

Academic Stress and Internet Addiction among Adolescents: Solution Focused Social Interest Programme as Treatment Option

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Abstract

This study investigated effects of Solution - Focused Social Interest programme (SFSI) on academic stress and internet addiction among older adolescents. 120 (One Hundred and Twenty) Older adolescents from three polytechnic participated in this study. The research design adopted for this study was pre- post experimental design. Four research hypotheses were raised and answered in this study. One screening and two other instruments were used for data collection. Data collected in this study were analysed using Analysis of Covariance (ANCOVA). The results obtained shows that there existed statistical significant main effect of treatment as evident in the post-test score of the participants. Again, the findings indicated that there was a significant interaction effect of gender on participants' academic stress and internet addiction. Moreover, the result revealed that there was a significant interaction effect of treatment of age on independent variables. The results obtained also shows statistical significant interaction effects of socio-economic status on independent variables. The implication of the findings indicated that Solution - Focused Social Interest programme was an effective therapy for the management of academic stress and internet addiction among older adolescents.

Keywords: Academic stress; Internet addiction; Adolescent; Solution focused; Social interest; Treatment option

Introduction

Globally internet is recognized as medium for information exchange, in various fields such as in academic research, entertainment, communication and commerce. Now day, controversial issues eschewed from internet use and its outcomes. Despite People are sickly addicted to it despite its importance and usefulness among modern men. Researchers have indicated that the continuous use of internet results in a lot of psychological and mental disorders like anxiety, depression, stress and obsessive compulsive disorder. However, it's pertinent to observe that this overuse is not just a matter of using the internet to perform, or using an average amount of time on computers. Instead, adolescent internet addiction participants compulsively use the internet, to such an extent that it is given priority over all other responsibilities which also affect time and attention to school work, domestic and responsibilities at home, and even adolescent interaction and relationships. Some the examples and activities of Internet overuse may include chatting online, playing online video games, or visiting sexually illicit or pornographic sites.

Various authors refers to Internet addiction disorder(IAD) by different names, for instance Ah and Jeong [1] called it names such as problematic Internet use (PIU) compulsive Internet use(CIU) [2], others refers to it as Internet overuse, problematic computer use, pathological computer use Disorder, or refers to excessive computer use which interferes with daily life [3]. Many researchers have created awareness on the misuse nature of internet use which can be abnormal. However, some authorities are of the opinion that an individual's use of the internet is a behavioural manifestation of other challenges in their lives, and thus, not sure of the fact of existence of this disorder [4,5] Widyanto and Griffiths [6], according to researchers like Dimple and Christy [7] with the appearance of internet technologies, an online absolute and effective communication space drawing persons of different interests unfolded. It is clear why Ogunrewo and Odusina [8] opined that internet technology is receiving an unavoidable dependency from many, mostly young adolescents [9].

Widyanto and Griffiths [6] asserted that overuse of internet is also

observed as a form of technological compulsive addiction which covers a lot of behavioural reactions characterized by problematic self-control. Therefore, it is pertinent, but quite questionable why more challenges that need solution arise as more or new devices of different technologies to make life easier take place. Internet overuse is a current and fast growing clinical observable [10,11], and one of such challenges arising from internet use [12-16]. Many countries have come to realise that Internet overuse is a potential harm to public health, for instance, China had about 10 million of its adolescents who test positive to Internet overuse. The situation demands public awareness because Block [2] online overuse to some games, cybersex and viewing of pornography lead to emerging of undesirable and antisocial behaviours including sexual tendencies (for the fact that such adult Longe et al. [17], websites and its use which always results in various behavioural severity [18].

In his opinion Goldberg [19], sees Internet addiction disorder as overuse of internet with stress manifestation of signs of anger, tension and anxiety. It is highly harmful to individual's health and social well being in that it encourages undesirable behaviour. Internet addiction disorders (IAD) is growing at a fast rate becoming a prevalent mental health problem around the world. According to Dong [20] the neurobiological underpinnings of IAD should be studied to unravel the potential heterogeneity. Internet addiction also is hazardous to health because of its negative impact on eye-sight, sleep pattern and other different illnesses. Female and male internet problematic user portray themselves as having a great deal of signs of eating disorders. It was observed that there exist correlation between internet dependence and eating disorders [21].

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Internet addiction leads to different social, psychological and physical disorders. ASAM [22] observes that internet problematic users are liable to negative physical effects such as sleep disturbance, back strain, eye strain, etc. According to him such persons also faces family, academic and social challenges [22]. One of the evil effect of internet addiction is anxiety, stress and depression. Continuous using of internet results to emergency of some concerns that one of them is internet anxiety [23]. There exists a positive and significant relationship between the level of anxiety and internet addiction.

Problematic internet use possesses the tendency to worsen social phobias and may prevent an individual from facing the social interactions [24]. Young children who are addicted to internet are not likely to function well and are not likely to connect effectively to stretch across network [25]. There also existed a profound correlation between anxiety and depression in childhood with internet addiction in adolescent. The extent of internet addiction in boy students is more than girl students. Problematic Internet use also have impacts on social interaction and social well beings. Cardak [26] found that. It makes individuals more introvert and minimize their interaction with family and society. Excessive use of the internet can results in reduced concentration and make it more difficult to read in the traditional sense.

Previous researchers such as Ah and Jeong [1], Cho [27], Suh and Lee [28] have revealed that stress is one of the crucial antecedents of Internet addiction for adolescents. The relationship between stress and problematic Internet use was anchored on the general strain theory. This theory suggests that a variety of strain or stress experienced by adolescents might cause negative emotions, which subsequently causes problem behaviours. Among the various types of stress, academic stress is the most salient and prevalent stressor for adolescents. Substantial research has consistently shown that academic stress is related to psychological problems such as depression, anxiety, and insomnia for adolescents [29]. In addition, Internet addiction has been identified to be linked to stress [1,30] and negative emotions [28,31] among adolescents. However, less is known regarding the psychological mechanism associated with academic stress and its link with Internet addiction. On the other hand, it seems that one another of the variables that could predict Internet addiction is stress. Stress is a state or psychological process in which the individual finds his/her physical and psychological well-being as a threatening situation. In fact, creating stress depends on how the individual perceives the situations and events. A situation may be safe for someone and may be perceived as a threat for someone else [32,33].

All types of social, economic and psychological stresses play a role in creating and developing Internet addiction. In this regard, Nastizaei [34] asserts that: the users addicted to the Internet have considerable anxiety and apprehension. These individuals may therefore use the Internet as an escaping way, that is, when a person does not have access to the Internet, s/he becomes anxious and to reduce his/her anxiety, s/he precedes Internet. Alavi et al. [35] in a study examined the relationship between psychiatric symptoms of Internet addiction in Isfahan University students; showed that there is a significant positive correlation between psychiatric disorders such as depression, anxiety, stress, hypochondria sis, compulsion, interpersonal sensitivity, aggression, paranoia, phobias, psychosis and Internet addiction. Jafari and Fathizade [36] in their study showed that there is a significant positive relationship between Internet addiction and each of the clinical variables of depression, anxiety, stress and social phobia. Different sciences have studied this phenomenon in several angles and have mentioned different theories to explain this disorder. The biomedical theory emphasizes on hereditary and congenital factors, chemical

fluctuations in the brain, and neurotransmitters. The aim of the current study is to examine the mediating role of solution-focused social interest programme in the management of Internet addiction among older adolescents in three polytechnics in Oyo state.

