

# Leisure Boredom, Loneliness and Self-Control in Women Candy Crush Gamers

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**Abstract:** *The purpose of this study was to observe whether there are any age differences in women candy crush users and addicts in terms of leisure boredom, loneliness and self-control and whether there is any relationship between leisure boredom, loneliness and self-control among young and middle-aged women candy crush gamers. A sample of 120 young and middle-aged women candy crush gamers, selected through a purposive sampling technique, the participants responded to the Internet game addiction questionnaire – candy crush scale (Young, 1991), Leisure boredom Scale (Iso-Ahola & Weissinger, 1990), UCLA Loneliness Scale - version 3 (Russell, 1996) and Brief Self-control Scale (BSCS) (Tangney et al., 2004). The results revealed that there was significant difference between young and middle-aged woman candy crush gamers with respect to leisure boredom and loneliness ( $p < 0.05$ ). There was a negative correlation between leisure boredom and self-control among young women candy crush gamers ( $p < 0.05$ ). There was a significant relationship between leisure boredom and loneliness among the middle-aged women candy crush gamers ( $p < 0.01$ ). It was also found that there was significant relationship between loneliness and self-control among the middle-aged women candy crush gamers ( $p < 0.05$ ). This study highlights the importance of encouraging women to enjoy a rich variety of activities which would serve to enhance their productivity, success and well-being.*

**Keywords:** candy crush game, leisure boredom, loneliness, self-control

## 1. Introduction

A game is a form of play, undertaken for enjoyment. Games are distinct from work, which are usually carried out for remuneration. Games have changed their modality from offline to online, from computer to mobile phones. Caillois (1958) defines a game as consisting of 6 characteristics: fun: the activity has light-hearted character, separate: it is circumscribed in time and place, uncertain: the outcome or result is unpredictable, non-productive: participation does not produce anything useful, rules: the activity has rules that are different from everyday life and fictitious: consists of the awareness of a different reality.

Today, because of the opportunity of versatility and rapid mobile services, portable social gaming is picking up its ubiquity overnight. People, particularly youngsters, are turning out to be more addicted or "dependent" to portable social recreations (Chen, 2014). For them, social playing is for killing times, as well as an instrument for enhancing interpersonal relationship.

King Digital entertainment launched a game Candy crush saga which is a match-3 puzzle in the year 2012 for Facebook and smartphones. Candy crush saga is a standout amongst the most engaging and lucrative social games. It was titled as the "Best Social Game" by 9<sup>th</sup> Universal Portable Gaming Honors, the world's biggest rivalry for versatile diversions (IMGA, 2013). Think Gaming (2014), a gaming investigation organization, evaluated that candy crush took in US\$902,191 every day.

Players can blend and match desserts in a mix of three or more to pick up focuses and different rewards. After associated with Facebook account, players can discover their friends and own levels by means of a guide and can help their friends through invitations, sending additional moves and lives. With ensured versatility and compactness, it is can

be played at any place and at any time. The developer, King, reports that an estimated amount of \$800,000 is spent daily by the players on purchases of new lives or boosters that helps to clear the difficult levels.

The reasons that make it addictive is, it is very simple, just matching 3 candies of same colour. At the beginning it is easy to pass levels and this gives satisfaction, these accomplishments give small rewards to brain releasing the neurochemical dopamine. This results in neuro-activity which leads to addiction and reinforcing our actions (Dockterman, 2013).

Recent researches show that Internet game playing triggered a neurological response connected to pleasant feelings and this resulted in addictive behavior (American Psychiatric Association, 2013). The criteria for knowing Internet Gaming Disorder was similar to the Predictors of Mobile Social Game Addiction by Young (1996), however two statements were included in the DSM-V, in particular "loss of enthusiasm for past leisure activities" and "continuing the use in spite facing problems" (APA, 2013).

The predominance of candy crush saga likewise activated numerous issues. Players reported that they had left their youngsters stranded at school, relinquished housework and even harmed themselves as they attempted to reach new levels (Miller, 2013). These truths exhibit that Candy crush saga is anything but difficult to be addictive. Also, past examination has found that high recurrence diversion playing may adversely impact players' wellbeing and practices, for example, poor scholarly execution, subjective contortion (Li & Wang, 2013), low nature of interpersonal connections, social nervousness (Lo, Wang & Fang, 2005), anxiety and sleep disturbances (Sara, Annika & Mats, 2011), and dangerous practices taken (O'Connor et al, 2013).

According to a report on candy crush saga addiction, nearly 15 million people were addicted to Candy crush saga and

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among them 70% were women (Wall street journal, 2013). This information has changed the belief that only men are addicted to games (Billieux et al., 2013) and also shows the tendency of candy crush players to get addicted. Particularly, players change their time in phone to skip the waiting time between the games and would delete the candy crush app to cut back the playing time but re-install it later. They would play a same level for months together just in order to clear it. Therefore, the main goal for this exploratory study is to understand and investigate the Candy crush game addiction in women.

