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Influence of Gender and Marital Status on Mobile Phone Addictive Behaviours of Students Exposed to Cognitive and Behavioural Therapies

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Abstract:
The study was to investigate the influence of gender and marital status on mobile phone addictive behaviours of students exposed to cognitive and behavioural therapies. Sixty research participants (undergraduate regular students from three Colleges in the University of Cape Coast) were involved in the study. The multistage sampling technique was used in the selection of the research participants. The quasi-experimental pre-test, post-test (non-equivalent) control group design was employed to conduct the study. Three groups were involved in the study: two experimental groups and a control group. An adapted form of Choliz (2012) Test of Mobile Phone Dependence was used to collect the data. It was a structured questionnaire on a 5-point Likert-type scale, consisting of sixty (60) items. Two-way Analysis of Covariance (ANCOVA)at an alpha level of .05was used to test the hypotheses. The main findings revealed that gender and marital status did not have a significant influence on mobile phone addictive behaviours of students exposed to cognitive and behavioural therapies. Both male and female participants who were either single or married did not necessarily respond differently to both therapies. Based on the findings, it was recommended that any of the therapies can reduce mobile phone addiction regardless of gender and marital status. Counsellors should therefore apply any of the therapies in dealing with the mobile phone addictive behaviours of their clients irrespective of their gender and marital status.

Keywords: Cognitive Therapy, Behavioural Therapy, Mobile Phone Addictive Behaviours, marital status, gender

1. Introduction

Mobile technology is evolving at a very fast rate and globally, there has been tremendous growth in the use of mobile phones. The mobile phone also known as the cell phone is a portable device that can be used to communicate among others over a wide area, without a physical connection to a network. They have become a necessity and popular for many people throughout the world. They are seen to be powerful and versatile tools to the extent that, for many of us, we feel indispensable when they are not physically attached to us. Many aspects of our everyday lifestyle have been touched and transformed with the use of this device due to its numerous functionalities. For example, on the Ghanaian University campuses, students are not restricted to the use of mobile phones. They are actively engaged in using their mobile phones for a variety of purposes such ascending messages, receiving calls, taking snapshots and selfies, among others. They are always preoccupied in the mobile phone realms. The multifunctional nature of the device has attracted the attention of both the young and the old and it is very rare to see them not clinging to mobile phones in public places. Students of different ages, economic status, and sex now own and use mobile phones. It is particularly observed that cell phone use is rapidly becoming integrated into their daily lives. They frequently take delight in searching for technological updates in communication technology. Bhutia and Tariang (2016), for example, observed that mobile phones are commonly patronised by college students.

Mobile phone, which can be described as one of the fastest-growing communication technologies, is more prevalent among students. Mobile phones have allowed a lot of students to become accessible to each other frequently and in more places. A study by Balakrishnan and Raj (2012) found that mobile phones are popular among students onuniversity campuses. The usage promotes togetherness, sharing of security information in times of danger. Cell phones aid students in managing their academic exercises, such as organizing assignments and finding course information, with ease (Tossell, Kortum, Shepard, Rahmati, & Zhong, 2015).

Although cell phones immensely contribute towards students' academic effort, they could be harmful depending on the extent of use. Many students are cultivating the habit of mobile phone dependency which appears to hurt their academic work. Findings of a study by Goswami and Singh (2016), showed that mobile phones can impair students' learning. A study by Liu (2017) revealed that mobile phone dependency can lead to psychosocial and personal challenges that affect the individual's wellbeing. Other studies confirm the harmful effects mobile phones have on physical, clinical

and psychological health (Leihan, 2016). Research findings indicate that students are so much absorbed with the use of mobile phones such that its harmful effects are not recognised (Moeller, 2010).

Currently, mobile phone gadget is not only a learning tool for both male and female students. According to Chen (2006), females and males use mobile phones for social purposes and technological work, respectively. Tulane (2010) reported that females engage in texting to relax and connect with others more than their male counterparts do. Beaver (2010) confirmed that cell phone patronage was higher among females than males. Grellhesl and Puny anunt-Carter (2012) also identified that female students were glued to their mobile phones more than males. They further inducted that women are prone to become mobile phone addicts than men. Men use their mobile phones less for social purposes; hence they go through less social stress than women.