Signs and symptoms of internet addiction

Signs and symptoms of Internet addiction vary from person to person. There is no specific yardstick to measure if a person is addicted to internet. For example, there are no indication of set hours in a day or number of messages to be sent before an individual could be regarded as a problematic internet user. However, there are some general warning signs that individuals' Internet use may have become a problem: The under listed forms part of the signs and symptoms of internet addiction.

- Asking the following questions from the adolescents is likely to provide lead way to some of the signs and symptoms of internet addiction. If he/she frequently Looses track of time online. Whether he/she frequently find him/herself on the Internet longer than he/she intended? Has he/she observe on a frequent basis that a few minutes turn in to a few hours? If he/she get irritated or cranky if his /her online time is interrupted?
- Asking whether they frequently have trouble completing tasks at work or home. Whether they find laundry piling up and little food in the house for dinner because they've been busy online? Observe whether they find themselves working late more often because they can't complete their work on time and staying even longer so that when everyone else has gone home they can use the Internet freely.
- Another indication of internet addiction is isolation from family and friends. This might culminate in an individual's social life suffering because of all the time spent online. Neglect ion of family and friends. Feeling like no one in their "real" life including their spouse - understands them like their online friends?
- Feeling guilty or defensive about Internet use could be a sign of problematic internet use. Being sick of individual's spouse and nagging to get him/her off the computer or put his/her smart phone down and spend time together. Adolescents hiding their Internet use or lie to their boss and family about the amount of time they spend on the computer or mobile devices and probe to what they do while they are online?
- A question might be asked concerning their feelings. Whether they feel a sense of euphoria while participating in Internet activities. Inquire whether they use the Internet as an avenue to relief themselves of stress, sadness, or for sexual gratification or excitement? Information should also be elicited on whether they have tried to limit their Internet time but failed?

Physical symptoms of internet addiction

Some of the physical challenges Internet addiction can also cause on the individuals includes:

- Carpal Tunnel Syndrome (pain and numbness in hands and wrists)
- Dryness of the eyes or strained and blur vision
- Back and neck pains; frequent and excessive headaches
- Inadequate number of sleep hours
- Being bloated or Pronounce weight loss.

Diagnostic criteria for internet addiction

In his work Beard [37] recommended that five diagnostic criteria are required for a diagnosis of Internet addiction. His diagnostic criteria are; Is the individual preoccupied with the Internet (thinks about previous online activity or anticipate next online session); Does he/she needs to use the Internet with increased amounts of time in order to achieve satisfaction; Has he/she made unsuccessful efforts to control, cut back, or stop Internet use; Is he/she restless, moody, depressed, or irritable when attempting to cut down or stop Internet use; Has he/she stayed online longer than originally intended. Additionally, at least one of the following must be present: Has he/she jeopardized or risked the loss of a significant relationship, job, educational or career opportunity because of the Internet; Has he/she lied to family members, therapist, or others to conceal the extent of involvement with the Internet; Does he/she uses the Internet as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression).

Objectives of the Study

The general objective of this study was to investigate the effectiveness of solution focused social interest programme on academic stress and internet addiction among the older adolescents. Specifically the study intends:

- To assess the significant main effect of treatment on academic stress and internet addiction of participants.
- To determine the significant interaction effect of gender on academic stress and internet addiction of participants.
- To determine the significant interaction effect of age on academic stress and internet addiction of participants.
- To determine the significant interaction effect of socio economic status on academic stress and internet addiction of participants.

Hypotheses

The following null hypotheses were formulated and tested at 0.05 level of significance.

Ho1: There will be no significant main effect of treatment on academic stress and internet addiction of adolescents

Ho2: There will be no significant interaction effects of gender on academic stress and internet addiction of adolescents

Ho3: There will be no significant interaction effects of age and treatment on academic stress and internet addiction of adolescents

Ho4: There will be no significant interaction effects of socio-economic status and treatment on academic stress and internet addiction of adolescents.

Method

Design

This study utilized a pre-test, post-test control group experimental design. There was treatment, which existed at one level (Solution Focused Social Interest Programme). The covariate was the pre -test on adolescents' internet addiction disorder. The experimental and control groups were pre-tested before the commencement of the training sessions. Afterwards, the treatment group was taken through a counselling therapeutic sessions (Solution Focused Social Interest Programme). The control group was taken through a counselling

therapeutic session that had no relationship with the intervention techniques this research measured.

Sample and sampling techniques

The sample of this study were 120 adolescents screened through the Internet Addiction Test (IAT). The IAT is a validated testing instrument that examines symptoms of Internet addiction such as a user's preoccupation with Internet use, ability to control online use, extent of hiding or lying about online use, and continued online use despite consequences of the behaviour. Adolescents who met the criteria were included in the study and those who exhibited high-risk behaviours such as histories of hyperactivity, truancy, or aggression were excluding. Of the participants, 40 were first-year students, 40 were second-year students, 40 were third-year student. 68 of the participants (57%) were males and 52 (43%) were females. A large majority of the students (87%) were between 12 and 17 years of age (mean; 14.5 SD; 1.46). For the socio economic background 72(60%) were from low socio-economic home while 48 (40%) were from high socio- economic home.

Instruments

Two instruments were used to carry out this research. They are

Short version of the internet addiction test (s IAT)

Internet addiction symptoms was elicited with the German short version of the InternetAddiction Test. This test was an aspect of the original version of Pawlikowski et al. [38] developed by Young [39]. This test consists of 12 items on a five-point scale ranging from 1 (=never) to 5 (=very often) with 12 as the minimum score and 60 as the maximum score obtainable, while scores of 30 indicates a problematic Internet use and score 37 indicates pathological Internet use (The s-IAT consists of two Pawlikowski et al. sections: loss of control/time management and craving/social problems (each having six items). The 12 items load on two factors in both exploratory and confirmatory factor analysis (CFA), they capture the key symptoms of IA, as for Pawlikowski et al. [38] example described in the components model [6]. The first subscale "loss of control/time management" elicits information on how strong a person suffers from time management problems in everyday life due to his/her Internet use (e.g., "How often do they neglect household chores to spend more time online?" and "How often do they lose sleep due to being online late at night?"). This subscale equally elicits information on negative repercussion of problematic use of the Internet (e.g., "How often do their grades or school work suffer because of the amount of time spent online?"). This aspect of the item also assesses if the respondents was not able to control their Internet use and if attempt has been made to reduce their Internet use and failed (e.g., "How often do you find that you stay online longer than you intended?" and "How often do you try to cut down the amount of time you spend online and fail?"). All items do not assess the time spent online, but assess if or not individuals had a feeling of a loss of control concerning their Internet use and challenges in their daily activities ever resulting from their Internet use. The second subscale "craving/social problems" measures impacts of problematic Internet use on social interactions and preoccupation with the medium (e.g., "How often does the internet user feel preoccupied with the Internet when online, or dream about being online?"). Items ffl of this subscale also measure problem outside the user (inter-personal problems (e.g., How often does he/she snap, yell, or act] get angry if he/she is being bothered while online?) and mood regulation (e.g., "How if he/she always feel depressed, moody, or nervous when online, which vanishes as if he/she is back online?). All questions include the terms "Internet" or "online" in general without applying it to a specific area. The participants were informed in the instruction that all items which

has to do with their general use of the Internet including all applications used. The s-IAT possesses good psychometric properties and validity. Pawlikowski et al. [38] discovered the internal consistency (Cronbach's α) to be 0.856 for the whole scale, 0.819 and 0.751 [4] for the two subscales respectively.

