Internet Addiction Disorder: An Italian Study

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ABSTRACT

The Italian version of the Young’s Internet Addiction Test (IAT) was administered online to a sample of Italian chatters ($n = 236$) who were different in terms of gender, age, and occupation. Results revealed that young users are more at-risk subjects for Internet addiction than adults, perceiving a compromised social and individual quality of their life that led them to make a compensatory usage of the Internet. Similarly, employed users perceive their social and individual quality of life as more compromised by the Internet than students. Moreover, subjects who declared spending much time online obtained IAT scores higher than others in all the IAT subscales. Finally, nightly users are more at-risk subjects for developing an Internet addiction disorder, diminishing their individual quality of life and disabling their time control.

INTRODUCTION

INTERNET ADDICTION DISORDER (IAD) is one of the latest forms of addiction to interest psychologists. The primary diagnostic criteria for IAD, first described by Goldberg, are based on the existence of three tolerance and abstinence symptoms for at least 1 year, such as psychomotor agitation (e.g., tremors, shivers, nausea, cephalgia), anxiety and mood instability, compulsive thoughts focused on the Internet, involuntary typing movement, assiduous connections to the Internet, craving, and perseverence of online surfing in spite of compromised individual and social aspects of psychological life. Many authors consider IAD as analogous to substance abuse disorder. As demonstrated by the literature, the term addiction should be not applied only to cases involving chemical substances, but also to a number of pathologic behaviors such as pathological gambling, eating disorders, sexual addictions and generic technological addictions, involving video games.

Specifically, Griffiths describes the IAD as featured by symptoms such as behavioral dominance, mood alteration, tolerance, abstinence and conflicts. Individuals who appear as particularly susceptible of developing an IAD are unable to tolerate the existential feeling of emptiness and the frustration of personal needs. These features lead people to discover the Internet as a “mental refuge”, a virtual space where discharge the individual anxieties and frustrations. The Internet, indeed, represents amplifications of the normal psychical functions, allowing, for instance, to gain access to multiple sources of information, to virtually meet people worldwide, to communicate in spite of spatial and temporal limits. Because of its possibility to exceed the normal spatial-temporal limits of the real world, it is a sort of “prosthesis” used by individuals to carry on the unsustainable weight of their relational and behavioral difficulties. According to Grohol’s perspective, the socialization is what makes the Internet so “addicting” for people experiencing social difficulties.
in their real life; in particular, the possibility given to users by chat rooms, so as MUDs (Multiple Users Dungeons), to interact with other people maintaining their anonymity, building new and more adaptive identities,\textsuperscript{12} providing a sense of community, social acceptance and, in some cases, sexual excitement. Cantelmi et al.\textsuperscript{13} have described two different phases in the development of IAD: firstly, Internet-addicted subjects live a drug-philiac phase focusing their attention on checking the e-mail and on surfing on the web; secondarily, they live a drug-manic phase, using relational services as chat rooms and MUDs, virtual role games giving them the possibility to construct multiple Selves.\textsuperscript{12}

The most significant contribution to the knowledge of IAD is to be attributed to Young,\textsuperscript{14} who developed a structured Internet Addiction Test (IAT) using the DSM-IV criteria for pathological gambling. The first version of the test consists in a questionnaire of eight brief items providing a screening measure of addictive use of the Internet.\textsuperscript{15} Subjects who answer “yes” to three (or more) of the eight questions are considered Internet “addicted.” Later, Young\textsuperscript{16} developed a more complete version of the test, consisting of 20 items, and she applied it to different samples of subjects aged between 15 and 40 years old. Results showed that addicted individuals neglect family, work, studies, social relationships and themselves. Moreover, when they are offline, they tend to develop addictive behaviors such as insomnia, anxiety, depression. Addicted individuals spend online 38½ h on an average per week, using prevalently social services as news-groups, chat-rooms, MUDs and e-mail, whereas not-addicted subjects spend, on mean, not more than 4.9 h per week, using Internet services that allow them to gather information—e.g., information protocols and the world wide web.

IAD seems to be a cross cultural syndrome, and the amount of time spent online seems to be, in fact, its best predictor; several studies, demonstrated a correlation between the amount of time spent online and the risk of developing IAD in American college students,\textsuperscript{17,18} in Chinese people,\textsuperscript{19} in Taiwanese people,\textsuperscript{20} in Pakistani internet users,\textsuperscript{21} and in Australian students.\textsuperscript{22} On the contrary, Del Miglio et al.\textsuperscript{23} found non evidence of a correlation between the amount of time spent online and the IAD levels of Italian internet users, measured using the Use, Abuse and Internet Dependence (UADI) scale.