Boredom is a negative mood or state in which individual lacks interest and is unable to concentrate (Fisher, 1993). When disposing with leisure activities, if the time is not ideally spent, individuals may encounter leisure boredom, which was characterized as "the subjective recognition that accessible recreation encounters are not adequate to instrumentally fulfil requirements for ideal excitement" (Iso-Ahola & Weissinger, 1990). "Optimal arousal" is the key idea of leisure boredom, which implies "a lot of or too little incitements are mentally adverse" (Berlyne, 1960). Phillips (1993) pointed out that having too much of time is central to boredom. Besides, past researchers have outlined a few circumstances when teenagers may experience leisure boredom, for example, leisure arrangements are not satisfactory, needs are not met by their leisure encounters, aptitudes are missing to partake in relaxation and leisure activities are insufficiently challenging (Iso-Ahola & Weissinger, 1990). A threat with boredom is that it may prompt distinctive types of fixation or addictions. For instance, a positive relationship between leisure boredom and mobile phone addiction was found among youngsters and youthful grown-ups aged between 14-20 years in Hong Kong (Leung, 2008). Beside, a study focusing on Happy Farm discovered that escaping loneliness is a possible reason for SNS (Social Networking Sites) game addiction (Zhou & Leung, 2013). Although playing game is for entertainment, the relationship between leisure boredom and game use should not be neglected.

Loneliness is an upsetting issue that almost everybody has encountered (Rubinstein, Phillip & Peplau, 1979). Researchers characterized loneliness as a "social shortage" (Saklofske, Yackulic & Kelly, 1986), where "a man's system of social connections is little or less fulfilling than the individual cravings" (Peplau & Perlman, 1979). In light of past studies, the UCLA Loneliness Scale (Russell, Peplau & Ferguson, 1978; Russell, Peplau & Cutrona, 1980; Russell, 1996) was set up as a standard to know the degree of loneliness. In view of a few studies, individuals who depict themselves as lonely were restrained socially (Horowitz & French, 1979) and sensitive to rejection (Russell, Peplau, & Cutrona, 1980). In spite of the fact that loneliness has numerous unfavorable impacts, past studies demonstrated that changes in interpersonal social networks may reduce the level of loneliness. Lonely individuals were more likely to express themselves on the Internet (McKenna, Greene & Gleason, 2002).

Candy Crush Saga urges players to collaborate with their friends. Without the help, they can't open the next level instantly unless buying boosters or waiting for quite a while.

For lonely players, who experience issues in keeping up stable friendships or unable to communicate, Candy Crush Saga "powers" them to unite and respond, which may reduce the degree of loneliness and later increases the playing time.

Self-control is "the capacity to override or change one's internal reactions and additionally to hinder undesired behavioral inclination and hold back on acting upon them" (Tangney, Baumeister & Boone, 2004). A great part of the studies focused that self-control is an intellectual conduct in enduring fleeting uneasiness to accomplish long term objectives or goals (Loewenstein, 1996; Myrseth & Fishbach, 2009). People who avoid temporary pleasures for more benefits later in life are said to be self-controllers (McReynolds, Green & Fisher, 1983). Additionally, Tangney, Baumeister and Boone (2004) contended that the capacity of self-control differs from individual to individual. It is a wide spread belief that the main reason for addictive behavior is lack of self-control. Several psychological characteristics such as self-control may predict online game addiction (Kim et al., 2008).

Addicts thought they played mobile social game to kill time or relaxation, but instead, it was because they were lonely and leisurely bored. As expected, frequent players had a higher tendency to become addicts. In particular, loneliness and self-control were significant predictors of mobile social game addiction while leisure boredom was linked to intensity of game use. The psychological factors like loneliness and self-control were found to be significant predictors of mobile social game addiction (Chen, 2014). Game addiction was related to Gratifications, self-esteem, leisure boredom and loneliness (Zhou, 2010). Self-control is negatively correlated to online game addiction (Kim, Namkoong & Kim, 2008). Teenagers are likely to occupy their leisure time with online games (Wang, Chen, Lin & Wang, 2008). Gaming addiction is related to psychological needs of an individual and Analysis of the results indicated that psychological needs and motivations could be categorized into the following seven themes: (entertainment and leisure, emotional coping diversions from loneliness, isolation and boredom, releasing stress, relaxation, discharging anger and frustration), escaping from reality, satisfying interpersonal and social needs, the need for achievement, the need for excitement and challenge, and the need for power (Wan & Chiou, 2006).