Student academic stress scale (SASS)

Academic stress was assessed using the Student Academic Stress Scale [40]. Student Academic Stress Scale (SASS) has two sections with section A consisting of demographic information which was used to obtain background characteristics of the respondents. Items in this section requested information on age, gender, Type of home, of origin, educational level, religion class, type of school and marital status. Section B of SASS contains 130 items in a 5-point Likert type response format (1 Very much unlike me to 5 Very much like me). The SASS measures academic stressors and reactions to stressors. In the academic stressors section, six categories of academic stressors (i.e., frustrations, financial, conflicts, pressures, changes, and self-expectation) are assessed. In the reaction to stressors section, four categories describing reactions to these stressors (i.e., physiological, emotional, behavioural, and cognitive) were measured. Items are summed for each subscale to obtain a total score, with higher scores indicative of greater academic stress and reactions to stress, respectively. For the academic stressors section of the SASS, items consist of statements such as, "I have experienced daily hassles which affected me in reaching my goals," and "I have experienced dating frustrations." The Frustration subscale comprises 16 items and measures frustration that is due to delays, daily hassles to reach goals, lack of resources available (e.g., money for books, automobile), failures to accomplish goals, feelings of being a social outcast, dating problems, and denied opportunities in spite of one's qualifications.

The Financial subscale has 18 items which consists of statements like, "I am experiencing continuous financial incapability" "I feel unhappy most of the time, when I think about my financial situation." The Conflict subscale has 12 items and measures academic stress produced by having two or more desirable and undesirable alternatives and goals with positive and negative impacts. Examples of items in conflicts subscale include; 'I feel lecturers are not considerate of students' feelings', "I experience conflicts produced by too or more undesirable alternatives". The 6 items of the Pressure subscale measures academic stress resulting from competition, deadlines, work overload, and work responsibilities and expectations. Examples of items in pressures subscale are; "I am experiencing conflict due to deadlines" (papers due, payments to be made etc.). "I have experienced conflicts as a result of competition" (on grades, work, relationship with spouse and friends). The 8 item Changes subscale assesses academic stress that is due to life changes and includes changes that are disruptive to the respondent's life. Examples of items on changes subscale include "I am unable to study as required" "I am experiencing rapid unpleasant changes". The 6 item Self- expectation subscale measures stress in areas such as when a student likes to compete to win or to be noticed and loved by all. Examples of items in Self-expectation are; "I like to be noticed and be loved by all". "I like to compete and win". Cronbach's alphas were 0.65, 0.63, 0.71, 0.75, and 0.63 for the Frustrations, Financial, Conflicts, Pressures, Changes, and Self-expectation subscales, respectively.

Procedure

Solution - Focused Therapy is a future-focused, goal oriented type of talk therapy that involves only three to five sessions. The assumption

emphasised by SFBT is that people are capable of making rational choices, and construct solutions that will enhance their lives. SFBT corrects the past because it assumes that the client possess internal strengths, and resources that foster competency and resilience by advocating a non pathological perspectives. Therapists using Solution Focused intervention make use of the client's strengths in order to be more effective in the future. It ignores the problems and deficits and emphasise on strengths and exceptions to the problem and future goals.

Traditional treatment is at variant with Solution Focused Therapy because traditional treatment emphasis was on exploring problematic feelings, cognitions, behaviours and or interaction, providing interpretations, confrontation and client education. SFT play the role of assisting clients to make their vision a reality by developing a desire vision of the future wherein the problem is solved, and explored and amplify related client exceptions, strengths and resources to construct a client-specific pathway. To achieve this, the therapists using SFT engages in the following; Positive stance, Solution seeking, Exception seeking, Questioning, Future focused, and Compliments. The step by step to be taken in SFT includes:- Pre- contemplation, Contemplation, Preparation, Action, Maintenance and Termination. Since, specific programmes targeted toward Internet and technological addictions are needed. Counsellors who combined the use of solution focused group counselling techniques with existential theology, stress management techniques, and Adlerian social interest can ameliorate Internet addiction, enhance relationships, and in the process improve emotional health. It is on the basis of this that this research combined solution-focused therapy with social interest programme. The Solution Focused Social Interest Programme (SFSI) offers positive social interactions through group sessions and community involvement for those overusing the Internet. The Solution Focused Social Interest Programme (SFSI) is described as follows:-

Traditional therapy emphasises the cause of problems, with its detail analysis and narrates how the happenings is seen as undesirable or the way couples are "supposed" to work, and how couples are made to be inactive and the therapists as authority that can only made them to realise their problems. This makes the clients to be inactive and their non participatory role, rendered them to be a narrator of a problem that which they do severally. An effective method deemphasise what is wrong or right, but empower the clients with resources and skills as such to assist them to be active participants so that they can be responsible for their actions in order to realise their goals. The clients have to take their minds off what is wrong, but concentrate on how to achieve their goals.

Through this Intervention a new treatment strategy emerge to substitute the way and manner by which traditional substance and process addiction treatment are carried out with a new method for treatment of overuse, addiction, and compulsion to social media, video games, and other current technologies. To effectively use SFSI strategies, the following activities must be involved: stress management; exceptions, compliments, and scaling found in solution focused brief therapy; Adlerian social interest, and existential theories. Each step in the process is described as follows to aid implementation.

Programme description

First, the therapist met the clients individually to obtain informed consent, intake information, and screen the clients to ascertain the appropriateness of group participation. The therapist referred those that needed additional assistance for individual counselling. Groups of 7-8 participants were then assigned a day and time to meet for a

minimum of eight hour long weekly meetings. Pre test measure was administered to the participants.

Session 1: [0] developing a cooperative therapeutic alliance with the client: In the first session the participants introduce themselves to the group. As participants introduce themselves, the therapists compliments each person. For example, the first person that introduced himself said, "My name is A (participant's name) and he gave the reason why he joined the group. For instance the first person said that he joined the group because his parents thinks he spends too much time online" the therapist continue to give Compliments as each person introduces themselves. In this manner, rapport and a feeling of belonging was established between group members and the therapists. The therapist then group members and paired them and asked them to discuss consequences they were facing due to time spent online. Each of the participants listed things they have overlooked or ignored as a result of Internet use. This according to Young is refers to as a "personal inventory" [39]. The therapist helped the participants gain a sense of clarity of the situation, so that they can understand and admit that there was a problem. Participants were also helped to recognize the negative effects the addiction may have already had, such as disrupting school work and/or relationships. At this point, each person in the group was asked to fill in the blank on the following statement. "I learned _____ (participant filled in the blank during this exercise." Each person responded and the therapists continued [0] to give compliments to each group member.