Male and female students' reliance on mobile phone device is rapidly increasing and it is very rare seeing them around without having access to their cell phones. Mobile phones have imprinted themselves in their lives to the extent that, they can be described as technophiles rather than technophobes. A study by Roberts and Williams (2016) indicated that students spend a lot of time manipulating their cell phones. Most of their interest is centred on texting, email, Facebook, web browsing, and listening to music in that order. Students see their mobile phones as 'companion' which is indispensable in their lives (Cohan, 2016). They become psychologically dependent and restless without mobile phones (Leihan, 2016). A study conducted by Brian (2013) indicated that a student who was manipulating his mobile phone slept with it beneath his pillow. This explains how intense students want their mobile phones with them at all times, and when their phones are not with them, they suffer from separation anxiety. Students who are married cannot be left out. Even though technological growth and adoption have endowed students with myriad advantages, it has also resulted in some unintended consequences which have impacted marital status. Students who are married and possess mobile phones do experience the enormous influence of mobile phone dependency (Brian, 2013). Hertlein and Blumer (2013) have argued that the new wave of technological advancement is unnoticeably and gradually interfering in their relationship. A study by Bhardwaj and Ashok (2015) found that mobile phone dependency can affect one's social connectedness leading to loneliness. Relationships have all been impacted by widespread technological advancements. Although, partners may be close to each other, the attachment can be weak. This is because their mobile phone pattern use supersedes interactions with each other. Media use specifically mobile phones is separating people from one another.

Through excessive use of mobile phones, many students' attitude has changed. Both single and married students devote more time and energy in its use without realising its harmful effects. Many of them feel so bereft or disconnected when they do not have their mobile phones on them.

Mobile phone dependency, a widely prevalent but unspoken issue, is gradually and silently creeping into the lives of many students. Both male and female students, including the single and married, have become habitual users of mobile phones and this maximum level of mobile phone attachment could serve as distractions to them. Mobile phone dependency which can be compared to any other behavioural disorder or addiction such as gambling, internet, and games is quietly causing more unseen harm than good and can reduce the quality of life. Behavioural addiction does not necessarily refer to drug or substance abuse, it also includes gambling, internet, games, or even smartphones (Lee, 2006).The International Classification of Diseases- 10 (ICD –10) and The Diagnostic and Statistical Manual of Mental Disorders- 5 (DSM-5); are considering mobile phone dependency as a new diagnostic entity taking into account its properties of excessive use, withdrawal, tolerance and negative repercussions.

Operationally, Griffiths (2005) defines behavioural addiction by using six key components namely: salience, mood modification, tolerance, withdrawal symptoms, conflict references and relapse. Salience means that behaviour becomes the most noticeable activity in a person's life and tends to control his or her attitude. The emotional effect the behaviour has on the individual is mood modification. It serves as a coping strategy and is seen as the arousing 'rush' or the numbing or the tranquillizing 'escape' the behaviour provides. Tolerance is the process whereby increasing amounts of the behaviour are required to achieve the former mood modifying effects, often meaning greater periods are spent engaging in the behaviour. Withdrawal symptoms are the distressful feelings (e.g., the shakes, moodiness, irritability) that happens when the person is unable to engage in the behaviour. Conflict is the disagreement between the person and others (i.e., interpersonal conflict), with other activities (i.e., social life, work, hobbies and interests) or within the individual him or herself (i.e., intrapsychic conflict) that are concerned with spending too much time in the addictive behaviour. Relapse refers to going back into previous excessive behaviour after improving.

Mobile phone dependence which can now be described as a problem where people are attached to their mobile phone use to the extent that they become oblivious of other areas in their lives needs to be addressed. The researchers are therefore interested to find out whether cognitive therapy or behavioural therapy which other researchers have already used as an intervention for many behavioural disorders can work for male and female students as well as those who were single and married. Thus, whether male and female students, the single and the married will respond differently to cognitive and behavioural therapies. Behavioural therapy is a therapeutic approach which involves treatment that helps change potentially self-destructing behaviours. This treatment approach is based on learning theory as well as on the idea that abnormal behaviour is learned. The basic premise is that learned behaviours that are problematic and maladaptive, can be unlearned. The behavioural model holds that most behaviours that are problematic are developed, maintained, and changed primarily through learning. In behaviour therapy, reinforcement is used to get clients of all ages to engage in adaptive behaviours. This treatment approach involves the systematic application of the principles of learning to the treatment of psychological disorders. It is aimed to treat psychopathology through techniques like (shaping, positive reinforcement, and fixed-interval schedule) that are designed to reinforce desired behaviours while eliminating undesired

behaviours. An emphasis on learning is a final theme that defines behavioural therapy and distinguishes it from other types of psychotherapy.