As previous studies have consistently reported that psychological factors were related to addictive behaviors, this study attempts to identify psychological factors of game addiction. Considering the lack of similar research in this area and the increasing candy crush addiction in women, this exploratory study takes characteristics such as leisure boredom, loneliness and self-control to investigate the relationship between them and differentiate the addicts and non-addicts in younger and older women.

### 1.1 Objectives

1. To observe whether there are any age differences in women candy crush users and addicts in terms of leisure boredom, loneliness and self-control.

2. To study whether there is a relationship between leisure boredom, loneliness and self-control among young (20-30 years) and middle-aged (40-50 years) women candy crush gamers.

## 2. Method

### 2.1 Research Design

The present study adopts a between groups design to determine whether there are any age differences (young: 20 – 30 years; middle-aged: 40 – 50 years) between women candy crush users and addicts with respect to leisure boredom, loneliness and self-control. This study also adopts a correlation design to determine whether there is any relationship between leisure boredom, loneliness and self-control in young and middle-aged women candy crush users and addicts.

### 2.2 Sample

In the present study, non-probability purposive sampling was used to select a sample of 120 women candy crush gamers in the age range of 20 -30 years (young adulthood) and 40 -50 years (middle adulthood). Out of the total sample, 60 women were candy crush users (30 young adults and 30 middle adults) and 60 women were candy crush gamers (30 young adults and 30 middle adults).

### 2.3 Instruments

Five questionnaires were used in this research. They were:

**2.3.1 Information Schedule:** Participants were asked to provide information pertaining to their age, education, family information and the like, on the Information Schedule.

**2.3.2 Candy crush – screener:** Young’s (1991) internet game addiction questionnaire, which incorporated the unique characteristics of Candy crush, was used. It has 8 items. Two choices (“Yes” and “no”) were applied to assess each statement, and respondents who answered four or more “yes” were regarded as “addicts”. Questions ranged from “Do you feel preoccupied with Candy Crush?” to “Do you use Candy Crush as a way of escaping from problems or of relieving a

distressed mood (e.g. feelings of helplessness, guilt, anxiety, depression)?” The scale has reliability of Cronbach alpha of 0.90 and construct validity of 0.87.

**2.3.3 Leisure boredom:** The Leisure Boredom Scale (Iso-Ahola & Weissinger, 1990) was used to assess “individual differences in perceptions of boredom in leisure” (Iso-Ahola & Weissinger, 1991). The Leisure Boredom Scale consists of 16 items relating to the quality of leisure experiences. The items are rated on a 5-point Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree” was used. The scale has a Cronbach’s alpha coefficient of 0.88. Scores range from 16 – 80. Higher scores indicate experiencing more leisure boredom and low scores mean less leisure boredom.

**2.3.4 Loneliness:** The UCLA Loneliness Scale (version 3) (Russell, 1996) was used to evaluate respondents' feelings of loneliness. Participants rated the items on a 4-point Likert scale ranging from (1) "I never feel this way" to (4) "I often feel this way". The scale has a Cronbach’s coefficient alpha of .94 and convergent validity was indicated by significant correlations with other measures of loneliness. Higher total scores indicate higher levels of loneliness.

**2.3.5 Self-control:** The Brief Self-Control Scale (BSCS) by Tangney et al. (2004) was used to know the ability of a person to control him or herself. Participants rated the items on a 5-point Likert scale ranging from (1) “not at all like me” to (5) “very much like me”. BSCS had 13 items which were related to habit breaking, temptation resistance, and self-discipline. The scale has a Cronbach’s coefficient alpha of .81 and construct validity of .83. Higher scores indicate more self-control and low scores indicate less self-control.

## 3. Results

**Table 1:** Results of Two-Way ANOVA and descriptive statistics with age and intensity of gaming as the IV’s and leisure boredom, loneliness and self-control as the DV’s in young women candy crush addicts (n=30) and users (n=30) and middle-aged women candy crush addicts (n=30) and users (n=30).

Variables	Age		F	Intensity of Gaming		F	Age X Intensity of Gaming (F)
	Young (20-30 years)	Middle aged (40-50 years)		Addicts	Users		
	Mean (SD)	Mean (SD)		Mean (SD)	Mean (SD)		
Leisure Boredom	46.13 (7.46)	48.63 (5.97)	4.11**	47.10 (7.55)	47.67(6.10)	0.21	1.61
Loneliness	47.85 (7.04)	51.10 (10.42)	3.95*	49.03 (9.80)	49.92 (8.19)	0.29	0.01
Self Control	38.70 (5.63)	39.83 (5.79)	1.2	39.33 (6.16)	39.20 (5.28)	0.02	4.00*

\*p<0.05; df for age = 1, df for intensity of gaming = 1

Table 1 reveals that there is significant difference between young and middle-aged women candy crush gamers with respect to leisure boredom (F=4.11, p<0.05). As it is evident from the mean scores, the middle-aged women (M = 48.63) scored significantly higher than the young women (M=46.13) with respect to leisure boredom. Table 1 also

reveals that there is significant difference between young and middle-aged women candy crush gamers with respect to loneliness (F=3.95, p<0.05). As evident from the mean scores, the middle-aged women (M=51.10) scored significantly higher than the young women (M=47.85) with respect to loneliness. However, the results revealed no



significant differences between candy crush addicts and users with respect to leisure boredom, loneliness and self-control.