Session 2: Describing the problem: The second session began by asking the participants to describe what was going better that week. As each person responded, the therapist compliments each person and follows up with an exception question. For example, the first person said, "This week I thought about the consequences of using the Internet so often. I didn't reduce my time spent online but I was more conscious of the fact that I am hurting myself and my parents." The therapist responded by saying that "You were able to focus on the consequences of using the Internet so often. This shows your desire to make changes and your ability to recognize the need for change. This is a good first step" (This compliment was given for showing personal strengths). Next, the therapists asked (an exception question) from the participants, "Tell me about a time when you were able to walk away from the Internet and do something with your parent or for work". After each response, the therapists asked, "What was different at that time?" The therapists restated what each person said in order to make sure and point out things the person did that influenced better behaviour. The therapist made the clients to form dyads and/or triads from within the large group. Each group were made to discuss the following question, "What activities might you enjoy in the community that would help others?" Triads discussed and assist one another with ideas. After Approximately 20 minutes, responses were shared within the large group. The therapists gave an assignment to each group member to decide on a community service (social interest) activity and report the idea to the group the following week.

Session 3: Setting of measurable goals: Committing clients to a social interest activity was the focus of the third session and being encouraged to make personal goals to stop or reduce Internet use. Group members were asked to describe things that have improved since the commencement of the programme. Once again, the therapists used complimenting and exception questions to help clients realize personal contributions to better behaviours. Therapists also helped and taught the clients to recognize what sort of needs or triggers lead to their internet use, and try to begin to "reroute" these impulsive behaviours,

so that the people can learn to control their urges. For example, each person was asked to describe one thing that worked over the past week in curtailing or eliminating Internet use. Participants were asked to rate their progress on a scale from 1-10 with the number "one" meaning little progress in lowering Internet use and "ten" meaning perfect progress. The therapists said, "Using a scale from one to ten, assess your progress with "one" meaning very little progress and "ten [0] [0]" meaning outstanding progress." When clients responded, the therapists gave compliments to the person for making an effort and then asks, "What would it take to move up one number in your progress over the next week?" The therapists then encouraged them to discuss their various experiences and made to set weekly goals. Next, each person described a social interest activity in which they would like to participate. The therapists asked each person to give detail steps they must take to start this activity and asked for a commitment to start this activity before the next session.

Session 4: Focusing on the future: During session four, focus was placed on understanding meaning in individual's life through social interest or other activities beyond Internet use. Further, additional goals for curtailing Internet use was established. For example, (when the therapist asked an exception question) some clients stated they used to be more cognizant of time before abusing the Internet. These clients were asked to set an alarm at certain times indicating a stopping point for Internet use. The therapist asked the clients to describe their experiences regarding social interest activities they have chosen. The therapist gave compliments for their perseverance in completing this project. In addition, clients were asked the following question, "How did this experience help you find meaning in your own lives?" The group with the therapist discussed the responses. Therapists also helped participants to identify what sorts of feelings or experiences they had which led to their addiction, such as stress or conflicts at school, or at home. The therapist informed the client that this process can help participants gain relief from their compulsion, as well as identify much more successful ways to gain relief from their feelings of anxiety or depression, by helping them establish new ways to address those issues. Client [0] were asked to bring a pillow and blanket to the fifth session.

Session 5: Restructuring: In this session clients were introduced to stress management techniques, continues goal setting and discussions of social interest benefits. This session commenced with the therapist asking the clients to state what is going well in social interest activities, Internet use, or completion of targeted goals. The therapist gave compliments to the clients for pointing out personal strengths that enable success and used exception questions to help target strategies. The therapist then introduced stress management techniques to the clients. Clients were informed that stress and anxiety can be reasons why people use the Internet. For instance, the therapists informed the clients that part of the reason for excessive internet use could be that, "People use technology to escape risks of forming connections in the real world. The clients were informed that learning stress management techniques could reduce anxiety felt when establishing real relationships." Having explained rationale for the use of stress management techniques, the programme commenced which was conducted for approximately 30 minutes following step by step approach. Each participant was asked to find a comfortable place on the floor or to stretch out in a chair. The lights in the room were put off as all the clients were settled and comfortable. The therapists then informed the clients to take a deep breath in through their nose and out through their mouth. They were taught that as they exhale, they should say to themselves, "I am relaxed." The therapist then took the lead by audibly breathes in, and said, "I am relaxed," and exhales (to

[0] model for clients). The therapists said to the clients, "Your head feels very heavy. They were asked to Imagine all the tension in their head dripping out of their body. The therapist also informed them that as the tension drips [0] [0] off their head, it becomes very heavy. The clients were given information that they couldn't lift their head if they wanted to. [0] [0] They were informed that they have become as relaxed as they wish to be. "Again, the therapists asked the clients to, take another deep breath in through their nose and out through their mouth. They were asked to say to themselves, "I am relaxed, as they exhale." Once more the therapists played the role of a model of these actions audibly for clients to follow. The therapists repeated this as she continues to help clients relax each part of the body from head to toe. As the relaxation of the head is achieved, the therapists moves to the shoulders, back, waist, and continues to the toes. Between each comment about relaxation, clients were asked to breathe and say, "I am relaxed. The moment a state of relaxation was achieved, the therapists reverses the technique by counting backwards slowly from ten to one. For instance, the therapists informed the clients that "I am going to count backwards from ten to one. She also said that as she counts down, the clients would become more aware of their surroundings. She started counting from Ten and made aware that they were in the room. Counting nine, she informed them that they begin to feel their limbs. Mentioning Eight, the therapist said they should be aware [0] [0] of those around them." This process continues until the count of "one" whereby clients were [0] [0] asked to open their eyes slowly and sit up when ready. The therapist puts on the lights after some minutes. The therapist then informed the clients to process this experience. The client were queried as to, "What was this experience like? She further asked them how it might help them [0] [0] with social interactions? The therapist also asked how this experience could help reduce Internet use?" [0] [0] The clients were allowed and given an opportunity to reveal their experience. This session came to an end and the therapists gave the clients the assignment to try this mentally at home at their convenient time.

Session 6: Eliciting and identifying automatic thoughts: This session witnessed the discussion and description of treatment of a group predominantly behavioural in nature such as identifying and sustain conditions, establishment of intrinsic motivation to curtail the number of hours stay online, replacing it with a less risky behaviours, Participation in desirable new social real-life contacts, participation in learning on psychological, educational and involvement in interventions. The therapists trained the participants how to improved motivation to stop abusing the Internet. They were taught the following as per how to improve ability to control their computer use, ability to function in offline relationships, ability to abstain from sexually explicit online material, ability to engage in offline activities, and ability to achieve sobriety from problematic applications. The fifth session was extended and had extra three sessions, this was done in order to comprehensively teach the clients to actualize curtailing of problematic internet use. [0] [0] The clients were asked exception questions each week to ascertain weekly or permanent strategies and goals. On each occasion this was done clients described a reduction in the addiction. The therapist and the clients practised relaxation techniques until clients feel confident to initiate the techniques at home. Finally, the therapist and the client discussed social interest activities. The treatment programme sessions continue up to eight [0] [0] weeks and until clients no longer need assistance and sessions were terminated.

