic use of Facebook and therefore an addiction. According to Nasr and Said's study conducted in Tunisia, 19.8% of the respondents were proven cases of cyberaddiction, and among them 2% constituted cases of extreme addiction to Facebook [30]. Couderc (2012), Benguigui (2009) and Kouadio (2017) found respective prevalences of 4.45%, 4.83% and 11.08% of cyberaddicts [17, 31, 9]. After a few rapid reproductions of the "Facebook connection" behavior, abuse and harmful use follow, which provide even more pleasure and stimulation despite the appearance of the first negative signs. This best illustrates the problematic use of Facebook. It is a behavioral addiction defined as an interactional process between an individual and the connection to Facebook. This activity can lead to a mainly psychological addiction because of the pleasurable effects it provides by engaging the pleasure-reward system (limbic system) by means of neurotransmitters such as dopamine and the functions it performs. This dependence, which results in the repetition of the behaviour, loss of control, centring and craving, can have negative consequences for the person and those around them [32]. However, the all-addiction approach empties the concept of its meaning, at the risk of increasing the gap between what each person feels in his or her relationship with behaviours that are part of life and the harmful consequences that are sometimes displayed a little too quickly in the media. The scientific community refuses a simple confirmatory approach to behavioral addictions: "copying" the symptoms of addiction, often the Goodman criteria, on any behavior is not enough to make it an "addiction". It is proposed to go back to the basics of the concept of addiction before examining a behavior that could be qualified as addictive. First of all, the behavior, repeated intensively, must be rewarding, reinforcing. Secondly, its repetition must cause suffering to the person. Without suffering, there is no addiction. Finally, the installation and maintenance of the behavior should respond to addictive processes: affective, cognitive, interpersonal and social [1].

5. Conclusion

The hypothesis of the existence of a Facebook addiction is supported by the problematic use of Facebook, regardless of socio-cultural background, and the presence of psycho-emotional disturbances attributable to its regular use and the cause of suffering in some users. In our study population, the application of the FAS scale allowed us to find 11.8% of problematic Facebook users. The profile of these users is that

of a young man aged 20 to 25 years, with a degree and a daily connection time of 5 to 8 hours per day on Facebook. Thus, although the behavior "connection to Facebook" allows to create a social framework and to maintain virtual interactions, it is likely to induce the emergence of a new form of addiction without substance. Moreover, the object of fascination being more Facebook than the channel used, it could be considered as an addiction "on the internet" which does not include de facto an addiction "to the internet".

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