Cognitive therapy, on the other hand, is also a therapeutic approach that seeks to help clients overcome difficulties by identifying and changing dysfunctional thought patterns that mostly cause maladaptive behaviours. The major principle of cognitive therapy is that there is a relationship between how people perceive and process reality and the way they feel and behave. This psychological treatment helps to address the interactions between thoughts, emotions, and behaviours. Cognitive therapy helps clients to understand the thoughts and feelings that influence behaviours and through the use of its techniques such as thought challenging, cognitive rehearsal, thought recording, and thought stopping, students can be helped to change their dependent thought patterns and improve their quality of life.

1.1. Objectives

The study was to determine the influence of gender and marital status on mobile phone addictive behaviours of participants exposed to cognitive and behavioural therapies.

1.2. Hypotheses

- H_1 1: There is a significant difference in the mobile phone addictive behaviours of students exposed to cognitive therapy and behavioural therapy based on gender.
- H_1 2: There is a significant difference in the mobile phone addictive behaviours of students exposed to cognitive therapy and behavioural therapy based on marital status.

2. Methodology

The study design that was adopted was quasi-experimental pre-test, post-test (non - equivalent) control group. It involved three groups; two experimental groups and a control group.

This design was preferred because the study was conducted under the conditions that did not permit the random assignment of participants to conditions. Also, its approaches were cost-effective in terms of time and resources. There was no involvement of extensive pre-screening and randomization. Again, the design was preferred because it was more frequently used, more practical and feasible to conduct research. It was also suitable for real natural world setting.

2.1 Sample and Sampling Procedure

A total sample of sixty (60) third-year undergraduate regular students were selected for the study. Twenty (20) students each were selected from three out of the five Colleges in the University of Cape Coast. The Colleges were selected randomly. This sample was preferred because Frankeal and Wallen (1993), indicated that, in experimental studies, at least 30 individuals per group is recommended. Although, sometimes, experimental studies with only 15 individuals in each group can be defended if they are very tightly controlled; studies using only 15 subjects per group should probably be replicated, however, before too much is made of any findings.

An adapted form of Choliz (2012) Test of Mobile-phone Dependence (TMD) was purposively used in the selection of the participants who had mobile phones and exhibited mobile phone addictive behaviours. (See Table 1).

College	Department	Class size	Mobile Phone Addicts	Sample Size
Health and Allied Sciences	Medical Laboratory Sciences	140	80	20
Humanities and Legal Studies	Population and Health	29	27	20
Education Studies	Health, Physical Education and Recreation	53	39	20

Table 1: Selection of Participants for the Study

2.2. Instrumentation

The adapted form of Choliz (2012) Test of Mobile-phone Dependence (TMD) was used for the study. The instrument was made up of 62 items and was categorized under sections A& B. Section A of the questionnaire requested demographic details of the participants such as sex, and marital status. In section B, participant's reactions to statements on the six components of mobile phone addictive behaviours were elicited using the instrument. These statements were put under six sub-scales (1. Students' internet surfing behaviour,2. students' text messaging behaviour (WhatsApp/SMS), 3. students' mobile phone calling behaviour,4. students' mobile phone use as a source of entertainment, 5. students' mobile phone etiquette, and 6. length of time students spend with their mobile phones). The scales were measured using a 5-point Likert-type scale (1 = Strongly Disagree, 2 = Disagree, 3= Neutral, 4 = Agree, 5 = Strongly Agree).

The reliability coefficients of the questionnaire were determined using Cronbach's alpha reliability coefficient. The reliability coefficients of the sub-scales are presented in Table (2).

Sub-scale	No. of Items	Reliability Coefficients
Student's Internet Surfing Behaviour	10	.86
Student's Text Messaging Behaviour	10	.85
Student's Mobile Phone Calling Behaviour	10	.85
Mobile Phone Use as a Source of Entertainment	10	.85
Length of Time Students Spend with their Mobile Phones	10	.82
Student's Mobile Phone Etiquette	10	.73
Overall	60	.88

Table 2: Reliability Coefficients
Source: Field Data, Edjah (2019)

2.3. Data Collection Procedure

To assist in the data collection, three graduate research assistants were given two days of training before pilot testing of the questionnaire. This was done to ensure that they understood the context of the research topic. They were briefed on the objectives of the study as well as taught the various learning principles and techniques of cognitive and behavioural approaches and how they are applied to change behaviour.

At an agreed date and time, the selected participants for the study remained in their intact group without any random assignment. Participants were put into three groups (namely A, B and C). Participants in groups A and B received the cognitive and behavioural therapies, respectively while those in group C remained as the control group. The control group was exposed to lessons that added value to their lives but not related to the use of the therapies (cognitive and behavioural) in reducing mobile phone addictive behaviours.