Session7: Identifying and modifying underlying beliefs: The therapists engaged the participants in various training in this session. These includes; social competence training, training of self-control strategies and training of communication skills. The participants were

assisted in eliciting and identifying automatic thoughts by providing reasons, connecting between how clients think, feel and act. The therapists ask questions about automatic thought that occur during upsetting situations. The therapists uses the white board, when clients see their initial thoughts written up on the board, this may trigger them to reveal less obvious and more frightening thoughts. The clients were encouraged to engage in fear activities. They were engaged in anxiety- evoking activities. The clients were encouraged to focus on imagery. They were giving hints to gather information about imagery as an important way of assessing automatic thought. The clients were trained on self- monitoring thought. This was done through homework in which they would be recording their internet activities.

Session 8: Termination and homework: Participants were imbued with homework and suggestions for them to experiments with. They were informed to do their assignments regularly. The therapist taught them that there is a specific way to think about a good homework assignment which she said should address change at four levels

- Behavioural – is asking questions as to what they will do?
- Cognitive – seeks information on how do they have? what inform their choice whether it is not a victim problem?
- Experiential – Verify the type of look, feeling, and different situation they are when they know they are doing it?
- Systemic – See the possibility of how this could be used in resolving other problems?

Also in this session there were cognitive - role plays which involves practising re-focused attention, building Skills around communication (listen to and discuss specific complaints, role play some action statements, make short term goals...), schema focus exploration (to find the meaning of some behaviour for a client), daily diary to document what went right, or predicting future likely events whether good or bad, and then make a review of such prediction. Post-test measure was administered.

Data Analysis

Analysis of covariance (ANCOVA) was used to analyze the data obtained in this study. This statistical tool was used to control for confounding variables by removing initial differences between the participants in the experimental group i.e. Solution- Focused Social Interest and the Control Group.

Results

The findings as shown in Table 1, indicates that the compared pre-post treatment outcome following ANCOVA has the critical value $F(5,115)=65.31$, $P 0.05$ which suggests the existence of statistical significant main effect of treatment as evident in the post-test score of the participants. The outcomes of the findings have consequently failed to support the null hypothesis tested at 0.05 alpha level of significant. This shows that there was a significant main effect of treatment on academic stress and internet addiction of the adolescents.

The findings as depicted in Table 2 shows that there was significant interaction effect of gender on participants' academic stress and internet addiction as showed in ANCOVA critical value $F(5,115)=62.71$, $P 0.05$ which indicated the existence of statistical significant interaction effect of treatment based on gender. Thus the tested hypothesis was not supported by this finding.

As shown in Table 3, the result revealed that there was significant

interaction effects of treatment of age on academic stress and internet addiction of the adolescents. The results of the ANCOVA reflect a significant interaction effect of age on treatment. Thus, the null hypothesis was not sustained. The computed details indicated that the critical F (5,115)=47.57 P 0.05 it follows therefore that the alternative hypothesis was sustained.

The null hypothesis four investigated the interaction effects of treatment of socio-economic status on academic stress and internet addiction of adolescents. The post treatment outcome as shown in Table 4 indicated the critical value of F (5,115)=37.51; P 0.05. With this finding the null hypothesis was not sustained. The results obtained revealed statistical significant interaction effect of socio-economic status on academic stress and internet addiction of the participants.

Discussion

The results obtained from the data collected from the first hypothesis indicated that there was a statistical significant difference of treatment (Solution - Focused Social Interest Programme) on academic stress and internet addiction disorder of the participants. A major factor that might have aided the reduction of internet addiction disorder of the experimental group could be the participants' exposure to skills of goals setting and problem solving SFSI for internet addict involves modifying behaviour, assessing cognitive distortion, problem- solving skills, social competence training, training of self-control strategies and training of

communication skill The findings of this study and coping strategies training. Corroborates that of Young [41] whom his therapy enables the internet addicts to attack the assumptions and interpretations that keep them online for longer time because through the errors in the thinking, they exaggerate their difficulties and minimize the possibility of corrective action. This therapy according to him helps to put the clients' thoughts 'under the microscope'. These findings indicates that increased self-confidence and a sense of being oneself are instilled through training in various positive qualities, personal strength, physical attributes and special skills. Anxiety and stress are potent cause of internet addiction. The findings of this study is consistent with suggestion in other studies which linked internet addiction positively to anxiety and stress. The implication of the finding is that the more stress and anxiety a student has the more he/she will be addicted to the internet. Studies have shown significant relationship between Problematic Internet Use and procrastination. It has important implications. It means that the internet is being used as a coping mechanism to stress. Specifically, involves avoidance of cognitive task so as to participate in activities that could distract an individual from the things that he/she supposed to do [42]. General procrastination is also believed to be related to negative affect and cognitive imbalance with signs and symptoms of depression and high level of perceived stress. This adversely affect academic performance which results in academic stress. In this study, the exposure of internet addicts to SFSI made the clients to claim ownership of the problem and took a daily commitment towards healthy internet usage. Through this acceptance and daily commitment, they were able to regulate their internet use behaviour as well as converge on measure that was able to reduce their excessive internet usage as well as reduction in the academic stress level as demonstrated in this study.

The results of the findings of the second hypothesis shows that there was a statistical significant interaction effects of treatment of gender on academic stress and internet addiction disorder of the participants. The findings of this study was supported by earlier researches such as the study carried out by Azim et al. [43] it was found that observable negative effects marked greater number of online users who were males, whereas a greater proportion of females were moderate online users. In the same vein this study lend credence to the studies of, Frangos et al. [5] Mythily et al. [44] Serin [45], Canbaz et al. [46] Fisoun et al. [47] Odaci and Kalkan [48] Ko et al. [49] Sepehrian and Lotf [50], Chakraborty et al. [51] and found and suggested that the males suffer more from IA than females, added that male gender is a moderate predictor of IA, and Frangos et al. [5] Mythily et al. [44] suggested from their finding that males' IA addiction is probably two times as much as that of females. Whereas the findings from Hardie and Tee [52]; contradicts the finding of the current research when they observed that moderate and Problematic Internet Use was evenly engaged-in by both males and females. Jalalinejad also confirmed in his research that the prevalence of internet addiction in boy students is more than girl students.

The result obtained from the third hypothesis revealed that there was significant interaction effects of treatment of age on academic stress and internet addiction of the adolescents. The findings of this study was in line with the work of Cho and Shin [53] which also found that anxiety and depression in childhood had a significant relationship with internet addiction in adolescent. The indication of this finding is that therapists should try to prevent anxiety during childhood to subsequently prevent internet addiction and thus indirectly ameliorate academic stress. The study shows that anxiety is greatly a predictor of internet addiction. Internet use can result to low attention span on the part of the learners and make it could prevent reading in the traditional

Source of variation	DF	SS	MS	F-Ratio obs.	F-Ratio Crit.	Test Decision
Between Group	5	177689.65	35537.93			
Within Group	115	45285.85	393.79	65.31	2.05	Reject H ₀
Total	120	222975.50	35931.72			

Critical value F, (5,115)=65.31, P>0.05

Table 1: Pre-post treatment comparison of experimental and the control group.

