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Smartphone Addiction and Dissociative Experience: An investigation in Italian adolescents aged between 14 and 19 years

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Abstract

Introduction: The aim of this investigation was the exploration of Smartphone addiction and dissociative experience and their consequences in adolescents.

Materials and Methods: The sample consisted of 200 adolescents, aged between 14 and 19 years recruited from two Public High Schools in Catania (Sicily, Italy). The materials were constituted by background questions, the Dissociative experience scale, the Smartphone addiction scale and the Ten Item Personality Inventory.

Results: Results showed that boys only suffer of Smartphone addiction. About personality factors, the higher was this Smartphone addiction, the higher was the level of agreeableness and lower the emotional stability. Also, according to DSM-5, there was also no presence of dissociative disorders, but there was only a little correlation with "absorption and imaginative assimilation" dimension.

Conclusion: Despite the massive use of smartphones in teenage boys, there was no presence of pathological disorders such as the so called "dissociative trance" [16]. There was just a slight correlation with the "absorption and imaginative assimilation" dimension, which is the tendency to engage our mind in situations of altered or highly focused attention. This phenomenon is relatively and frequently normal amongst the non-clinic population but it needs attention in order to prevent and avoid real psychopathological disorders.

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Introduction

Nowadays, the use of internet, smart phones, video games, social networks and other technological tools is very common. Their use is increasingly popular regardless of age, sex, social class and culture.

Adolescents and children of today are those who experience more this situation, were born in the age of technology and communications virtual/digital and are therefore referred to as "digital natives" [1].

Specifically, cellphone, which now takes the name of Smartphone thanks to its extensive applications and to the integration of the computer's operating system, is a priceless resource that made human life easier allowing distance communication, in which spatial and temporal barriers are eliminated. This has made us slaves of this device. As it always happens when the use of something becomes excessive, the Smartphone comes not without "side effects".

In this regard we have been conducted much research on children of this age group, the frequency of use of these technological tools, in particular the wide use of smartphones, about what motivates young people to use [7] and the consequences that these have on them [2].

Zanon et al. showed a possible correlation between the use of the internet, the dissociative experience and the presence of specific personality traits [3], while Craparo correlated internet addiction with alexithymia and dissociative experience [4].

There are also studies in the literature have shown a correlation between Smartphone addiction, impulsivity and hedonistic behavior research [5].

Other research, however, showed that despite the use of the smartphone is relevant and is considered harmful, is poorly correlated with symptoms of a real addiction [6].

Starting from this theoretical frame work was conducted a descriptive study to highlight the current communication patterns of adolescents and detect a possible Smartphone addiction with any dissociative experiences.

Material and Method

Purpose of study

The major purpose of this study was to investigate the degree of Smartphone addiction during adolescence and the correlation between the dissociative experience and some specific traits of the personality.

We hypothesized that:

1. The majority of the sample has a high degree of Smartphone addiction according to the social, cultural and educational changes of modern society.

2. In agreement with the findings of literature regarding the relationship between internet addiction and dissociative trance, the higher is the degree of addiction in adolescents, the greater is the dissociative experience.

3. The greater the degree of Smartphone addiction in adolescents, the lower is the correlation with personality traits such as extroversion, agreeableness, conscientiousness, emotional stability, and openness to experience.

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Measures and procedure

The protocol used consists of:

- A questionnaire to analyze the demographic characteristics of the sample and the main aim of the use of the Smartphone.
- The Smartphone addiction scales (SAS) in the adolescent version, for the exploration of Smartphone addiction.
- The Adolescent dissociative experience scale (A-DES), for the analysis of the dissociative experience.
- The Ten item personality inventory (TIPI), to analyze adolescent's personality traits.

Smartphone addiction scale for adolescent

The Smartphone addiction scale for adolescents is a scale consisting of 10 items that evaluates the degree of said addiction. The original version of the scale was drawn by four Koreans psychiatrists of "The Catholic University of Korea" [8].