In conclusion, all the above mentioned studies lead to define Internet as a true psychosocial phenomenon, having a deep impact in different social and psychological aspects of human life. Due to the relevance of the matter, we investigated the IAD phenomenon in a sample of Italian chatters—that, as above mentioned, are considered the most at-risk subjects for developing IAD—focusing in particular on the distribution of the IAD phenomenon in individuals of different gender, age and occupation. The literature, indeed, indicated that males are more inclined to develop an IAD than females,\textsuperscript{19} so as that IAD is more diffuse among younger people,\textsuperscript{24,25} even if it did not focus the differences between working people and students.

Moreover, the aim of the present study was to investigate whether the time spent online is correlated to a higher risk for developing IAD. We referred to two aspects of the variable “time”: the first one explored its quantitative aspect, meant as the amount of hours per week that people spent online (“Internet time usage”); the second one (“Internet hourly usage”) referred to the morning phase that people preferably spent online, differentiating between “daily users” and “nightly users.” Indeed, we hypothesized that people using the Internet during the night, renouncing to sleep and turning over their biological and social rhythms, may show higher risks of developing IAD.

**METHODS**

*Participants*

A total group of 236 Internet chatters (139 males and 97 females) aged between 13 and 50 years old (mean age = 23.9 years; SD = 6.5) took part in this study. The 55.1% of subjects were students; the 44.9% of them were employed. They declared an average use of the Internet of 15 h per week (SD = 0.9; range 2–100). In order to draw a picture of the IAD phenomena in its “natural” environment, we used in the present research an online collecting data methodology. Subjects were, then, recruited online by the Authors, in the most frequented “private rooms” of Italian Internet Relay Chat (i.e., BigFun, Chat SuperEva, Mondo Chat) during different hours of the day and the night. Specifically, 100 chatters (58 males and 42 females; mean age 24.5 years, SD = 5.3; 53 employed, 47 students) were recruited during the daily hours; 136 chatters (81 males and 55 females; mean age 23.5 years, SD = 7.3; 53 employed, 83 students) were recruited during the nightly hours. The chatters recruited during the day will be named Daily Group, while those recruited during the night will be named Nightly Group. The Daily Group presented an
average use of the Internet of 10 h per week (SD = 0.6), while the Nightly group use in average the Internet for 18 h per week (SD = 1.5).

Materials and procedures

All the subjects were initially asked for personal information (e.g., gender, age, occupation) and time of Internet usage (average of hours per week). Secondarily, they were requested to respond anonymously to the Italian translation of the IAT. The scale comprises 20 items on the Internet usage, and it takes about 15 min. For each item, subjects chose among five alternatives in a Likert scale (never, rarely, occasionally, often, always) corresponding to scores of 1–5. The IAT total score was computed by averaging the scores obtained by the subjects in each of the items of the scale.

Since in our previous study we found a six-factor solution for IAT explaining for the 55.6% of the total variance, the total IAT score is followed by the score obtained by subjects in each of the six considered factors (Table 1), obtained by averaging the scores of the single items included in each subscale. The six factors tap the crucial aspects of the Internet Addiction Disorder and have been named as follows: (1) compromised social quality of life; (2) compromised individual quality of life; (3) compensatory usage of the Internet; (4) compromised academic/working careers; (5) compromised time control; and (6) excitatory usage of the Internet.

Statistical analysis

To study the individual differences in the IAT total score and IAT subscales, a series of analyses of variance (ANOVA) were performed. A factorial ANOVA using demographic categories such as gender (males; females), age (young, 13–24; adult, 25–50; the two categories are based on median value), and occupation (student or employed) as between-subjects factors was performed on the IAT total scores.

RESULTS

A multivariate analysis of variance, performed using each of the six IAT subscales scores as dependent variables and each of the already considered between-subjects factors (Gender, Age, and Occupation) showed a significant multivariate effect of Age (F_{6,223} = 3.12, p < .01) and Occupation (F_{6,223} = 2.39, p < .05), but any significant multivariate effect of Gender (F_{6,223} = 1.6, p = .12). The univariate tests showed that young users obtained higher mean scores (mean score = 2.9, SD = 0.9) than adults (mean score = 2.5, SD = 0.1) in the “Compromised social quality of life” IAT subscale (F_{1,236} = 7.7, p < .05), in the “Compromised individual quality of life” IAT subscale (F_{1,236} = 3.6, p = .05; young: mean score = 2.0, SD = 0.8; adults: mean score = 1.8, SD = 0.8) and in the “Compensatory Usage of the Internet” IAT subscale (F_{1,236} = 3.8, p = .05; young: mean score = 1.8, SD = 0.9; adults: mean score = 1.6, SD = 0.8). Moreover, the univariate tests showed that employed users obtained higher mean scores (mean score = 2.9, SD = 0.1) than students (mean score = 2.5; SD = 0.09) in the “Compromised social quality of life” IAT subscale (F_{1,236} = 5.7, p < .01) and in the “Compromised individual quality of life” IAT subscale (F_{1,236} = 4.1, p < .05; employed: mean score = 2.0, SD = 0.08; students: mean score = 1.8, SD = 0.08).