Source of variation	DF	SS	MS	F-Ratio obs.	F-Ratio Crit.	Test Decision
Between Group	5	266888.45	53377.69			
Within Group	115	56521.35	491.49	62.71	2.05	Reject H ₀
Total	120	323409.80	53869.18			

Critical value F, (5,115)=62.71, P>0.05.

Table 2: Pre-post treatment comparison of male and female participants exposed to solution - Focused social interest programme.

Source of variation	DF	SS	MS	F-Ratio obs.	F-Ratio Crit.	Test Decision
Between Group	5	91783.75	18356.75			
Within Group	115	5353.95	356.93	47.57		Reject H ₀
Total	120	97137.70	18713.68			

Critical value F, (5,115)=47.57, P>0.05

Table 3: Pre-post treatment comparison of participants exposed to solution - Focused social interest based on age.

Source of variation	DF	SS	MS	F-Ratio obs.	F-Ratio Crit.	Test Decision
Between Group	5	79287.90	15857.58			
Within Group	115	101148.25	879.55	37.51	1.72	Reject H ₀
Total	120	180436.15	16737.13			

Critical value F, (5,115)=37.51, P>0.05

Table 4: Pre-post treatment comparison of participants exposed to solution - focused social interest based on parent socio-economic.

sense. Indeed, these findings suggest that academic stress is a significant factor in the development of psychological problems among students.

It implies that adolescents with high levels of academic stress were more likely to display more depressive symptoms. The indication of this is that adolescents that are preoccupied with academic stress are most likely to be prone to internet addiction. Academic achievements of students with excessive internet use are also negatively affected. It follows therefore that students addicted to internet are more involved in it than their studies. Due to excessive internet use they perform poorly in their academic pursuits, performance [54]. Parents, teachers and state officials should be made to be aware of the danger of internet. Some researchers observe that internet addiction has a lot of negative effects on man's mental and physical health. Studies have shown that adolescents used Internet as a means of relieving their stress, Velezmore et al. and regulating their negative moods. Academic stress has been almost Caplan [55], notorious among adolescents, and is even termed "examination hell." Many empirical findings have revealed significant relationship between high levels of academic stress and Internet addiction among adolescents. For example, adolescents with tremendous levels of stress are reported to be more addicted to Internet gaming [30]. Internet addiction played a mediating role in the relationship between academic stress and school maladjustment among adolescents [1]. In addition, high levels of academic stress were associated with high levels of Internet addiction despite social support. These Suh and Lee [56], findings suggest that high levels of academic stress among adolescents can influence Internet addiction. In this study SFSI was effective in the treatment of internet addiction among the older adolescents. The implication of this is that internet addicts who were exposed to psychological intervention such as focus- solution social interest could change from being internet addicts to healthy internet users. Achieving this will make such individuals to be well adjusted and perform wonderfully in their academic pursuit in order to contribute their quota to the develop of their community in particular and the nation in general.

The results obtained from the fourth hypothesis revealed that there was statistical significant interaction effects of socio-economic status on academic stress and internet addiction of the participants. The findings of this study implies that Internet addiction also affects social relation and social well beings. This result was substantiated by Nie et al. [57] who reported that excessive internet use is capable of robbing an addict valuable time to be spent with family and friends, leading to reduced social circles and increase levels of loneliness and stress. Other inferences that could be drawn from excessive usage have been listed to include neglect of academic, work, and domestic and family responsibilities, problem of interpersonal relationships, disruption of relationships, social isolation, and financial problem [58-60].

Clients reported that solution focused therapy social interest was effective in the treatment of the following;- common symptoms of online addiction disorder; motivation to quit, online time management, social isolation [61-65], sexual dysfunction, and abstinence from problematic online applications. This is due to the fact that solution focused therapy social interest combined components of stress management; exceptions, compliments, and scaling found in solution focused brief therapy [66]; Adlerian social interest, and existential theories which were unified into an empirically testable model [67]. This model is unique because it is a treatment model designed for treatment of internet addiction which utilises goal- oriented strategies to encourage orderly and controlled internet use as well as desirable activities that keep the internet addict away from the internet. SFSI is effective in the management of internet addiction due to the fact that

adolescents involved in addictive use of internet do so because of the negative thoughts as well as wrong attitudes and assumptions they have towards internet usage [68-72]. SFSI involves restructuring and changing of dysfunctional thoughts, attitudes, beliefs and assumptions. The application of the principles of SFSI therapy in this study have been able to restructure and change the dysfunctional thoughts, attitudes, beliefs and assumptions of the internet addicts towards internet usage. This has led to positive behavioural change among the adolescents with internet addiction disorders [73].

Conclusion

Solution Focused Social Interest Programme was effective in reducing internet addiction among older adolescents in the three polytechnics in Oyo state [74-78]. In other words if the principles are adequately applied, the application of this psychotherapy will help in the reduction of internet addiction among even the younger adolescents in the secondary school. The utilization of combination of many strategies to make up a treatment programme in this study may be partly responsible for its effectiveness. Utilization of the aforementioned programme can help clients curtail [79-83] Internet addiction and/or overuse and, therefore, manage the accompanying mental, physical, academic, and family consequences.

Counselling Implication of the Findings

These findings have important implications for counsellors and policymakers who develop means for the prevention of, and intervention in, adolescents' Internet addiction.

The results suggest that it is particularly important for counsellors to deal with adolescents' negative emotions in the context of Internet addiction [84].

The findings also suggest that the early prevention of academic stress is important in halting the development of negative emotions that subsequently influence Internet addiction [85].

In addition, the findings suggest that various leisure programmes are required to prevent academic stress and negative emotions, given that the adolescents are reported to devote most of their time to studying and lack sufficient leisure time [86].

Thus, it is difficult for the adolescents to develop their own leisure culture and activities. The additional data analysis in this study revealed that adolescents who were participating in sports activities or who had several hobbies were more likely to have low levels of academic stress, suggesting the beneficial effects of appropriate leisure and cultural activities.

Uncomfortable emotions, such as stress, anxiety, or depression should be ameliorated by counselling the adolescents to learn social skills and healthier way of coping with them.

In addition, the stakeholders should organize seminar, conferences and symposium in order to highlight the negative consequences of problematic Internet use.

Internet usage should be replaced with less risky and healthy activities like Yoga practising, exercising, meditation and joining some team sports Clients could be assisted by cognitive-behaviour therapists to stop compulsive internet behaviours by changing the perceptions regarding Internet, smartphone, and computer use.