**Table 2:** Results of the correlation between leisure boredom, loneliness and self-control among young (20-30 years) women candy crush gamers

Correlations (n = 60)		
	Leisure Boredome	Loneliness
Loneliness	.168	
Self Control	-.257*	-.191

\*p<0.05

Table 2 shows that there is a significant negative correlation between leisure boredom and self-control ( $r = -0.25$ ,  $p < 0.05$ ) in young women. In other words, when leisure boredom increases the self-control decreases and vice versa. The negative correlation between loneliness and self-control ( $r = -0.19$ ) was not significant.

**Table 3:** Results of the correlation between leisure boredom, loneliness and self-control among middle-aged (40-50 years) women candy crush gamers

Correlations (n = 60)		
	Leisure Boredome	Loneliness
Loneliness	.512**	
Self Control	-.003	.288*

\*p<0.05, \*\*p<0.01

Table 3 shows that there was a significant positive correlation between leisure boredom and loneliness ( $r = 0.51$ ,  $p < 0.01$ ) among the middle-aged women. In other words, when leisure boredom increases loneliness also increases and vice versa. The table also shows that loneliness had a significant positive correlation with self-control ( $r = 0.28$ ,  $p < 0.05$ ) in the middle-aged women. In other words, when loneliness increases self-control also increases and vice versa. Table 3 also indicates that there was a negative correlation between leisure boredom and self-control ( $r = 0.03$ ). However, it was not found to be significant.

#### 4. Discussion

The objective of the current research was to study age differences in women candy crush users and addicts in terms of leisure boredom, loneliness and self-control. This study also aimed to observe whether there is any relationship between leisure boredom, loneliness and self-control in young and middle-aged women candy crush gamers.

The present study revealed that there was significant difference between young and middle-aged woman candy crush gamers with respect to leisure boredom and loneliness. The middle-aged women scored higher than the young women in terms of leisure boredom and loneliness. This result can be supported by earlier study by Kim, Han & Park (2010) which found that the amount of time that the participants spent playing online games was significantly

greater on weekends than on weekdays with respect to leisure boredom.

The results also indicated that that there was a negative significant relationship between leisure boredom and self-control in young women candy crush gamers. This is in accordance with previous study by Chen (2014) which stated that the psychological factor like self-control was found to be significant predictors of social game addiction. This finding may also be explained in the light of previous research done by Zhou (2010) which have shown that game use and addiction was related to leisure boredom.

The results also revealed that there was a significant relationship between leisure boredom and loneliness in the middle-aged women candy crush gamers. As the leisure boredom increased there was increase in the feeling of loneliness. This finding can be explained in the light of previous study by Wan & Chiou (2006) which showed that gaming use is related to psychological needs of an individual.

The results revealed that there was a significant relationship between loneliness and self-control among the middle-aged women candy crush gamers. Results is also supported by previous study by Chen (2010) which revealed that loneliness and self-control control were significant predictors of mobile social game addiction.

Additionally, the present study revealed that middle-aged women experienced higher leisure boredom and loneliness when compared to young women candy crush gamers. The study also revealed that when leisure boredom increases the self-control decreases in young women candy crush gamers. There was a significant relationship between leisure boredom and loneliness in among the middle-aged women candy crush gamers. There was also significant relationship between loneliness and self-control among the middle-aged women candy crush gamers.

Social game provides an appropriate social platform for lonely individuals to get rid of the unpleasant emotions. Through sending lives and helping friends to unlock requests, lonely people would feel closer to those who share the same interests with them, thus lessening the extent of loneliness and study also indicated that the more self-control the players have, the less the likelihood they will get addicted to mobile social game (Chen, 2010). This finding is consistent with previous studies (Kim et al., 2008; Baumeister, 2003), suggesting that increased self-control would control the use of game to a reasonable degree, thus preventing the addictive tendency. Psychological characteristics such as self-control may predispose some individuals to become addicted to online games (Kim & Kim, 2008).

In conclusion, further research is encouraged to reveal various other psychological factors that cause feelings of boredom and gaming addictions. Middle aged women can be motivated to spend their leisure time in more productive ways. This study highlights the importance of empowering women to take up a variety of meaningful activities which

would serve to enhance their productivity, success, well-being and purpose in life.

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