A further step of data analysis was the study of the predictor values of the Internet Time Usage (high: 11–100 h per week; low: 10–2 h per week; the two categories are based on median value) and Internet Hourly Usage (daily or nightly) both on the IAT total score and IAT subscales. A factorial analysis of variance, performed using Internet Time Usage and the Internet Hourly Usage as between-subjects factors, revealed that the amount of time spent online (e.g., Internet Time Usage) is proportionally nested with the IAT total scores (F_{1,236} = 25.4, p < .001) so that people that declare a High amount of time spent online show the highest IAT scores; on the contrary, results showed any significant effect of Internet Hourly Usage on the IAT total score (F_{1,236} = 0.8, p = .37).

A multivariate analysis of variance, performed using each of the six IAT subscales scores as dependent variables and each of the already considered between-subjects factors (e.g., Internet Time Usage and Internet Hourly Usage) showed a significant multivariate effect of Internet Time Usage (F_{6,227} = 5.18, p < .001). Indeed, univariate tests revealed that people spending online a high amount of time obtained higher scores in all the IAT subscales, except in the “Excitatory usage of the Internet” sub-scale where results are near to the statistical significance (e.g., “Compromised social quality of life”
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Moreover, results showed a significant multivariate effect of Internet Hourly Usage (F_{6,227} = 2.29, p < .05). Indeed, univariate analyses showed that nightly chatters obtained higher mean scores than daily ones in the “Compromised individual quality of life” IAT subscale (F_{1,236} = 5.5, p < .05; Nightly: mean score = 2.0, SD = 0.05; Daily: mean score = 2.3, SD = 0.06) and in the “Compromised time control” IAT subscale (F_{1,236} = 8.7, p < .05; Nightly: mean score = 2.0, SD = 0.06; Daily: mean score = 2.3, SD = 0.07).

### TABLE 1. MEAN SCORES OBTAINED BY ITALIAN SUBJECTS (n = 236) IN THE TOTAL INTERNET ADDICTION TEST (IAT) SCALE AND IN THE SIX IAT SUBSCALES, CALCULATED BY AVERAGING THE SCORES OBTAINED BY SUBJECTS IN EACH OF THE CONSIDERED ITEMS

<table>
<thead>
<tr>
<th>Mean (SD)</th>
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<tbody>
<tr>
<td><strong>Total IAT scale</strong></td>
<td>2.7 (0.8)</td>
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**Compromised social quality of life**
- How often do you form new relationships with fellow on-line users? 2.73 (0.8)
- How often do others in your life complain to you about the amount of time you spend on-line? 2.73 (0.8)
- How often do you become defensive or secretive when anyone asks you what you do on-line? 2.73 (0.8)
- How often do you snap, yell, or act annoyed if someone bothers you while you are on-line? 2.73 (0.8)
- How often do you find yourself saying just a few more minutes when on-line? 2.73 (0.8)
- How often do you try to hide how long you’ve been on-line? 2.73 (0.8)

**Compromised individual quality of life**
- How often do you neglect household chores to spend more time on-line? 1.93 (0.7)
- How often do you fear that life without the Internet would be boring, empty, and joyless? 1.93 (0.7)
- How often do you lose sleep due to late-night logins? 1.93 (0.7)
- How often do you choose to spend more time on-line over going out with others? 1.93 (0.7)
- How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back on-line? 1.93 (0.7)

**Compensatory usage of the Internet**
- How often do you check your e-mail before something else that you need to do? 2.24 (0.8)
- How often do you find yourself anticipating when you will go on-line again? 2.24 (0.8)
- How often do you feel preoccupied with the Internet when off-line, or fantasize about being on-line? 2.24 (0.8)

**Compromised academic/working careers**
- How often do your grades or schoolwork suffer because of the amount of time you spend on-line? 1.77 (0.9)
- How often does your job performance or productivity suffer because of the Internet? 1.77 (0.9)

**Compromised time control**
- How often do you find that you stay on-line longer than you intended? 2.26 (0.7)
- How often do you try to cut down the amount of time you spend on-line and fail? 2.26 (0.7)

**Excitatory usage of the Internet**
- How often do you prefer the excitement of the Internet to intimacy with your partner? 1.8 (0.8)
- How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet? 1.8 (0.8)