In this study 10 items of the SAS-SV[8] have been translated and adapted. The SAS-SV in the Italian version showed a reliability equal to .795. The reliability of instruments were calculated using Cronbach's alpha. Participants were asked to answer indicating their level of agreement with a 6-point Likert scale (1=strongly disagree; 2=disagree; 3=slightly disagree; 4=slightly agree; 5=agree; 6= strongly agree).

Smartphone addiction scale for adolescent

The adolescent dissociative experience scale (A-DES) is a questionnaire consisting of 30 questions about the experiences that the subject might try in everyday life. The original version of the scale was drawn up by two American psychologists of the University of Arkansas [9].

They conducted a validation study of a version for teenagers from the original version of the scale "Dissociative Experience stairs" (DES) [10].

The A-DES is divided into 4 subscales: Dissociative amnesia, absorption and imaginative involvement, depersonalization and derealization, and passive influence.

In this study we translated and adapted the items of the A-DES. The A-DES in the Italian version showed reliability equal to .903. The reliability of instruments was calculated using Cronbach's alpha. In particular, the reliability of the individual subscale was: .700 for amnesia, .629 for the absorption, .804 for the depersonalization and .437 for influence. Participants were asked to answer based on the frequency with which they experienced a specific situation (from 0=never to 10=always).

Ten item personality inventory

The Ten item personality inventory (TIPI) is an inventory drawn up by two American psychologists at the University of Texas and consists of a list of 10 items of personality traits that may describe the subject. From the questionnaire we get what are the 5 factors in the Big Five: Extroversion, Agreeableness, Conscientiousness, Emotional stability and openness to experiences [14].

The instrument is derived from a readjustment of other inventories:

- Revised NEO Personality Inventory (NEO-PI-R) of Costa and McCrae that consists of 240 items [11].
- Big Five Inventory (BFI) of Benet-Martinez & john, that consists of 44 items [12].
- Goldberg's instrument (TDA) that includes 100 descriptive traits [13].

In this study we have adapted the items of the TIPI scale in Italian. In Italian version we administered only positive items for each factors.

It was asked to participants to indicate the degree of agreement for each of the features presented by a 7-point Likert scale (1=strongly disagree; 2=moderately disagree; 3=poorly disagree; 4=neither agree or disagree; 5=quite agree; 6=moderately agree; 7= strongly agree).

Statistical analysis

The examination of the statistical significance of results was carried out using the SPSS 22 software (Statistical Package for Social Science).

The reliability of instruments were calculated using Cronbach's alpha.

Participants

The sample was composed of 200 students (116 boys and 84 girls), aged between 14 and 19 years (X=16,12;DS=1,556) re-cruited from two Public High Schools in Catania.

Participants were selected after the informed consent granted by the head teacher.

Results and Discussion

Purpose of use of the Smartphone

The majority of the sample said they use the phone for more than one purpose. In particular, 59.5% of students said they use the Smartphone for social networks, 38.5% for games, 68.5% for internet, 59% for calls, 73% for posts, 42% for the pictures, the 2.5% to read books in pdf, 7% for whatsapp, to homologate 0.5% and 6% for applications.

Personality factors

The boys, in the scale TYPES, showed: a slightly higher score than normal in extroversion (E) (X = 4.51; SD = 1.76) and agreeableness (A) (X = 5.56; SD = 1.24); a little lower score than normal in conscientiousness (C) (X = 5.30; SD = 1.56), emotional stability (ES) (X = 4.07; SD = 1.88) and in openness to experiences (O) (X = 5.20; SD = 1.60). An analysis of the correlations did not highlight significant relationships amongst the factors examined.

Smartphone Addiction

The results in the SAS-SV have shown that females do not suf-fer from Smartphone addiction, while males showed a significant one. The female sample obtained a score of 29.69 out of 60, while the male sample a score of 51.80 out of 60. The normative data show a cut-off of 31 for males and a threshold value of 33 for females.