References

1. Ah YA, Jeong WC (2011) The mediating effect of internet addiction between

- academic stress and school maladjustment in adolescence. *Korean Journal of Adolescents* 18: 27-50.
2. Block J (2008) Issues for DSM-V: Internet addiction. *American Journal of Psychiatry* 165: 306-307
 3. Bernardi S, Pallanti S (2009) Internet addiction: A descriptive clinical study focusing on comorbidities and dissociative symptoms. *Comprehensive Psychiatry* 50: 510-516.
 4. Thatcher A, Wretschko G, Fridjhon P (2008) Online flow experiences, problematic Internet use and Internet procrastination. *Computer in Human Behaviour* 24: 2236-2254.
 5. Frangos CC, Frangos AP, Kiohos (2010) Internet addiction among Greek university students: Demographic associations with the phenomenon, using the Greek version of Young's Internet addiction test. *International Journal of Economic Sciences and Applied Research* 3: 49-74.
 6. Widyanto L, Griffiths M (2006) Internet Addiction: A Critical Review. *International Journal of Mental Health and Addiction* 4: 31-51.
 7. Dimple R, Christy M (2011) Online social network dependency: Theoretical development and testing of competing models. *Hawaii international conference on system sciences 44th, City University Hong Kong* 1-9.
 8. Ogunrewo JO, Odusina EK (2010) An appraisal of Internet usage among academic staff members of Joseph Ayo Babalola university, Ikeji Arakeji, Osun state, Nigeria. *Ozean Journal of Social Sciences* 3: 217-222.
 9. Kuss DJ, Griffiths MD (2012) Adolescent online gaming addiction. *Education and Health* 30: 15-17.
 10. Saville BK, Gisbert A, Koppo J, Telesco C (2010) Internet addiction and delay discounting in college students. *The Psychological Record* 60: 273-286.
 11. Young KS, Abreu CND (2011) *Internet Addiction*. Hoboken: John Wiley & Sons, Inc, Hoboken, New Jersey.
 12. Bertagna BR (2009) The Internet-Disability or distraction? An analysis of whether "Internet addiction" can qualify as a disability under the americans with disabilities act. *Hofstra Labor & Employment Law Journal* 25: 419-481.
 13. Wan C, Chiou W (2007) The motivations of adolescents who are addicted to online games: A cognitive perspective. *Adolescence* 42: 179-197.
 14. Murali V, George S (2007) Lost Online: An Overview of Internet Addiction. *Journal of Continuing Professional Development* 13: 24-30.
 15. Akin A, Iskender M (2011) Internet Addiction and Depression, Anxiety and Stress. *International online journal of educational sciences* 3: 138-148.
 16. O'Keeffe GS, Clarke-Pearson K (2011) Council on Communications and Media. The impact of social media on children, adolescents, and families *Pediatrics* 127: 800-804.
 17. Longe OB, Chiemekwe SC, Onifade OFW, Balogun FM, Longe FA, et al. (2007) Exposure of children and teenagers to Internet pornography in South Western Nigeria: Concerns, trends & implications. *Journal of Information Technology* 7: 195-212.
 18. Flood M (2009) Youth, sex, and the Internet. *Counselling, Psychotherapy, and Health* 5: 131-147.
 19. Goldbreg (1995) *Internet addiction disorder*.
 20. Dong (2013) Impaired error - monitoring function in people with internet addiction disorders: An event-related fMRI study. *Eur Addict Res* 19: 269-275.
 21. Tao R, Huang X, Wang J, Zhang H, Zhang Y, et al. (2010) Proposed diagnostic criteria for internet addiction. *Addiction* 105: 556-564.
 22. American Society of Addiction Medicine, (2012) *The Voice of Addiction Medicine*.
 23. Nima, Nazanin (2012) *World academy of science, engineering and technology*.
 24. Lee, Stapinski (2012) Seeking safety on the internet: Relationship between social anxiety and problematic internet use. *J Anxiety Disord* 26: 197-205.
 25. Hong SB, Zalesky A, Cocchi L, Fornito A, Choi EJ, et al. (2013) Decreased functional brain connectivity in adolescents with internet addiction.
 26. Cardak M (2013) Psychological well-being and internet addiction among university students. *The Turkish Online Journal of Educational Technology* 12: 134-141.
 27. Cho CB (2006) The influence of the experience of domestic violence in adolescence on internet addiction. *Korean Journal of Adolescents* 13: 1-52.
 28. Lee J, Hwang JY, Park SM, Jung HY, Choi S, et al. (2014) Differential resting-state EEG patterns associated with comorbid depression in Internet addiction. *Progress in Neuro-Psychopharmacology and Biological Psychiatry* 50: 21-26.
 29. Kim SJ, Byrne S (2011) Conceptualizing personal web usage in work contexts: A preliminary framework. *Computers in Human Behaviour* 27: 2271-2283.
 30. Ju S (2011) Verification of mediation effects and moderation of resilience in relations between stress caused by study and parents that adolescents perceive and internet addiction. *Korean Journal of Adolescence* 11: 61-83.
 31. Jang KS, Hwang SY, Choi JY (2008) Internet addiction and psychiatric symptoms among Korean adolescents. *Journal of School Health* 78: 165-171.
 32. Kim JY, Lee DE, Chung YK (2011) The impact of academic stress on delinquent behaviour: Focusing on the mediating effect of depression. *Korean Journal of Child Welfare* 41: 101-123.
 33. Clark DK (2010) *The Relationship of Perceived Stress and Self-Efficacy Among Correctional Employees in Close-Security and Medium-Security-Level Institutions*. Degree of Doctor of Philosophy, Psychology, Walden University.
 34. Nastizaei N (2009) The Study of Relationship between the General Health and Internet Addiction. *Journal of Oriental Medicine* 11: 57-63.
 35. Alavi S, Merathi MR, Janatifard F, Islami M (2010) The Study of the Relationship between Psychiatric Symptoms and Internet Addiction in university students in the City of Isfahan. *Scientific Journal of Hamadan University of Medical Sciences and Health Services* 17: 66-57.
 36. Jafari N, Fatehizade M (2012) The relationship between Internet addiction and depression, anxiety, stress and social phobia in students of Isfahan University. *Scientific Journal of Kurdistan University of Medical Sciences* 17: 1-9.
 37. Beard KW, Wolf EM (2009) Modification in the Proposed Diagnostic Criteria for Internet Addiction. *CyberPsychology & Behavior* 4: 377-383.
 38. Pawlikowski M, Altstötter-Gleich C, Brand M (2013) Validation and psychometric properties of a short version of Young's Internet Addiction Test. *Computes In Human Behaviour* 29: 1212-1223.
 39. Young KS (1999) *Internet Addiction: Symptoms, Evaluation, And Treatment*.
 40. Busari AO (2011) Validation of Student Academic Stress Scale (SASS). *European Journal of Social Sciences* 21: 94-105.
 41. Young K, Abreu CN (2011) *Internet Addiction*. John Wiley & Sons Inc, Hoboken, Hudson, New Jersey, United States.
 42. Davis RA, Flett GL, Besser A (2002) Validation of a new scale for measuring problematic Internet use: Implications for pre-employment screening. *CyberPsychology & Behavior* 5: 331-345.
 43. Azim DMBF, Zam NABM, Rahman WRA (2009) Internet addiction between Malaysian male and female undergraduate human sciences students of the International Islamic University Malaysia. *Psycho-Behavioral Science and Quality of Life*.
 44. Mythily S, Qiu M, Winslow (2008) Prevalence and correlates of excessive Internet use among youth in Singapore. *Annals Academy of Medicine Singapore* 37: 9-14.
 45. Serin NB (2011) An examination of predictor variables for problematic Internet use Turkish Online. *Journal of Educational Technology* 10: 54-62.
 46. Canbaz S, Sunter AT, Peksen Y, Canbaz MA (2009) Prevalence of the pathological Internet use in a sample of Turkish school adolescents. *Iranian Journal of Public Health* 38: 64-71.
 47. Fisoun V, Floros G, Geroukalis D, Ioannidi N, Farkonas N, et al. (2012) Internet addiction in the island of Hippocrates: The associations between Internet abuse and adolescent off-line behaviours. *Child and Adolescent Mental Health* 17: 37-44.
 48. Odaci H, Kalkan M (2010) Problematic Internet use, loneliness and dating anxiety among young adult university students. *Computers & Education* 55: 1091-1097.
 49. Ko C, Yen J, Chen CS, Chen CC, Yee D (2008) Psychiatric comorbidity of Internet addiction in college students: An interview study. *CNS Spectrum* 13: 147-153.
 50. Sepehrian F, Lotf JJ (2011) The rate of prevalence in the Internet addiction and