Factor: F_{1,236} = 9.4, p < .01; “Compromised individual quality of life” factor: F_{1,236} = 24.5, p < .001; “Compensatory usage of the Internet” factor: F_{1,236} = 13.9, p < .001; “Compromised academic/working careers” factor: F_{1,236} = 9.7, p < .01; “Compromised time control” factor: F_{1,236} = 7.6, p < .01; “Excitatory usage of the Internet” factor: F_{1,236} = 3.2, p = .07. Moreover, results showed a significant multivariate effect of Internet Hourly Usage (F_{6,227} = 2.29, p < .05). Indeed, univariate analyses showed that nightly chatters obtained higher mean scores than daily ones in the “Compromised individual quality of life” IAT subscale (F_{1,236} = 5.5, p < .05; Nightly: mean score = 2.0, SD = 0.05; Daily: mean score = 2.3, SD = 0.06) and in the “Compromised time control” IAT subscale (F_{1,236} = 8.7, p < .05; Nightly: mean score = 2.0, SD = 0.06; Daily: mean score = 2.3, SD = 0.06).
DISCUSSION

As above-mentioned, the aim of the present research was to examine the Internet Addiction level in a population of Italian chat-room users, as a function of their demographic variables. The analysis performed on the IAT total score, however, didn’t show any differences between subjects of different Gender, Age or Occupation. The use of a more informative IAT score based on the six subscales described in our previous study, on the contrary, allowed us to draw a more precise picture of the Internet Addiction and its expressions in some of the considered demographic categories. In particular, consistently with the results of other studies involving British and American young people, the present results showed that young users are more at-risk subjects for Internet Addiction than adults; they perceive a compromised social and individual quality of their life that led them to make a compensatory usage of the Internet. This outcome is highly probably due to the adolescent and young adults’ particular attraction toward information and communication technologies together with the peculiar phase of identity’s development they are living. In particular, the chat-room becomes a sort of “virtual scenario” in which adolescents should experiment and prove various dimension of their self, living a sort of “fluid identity” and verifying their “multiple and possible selves” through the behavioral outcomes of their virtual alias. However, the enjoyment in this virtual journey is not free from consequences and it produces all the addiction effects previously discussed.

Another interesting and maybe not expected result of our study evidenced the influence of occupation in the IAD level. Indeed, employed users seem to be more at-risk subjects for developing an IAD than unemployed ones; they perceive their social and individual quality of life as more compromised than unemployed. This result is probably to be attributed to the simpler access to the Internet of employed people, that usually surf the net from their working places, spending a lot of time online without to be worried about connection costs or connection speediness. Similarly to Young’s results, such abused accessibility to the Internet exerts a negative effect in the social and individual quality of life, in the working careers and in the time control; thus, the Internet becomes a sort of “mental refuge” that people use to find excitement and to compensate the emptiness of their real life.

The last result refers to the two aspects used in the present research to measure the management of time in using the Internet. Consistently with the reported literature, both the Internet usage time and the Internet hourly usage, indeed, demonstrated to be important indicators of the IAD. In particular, people declaring to spend a high amount of time online (e.g., 11–100 h per week) obtain higher IAT scores; they perceive a compromised quality of their social and individual life, as well as their academic/working careers. However, it is difficult to say if the high usage time represents the cause or rather the effect of IAD. Indeed, if people spending a lot of time using the Internet are probably the most addicted, the addicted people feel the coercive need to be connected “1 minute more.” Moreover, it is to be considered that the particular population involved in our study was recruited inside the chat rooms, “a unique temporal space where the ongoing, interactive time together stretches out”.

As regards to the IAD scores differences as a function of the hourly usage, our results demonstrate that nightly chatters are more at risk than daily chatters for developing an IAD, which disables both their individual life and their time control. This result is not surprising if we consider that during the day the time is beat by the social conventions of the “official timing” that helps the subjects to maintain the sense of the time. On the contrary, during the night people perceive a sort of leveling out of the daily routines that bring them to disengage from the official timing.

In conclusion, our study characterized features of Italian chat-room users that are at risk for developing IAD, giving us a demographic profile of the typical addicted subject. Further studies, however, should be performed to define the psychological profile of addicted people and to verify the hypothesis that specific personality factors could determine, more than others, the risk for developing an IAD.

ACKNOWLEDGMENTS

This study was supported by the Research Project financed with Athenaum Funds (ex60% 2002) of Università degli Studi di Palermo, titled as “Nuove Dipendenze: Uso e Abuso della Rete [New Kinds of Addiction: Net Use and Abuse]” (coordinator: Prof. Marie Di Blasi) and by the Research Fellowship Program of Dipartimento di Psicologia Dell’ Università degli Studi di Palermo, titled as “La Ricerca Psicologica Online. Caratteristiche di Personalità e Stili Cognitivi degli Utenti [Psychological Online
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