Each experimental group was taught twice in a week and this was done under the supervision of the researchers. Each session lasted 50 minutes. The duration period of 11 weeks was used to teach the participants the various learning principles and approaches in Cognitive therapy (Thought Challenging, Cognitive Rehearsal, Thought Recording and Thought Stopping) and Behavioural therapy (Positive reinforcements, Fixed interval schedule, Negative reinforcement and shaping) to reduce mobile phone dependency. The duration for the intervention package (i.e., 22 sessions of 50 minutes per session) was considered adequate to achieve the aim. Siegle, Carter and Thase (2006) proposed a 16-session therapy. All the treatment sessions were held after lecture hours to avoid disrupting participant's regular lectures and other university programmes. To minimize any form of interaction which could affect the outcome of the study, the researchers ensured that each experimental group attended scheduled periods on the same day but in different venues.

2.4. Data Analysis

The data was edited and coded by the researchers. It was then followed by data entry, error detection and data tabulation. In analysing the data, two-way Analysis of Covariance (ANCOVA) was used to test the Hypotheses.

2.5 Ethical Consideration

In carrying out the study, ethical clearance was obtained from the College of Education Studies Ethical Review Board. The researchers explained the purpose of the study to the participants. The participants were also assured that they could decline or withdraw from the study at any time.

3. Results

3.1. Demographic Data of Participants

The demographic data of participants focused on their gender and marital status.

SEX	GROUPS						Total	
	Control		Behavioural		Cognitive			
	N	%	N	%	N	%	N	%
Male	13	65.0	12	60.0	12	60.0	37	61.7
Female	7	35.0	8	40.0	8	40.0	23	38.3
Total	20	100.0	20	100.0	20	100.0	60	100.0

Table 3: Sex Distribution of Participants
Source: Field Work, Edjah (2019)

From Table 3, out of 60 participants in the study, 37 (61.7%) were males and 23 (38.3%) were females. There were 13 (65.0%) of the males in the control group and 12 (60%) each in the behavioural and cognitive groups respectively.

In the case of the females, 7 (35%) were in the control group while 8 (40%) each were in the behavioural and cognitive groups respectively. It can therefore be said that male participants dominated the study.

Marital Status	GROUPS						Total	
	Control		Behavioural		Cognitive			
	N	%	N	%	N	%	N	%
Married	3	15.0	5	25.0	5	25.0	13	21.7
Single	17	85.0	15	75.0	15	75.0	47	78.3
Total	20	100.0	20	100.0	20	100.0	60	100.0

Table 4: Distribution of Participants by Marital Status
Source: Field Work, Edjah (2019)

From Table 4, most of the participants 47 (78.3%) were single whereas 13 (21.7%) were married.

3.2. Hypothesis 1

- H_1: There is a significant difference in the mobile phone addictive behaviours of students exposed to cognitive therapy and behavioural therapy based on gender.

This hypothesis sought to determine the gender differences in the mobile phone addictive behaviours of students in experimental groups. A two-way ANCOVA was performed to test the differences. Table 5 presents the test for the results.

Source	df	Mean Square	F	Sig.	Partial Eta Squared (η_p^2)
Pre-test	1	1716.325	2.015	.162	.037
Group	2	7193.532	8.444	.001*	.242
Gender	1	631.560	.741	.393	.014
Group*Gender	2	125.226	.147	.864	.006
Error	53	851.893			

Table 5: Two-Way ANCOVA Test for Differences between Cognitive Therapy and
Behavioural Therapy Based on Gender
*Source: Field Work, Edjah (2019); *Significant, P< .05*

A2 by 3 between-groups ANCOVA was conducted to determine gender differences in the mobile phone addictive behaviours of students in cognitive therapy and behavioural therapy. There was no significant interaction effect between gender and the groups, $F(2, 53) = .147$, $p = .864$, $\eta p^2 = .006$. Also, there was no significant gender effect, $F(1, 53) = .741$, $p = .393$, $\eta p2 = .014$. This result suggests that males and females did not respond differently to cognitive therapy and behavioural therapy. This implies that cognitive therapy and behavioural therapy worked equally for both males and females. The results showed a significant main effect for the groups, $F(2, 53) = 8.44$, $p = .001$, $\eta p^2 = .242$.

3.3. Hypothesis 2

- H_1 2: There is a significant difference in the mobile phone addictive behaviours of students exposed to cognitive therapy and behavioural therapy based on marital status.