In relation to individual items, females obtained higher scores in items 4 "I would not be able to resist without a Smartphone" (X = 4.09) and 9 "I use my Smartphone more often that I should" (X = 4.25) and lower scores in item 3 "I feel pain in the wrists, back or neck while using my Smartphone" (X = 1.61), males also got high scores in item 9 (X = 3.81) and lower in item 3 (X = 1,49).

Dissociative experience

Teenagers showed on the A-DES scale: a score slightly above the norm in absorption (Abs) (X = 2.44; SD = 1.57); a little lower score than normal in amnesia (Am) (X = 1.79; SD = 1.55), in depersonalization (D) (X = 1.79; SD = 1.57), in passive influence (PI) (X = 2.27; SD = 1.74) and in the total scale (A-DES tot) (X = 2; SD = 1.30).

An analysis of the correlations showed significant positive rela-tionships between the factors examined, especially between "amnesia" and "absorption" (r = .63, p <.001), between "amnesia" and "depersonalization" (r = .56, p <.001), between "amnesia" and " passive influence" (r = .65, p <.001), between "absorption" and "depersonalization" (r = .56, p <.001), between "absorption" and passive influence "(r = .61, p <.001) and between" depersonalization "and" passive influence "(r = .71, p <.001).

Correlation between TIPI, A-DES e SAS-SV

The results demonstrate that between the SAS and the DES there is a significant correlation (r = .288, p <.001). This result can be extended to single factors of DES:

- SAS and amnesia (r = .203, p <.004)
- SAS and absorption (r = .207, p <.003)
- SAS and depersonalization (r = .157, p <.027)
- SAS and passive influence (r = .196, p <.006)

It is also showed that between SAS and TIPE there are no significant correlations except:

SAS and emotional stability (r = .223, p <.002)

There are significant differences between males and females regarding to the Smartphone addiction. In particular, men are addicted, females are not.

The subjects of our survey, considered without gender differences, that are extroverted and friendly, have no significant dissociative disorders except for the size of the absorption, that is the *tendency to engage our own mind in situations of altered and highly focused* attention [15], which happens to be a relatively normal and frequent phenomenon amongst the non-clinical population but that needs attention, nevertheless.

Conclusion

The teenager now spends more and more time in front of the smartphone and the Internet, mainly to communicate with others through messages, social networks, calls, finding in them a means of communication more accessible, easy, free from anxiety and fear, a defense on the other it brings more and more to escape from the real relationship.

In our study, there are significant genders differences, only the male sample are Smartphone addicted.

The degree of dependence is positively correlated with the factor Agreeableness and is negatively correlated with the factor of emotional stability as reported by Zanon and collaborators [3].

They are absent for other dissociative disorders such as significant "dissociative trance from display screen" shown in the study of Caretti and coworkers [16].

Directly proportional to the degree of reliance on smartphones is the presence of mild dissociative symptoms related to the size of the " absorption and imaginative assimilation", the tendency to engage his mind in situations of altered and highly focused attention [15].

This descriptive study has allowed us to reflect on a relatively normal and frequent in non-clinical but that needs attention for the prevention and avoidance of psychopathology real.

Limits

The limitations of this study are: the use of the Ten Item Personality Inventory rather than a more detailed and specific personality inventory for the analysis of personality traits, because of the school setting and the short amount of time available for the administration; The lack of some possible social and cultural factors that can influence the results, such as ethnic differences or specific age groups; the use of a sample of high school students only.

We aim to expand our research to students from other schools, junior high schools and universities; to deepen the variables until now excluded, to use more accurate investigative instruments and to analyze the relationship of cause and effect between emotional instability and the use of Smartphones.

Competing Interests

The author's interests are the new addictions and consequences in adolescents.

Author Contributions

All the authors substantially contributed to the study conception and design as well as the acquisition and interpretation of the data and drafting the manuscript.

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