- its relationship with anxiety and students' field of study. *Australian Journal of Basic and Applied Sciences* 5: 1202-1206.
51. Chakraborty K, Basu D, Kumar KGV (2010) Internet addiction: Consensus, controversies, and the way ahead. *East Asian Arch Psychiatry* 20: 123-132
52. Hardie MY, Tee (2007) Excessive Internet use: The role of personality, loneliness and social support networks in Internet addiction. *Australian Journal of Emerging Technologies and Society* 5: 34-47.
53. Cho SM, Sung MJ, Shin KM, Lim KY, Shin YM (2013) Does psychopathology in childhood predict internet addiction in male adolescents. *Child Psychiatry Hum Dev* 44: 549-555
54. Christos (2007) Internet addiction among Greek university students *CNS Drugs* 22: 353-365.
55. Caplan SE (2007) Relations among loneliness, social anxiety, and problematic Internet use. *CyberPsychology & Behaviour* 10: 234-242.
56. Lee G, Choi S, Kong J (2011) The effects of parents-children dysfunctional communication and academic stress on adolescents' suicide ideation: Focusing on the mediating effects of depression and gender differences. *Korean Journal of Adolescents* 18: 83-107.
57. Nie NH, Hillygus DS, Erbring L (2008) Internet use, interpersonal relations, and sociability. *The Internet in everyday life*.
58. American Psychiatric Association (2013) *Diagnostic and Statistical Manual of Mental Disorders (5th edn)*. American Psychiatric Publishing, Arlington.
59. Bulut Serin N (2011) An Examination of Predictor Variables for Problematic Internet Use. *Turkish Online Journal of Educational Technology* 10: 54-62.
60. Byun S, Ruffini C, Mills JE, Douglas AE, Niang M (2009) Internet Addiction: Metasynthesis of 1996-2006 quantitative research. *Cyberpsychology & Behaviour* 12: 203-207.
61. Beato G (2010) Internet addiction: What once was a parody may soon be diagnostic.
62. Cecilia C, Li Y (2014) Internet Addiction Prevalence and Quality of (Real) Life: A Meta-Analysis of 31 Nations Across Seven World Regions. *Cyberpsychology, Behaviour, and Social Networking* 17: 755-760.
63. Ceyhan AA, Ceyhan E (2008) Loneliness, depression, and computer self-efficacy as predictors of problematic internet use. *CyberPsychology & Behaviour* 11: 699-701.
64. Ceyhan E (2007) University students' problematic internet use in terms of reasons for Internet use. 6th WSEAS International Conference on Education and Educational Technology, Italy.
65. Ceyhan E (2008) A risk factor for adolescent mental health: Internet addiction. *Journal of Child and Adolescent Mental Health* 15: 109-116.
66. G David (2014) Problematic Internet Use: Young people and the online world are synonymous, but when does it become excessive. *Centre for Internet Behaviour*.
67. De Leo JA, Wulfert E (2013) Problematic internet use and other risky behaviours in college students. An application of problem-behaviour theory *Psychology of Addictive Behaviours*, 27: 133-141.
68. Dreier M, Wöfling K, Müller KW (2013) Psychological Research and a Sociological Perspective on Problematic and Addictive Computer Game Use in Adolescents. *Internet Addiction. A Public Health Concern in Adolescence*, New York: Nova Science Publishers 87-110.
69. Ferraro G (2007) Internet addiction disorder: An Italian study. *CyberPsychology & Behaviour* 10: 170-175.
70. Grassani E (2014) *L'assuefazione tecnologica. Metamorfosi del sistema uomo-macchina*: Editoriale Delfino (Milan, Italy).
71. Grohol O (2014) Internet Addiction and Online Addiction. *International journal of economic sciences and applied research* 3: 49-74.
72. Kandell JJ (1998) Internet addiction on campus: The vulnerability of college students. *CyberPsychology&Behaviour* 1: 11-17.
73. Kim B, Park J (2013) The effects of academic stress on depression in adolescents: The moderating role of response styles. *Korean Journal of Child Studies* 34: 113-128.
74. Ma HK (2011) Internet addiction and antisocial Internet behaviour of adolescents. *The Scientific World Journal* 11: 2187-2196.
75. Masters K (2015) Social Networking Addiction among Health Sciences Students in Oman. *Sultan Qaboos University Medical Journal* 15: 357-363.
76. Moreno MA, Jelenchick LA, Cox E, Young H, Christakis DA (2011) Problematic internet use among US youth: A systematic review. *Archives of Pediatrics and Adolescent Medicine* 165: 797-805.
77. Moreno MA, Jelenchick LA, Christakis DA (2013) Problematic internet use among older adolescents: A conceptual framework. *Computers in Human Behaviour* 29: 1879-1887.
78. Pawlikowski M, Altstötter-Gleich C, Brand M (2013) Pathological internet use: It is a multidimensional and not a unidimensional construct. *Addiction Research & Theory*.
79. Tang J, Yu Y, Du Y, Ma Y, Zhang D, et al. (2014) Prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users. *Addict. Behav.* 39: 744-747.
80. Weng CB, Qian RB, Fu XM, Lin B, Han XP, et al. (2013) Gray matter and white matter abnormalities in online game addiction. *Eur J Radiol* 82: 1308-1312.
81. Winkler A, Dörsing B, Rief W, Shen Y, Glombiewski JA (2013) Treatment of internet addiction: A meta-analysis. *Clinical Psychology Review* 33: 317-329.
82. Young KS (2007) Treatment Outcomes with Internet Addicts. *Cyber Psychology & Behaviour* 10: 671-679.
83. Young K (2009) Issues for Internet Addiction as a New Diagnosis in the DSM-V. *American Psychological Association*.
84. Young K (2009) Understanding online gaming addiction and treatment issues for adolescents. *The American Journal of Family Therapy* 37: 355-356.
85. Yuan KE, Wei Q, Guihong W, Fang Z, Liyan Z, et al. (2011) Microstructure abnormalities in adolescents with internet addiction disorder. *PLoS one*.
86. Zhou Y, Lin FC, Du YS, Qin LD, Zhao ZM, et al. (2009) Gray matter abnormalities in Internet addiction: A voxel-based morphometry study. *European Journal of Radiology* 79: 92-95.