This hypothesis sought to determine the differences in mobile phone addictive behaviours of students exposed to cognitive therapy and behavioural therapy based on marital status. This hypothesis was tested using a two-way ANCOVA. The results are presented in Table 6.

Source	df	Mean Square	F	Sig.	Partial Eta Squared (η_p^2)
Pre-test	1	1506.388	1.777	.188	.032
Group	2	5527.487	6.522	.003*	.198
Marital Status	1	753.040	.889	.350	.016
Group*Marital Status	2	174.230	.206	.815	.008
Error	53	847.511			

Table 6: Two-Way ANCOVA Test for Differences between Cognitive Therapy and
Behavioural Therapy Based On Marital Status
*Source: Field Work, Edjah (2019); *Significant, P< .05*

The result from the 2 by 3 between-group ANCOVA indicates no significant interaction effect between marital status and the groups, $F(2, 53) = .21$, $p = .815$, $\eta p^2 = .008$. Further, there was no significant marital status effect, $F(1, 53) = .889$, $p = .350$, $\eta p2 = .016$. This result indicates that participants who were single and those who were married did not necessarily respond differently to cognitive therapy and behavioural therapy. This implies that cognitive therapy and behavioural therapy worked equally for both participants who are married and those who are single. There was, however, significant main effect for the groups, $F(2, 53) = 6.52$, $p = .003$, $\eta p^2 = .198$.

4. Discussion

Even though findings of the study showed that both cognitive therapy and behavioural therapy are effective, these therapies were gender-neutral in their effects on mobile phone addiction. That is, cognitive therapy and behavioural therapy worked equally for males and females. An earlier report by Chen (2006) that there was no significant difference in mobile phone addiction between male and female and Bianchi and Phillip (2005) that the appeal of mobile phones was gender-neutral is confirmed in the study even with the use of cognitive therapy and behavioural therapy. The participants' adoption of the various learning skills and strategies perhaps explain the outcome of the results. The reward regimes and the cognitive restructuring approaches worked equally on the participants. For example, the Skinnerian concept of operant conditioning which was his technique of shaping and modifying behaviour as well as his conviction that positive reinforcement can shape behaviour with the higher probability of re-occurrence is confirmed.

On the other hand, participants exposed to cognitive therapy were helped through the various cognitive techniques to find out their uncomfortable thoughts and assess how meaningful the thoughts were. They were able to change their misplaced thinking and think more meaningfully to initiate a desired behavioural change. Practising the skills, they learnt and the self-help assignment might have facilitated a behaviour change. Thus, participants were able to acquire new skills to change their undesirable behaviours.

The findings that participants who were single and those who were married did not necessarily respond differently to cognitive therapy and behavioural therapy was not surprising. The homework and assignments that were given in-between sessions helped participants in the two experimental groups to learn how to apply the learning skills and strategies to solve specific mobile phone dependency behaviours. In order words, the teaching and learning sessions were critical for participants to identify their strengths and weaknesses in dealing with the addictive behaviours. The implementation of the learning strategies in the participants' actual life was responsible for the behaviour change (i.e. providing feedbacks for the homework and assignment) brought about a behaviour change. In behavioural terms, 'the Law of Exercise comes into play'. To be precise, 'the Law of Exercise' is indicative that, 'practice makes perfect'. The insight participants gained within the sessions were tremendously translated into action notwithstanding their marital status. Thus, the mobile phone addictive behaviours of participants who were single and married gradually reduced.

5. Conclusion

From the study, it was found out that male and female participants who were single, as well as married, did not necessarily respond differently to cognitive therapy and behavioural therapy. This means that cognitive therapy and behavioural therapy can reduce mobile phone addictive behaviours regardless of gender and marital status.

6. Counseling Implications

- Both male and female students who are single, as well as married, have the ability and capacity to succeed in readjusting and controlling their mobile phone addictive behaviours using cognitive and behavioural strategies.
- Guidance workshops or clinics should be held to educate students on the existence of behavioural addiction such as mobile phone addiction and the efficacy of the therapies (cognitive and behavioural) in modifying the behaviour of students with psychological disorders like mobile phone addiction, anxiety and depression.

7. Recommendations

- Since the effectiveness of the two therapies is not gender-specific, counsellors should apply any of the therapies in dealing with mobile phone addictive behaviours of male and female students.
- Both therapies can reduce mobile phone addiction regardless of marital status. Counsellors can therefore apply any of the therapies in dealing with the mobile phone addictive behaviours of their clients irrespective of their marital status.

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