

Parenting Styles and Their Relation to Videogame Addiction

Petr Květon, Martin Jelínek

Abstract—We try to identify the role of various aspects of parenting style in the phenomenon of videogame playing addiction. Relevant self-report questionnaires were part of a wider set of methods focused on the constructs related to videogame playing. The battery of methods was administered in school settings in paper and pencil form. The research sample consisted of 333 (166 males, 167 females) elementary and high school students at the age between 10 and 19 years ($m=14.98$, $sd=1.77$). Using stepwise regression analysis, we assessed the influence of demographic variables (gender and age) and parenting styles. Age and gender together explained 26.3% of game addiction variance ($F(2,330)=58.81$, $p<.01$). By adding four aspect of parenting styles (inconsistency, involvement, control, and warmth) another 10.2% of variance was explained ($\Delta F(4,326)=13.09$, $p<.01$). The significant predictor was gender of the respondent, where males scored higher on game addiction scale ($B=0.70$, $p<.01$), age ($\beta=-0.18$, $p<.01$), where younger children showed higher level of addiction, and parental inconsistency ($\beta=0.30$, $p<.01$), where the higher the inconsistency in upbringing, the more developed game playing addiction.

Keywords—Gender, parenting styles, video games, addiction.

I. INTRODUCTION

VIDEO games are advancing ever since the computers became personal. Over the years, playing video games has become more than a fad, it is a part of every day's life. A number of studies have looked at the effects of video games on children and adults. A vast majority of this research has linked games to a range of negative connotations. Researchers reported negative impact of long-term gaming, such as addiction (e.g. [1], [2]), depression (e.g. [3], [4]), or increase in aggressive behavior [5], [6].

It is obvious that in today's world video games make a significant part of children's and adolescents' lives. Gentile's [7] study performed on national sample ($N=1178$) reports that 88% of American youth aged 8 through 18 play video games at least occasionally. Our brief literature review also shows that video game playing has a significant impact on the development of an individual. Since it is almost impossible to avoid video games, it is necessary to study the factors which may influence their effect. In this regard, family environment should be considered as the key moderator. Parental involvement was found to be protective factor in potential negative influence of excessive gaming [8]. Nikken & Jansz [9] distinguishes three types of parental control in the area of video gaming – restrictive mediation, active mediation, and

co-playing. According to their study, parental mediation was based on their attitudes towards gaming. Parents tend to be more restrictive and active in mediation, when they perceived video games as negative phenomenon, while when perceiving video games more positively, they even used co-playing with children as mediation strategy. In this regard, there is a great opportunity to elaborate the chain between video games, style of parental control, and real-life consequences. In general, parental involvement and control seems to be critical in moderating the effects video games may have for children [10], since parents are often not aware of the gaming intensity and types of games their child is playing [8].

Intensity of video gaming and the type of game preferred was found to be related to physical or physiological characteristics. For example, Smyth [11] found that players of massively multiplayer online role-playing games (MMORPG) spent more hours playing and experienced worse health, worse sleep quality in comparison with players of other game genres. Vandewater, Shim, & Caplovitz [12] report that the amount of gaming is connected to weight status. Weaver, Gradisar, Dohnt, Lovato, & Douglas [13] remark that pre-sleep video game play can negatively influence the quality of the sleep.

Knowing about the negative connotations of excessive gaming together with high prevalence of videogames especially in adolescent age, it is not surprising that the term videogame addiction emerged in scientific literature. According to Lemmens, Valkenburg, & Peter [14], gaming addiction is widely discussed as one of the psychosocial aspects associated with videogames. In the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders [15], internet gaming disorder is identified as potential candidate for inclusion in the manual as a formal disorder. Concurrently, the author of the manual appealed for more scientific research on the topic.

The purpose of this study is to examine the relationship between demographic variables and parenting styles to videogame addiction.

II. METHOD

A. Data Collection and Sample Description

The data collection procedure was performed in the time period from October 2015 to April 2016. The data were collected using paper/pencil questionnaire administered in school settings. The schools included in our study were intentionally sampled to cover the variability in school types (elementary schools, high schools – gymnasia and multi-year gymnasia, and vocational schools). The administration of the questionnaire took two lessons.

Petr Květon and Martin Jelínek are with the Institute of Psychology, The Czech Academy of Sciences, Veveří 97, 602 00 Brno, Czech Republic (phone: +420532290159; e-mail: kveton@psu.cas.cz).

The research sample consisted of 333 students (166 males, 167 females) at the age between 10 and 19 years ($m=14.98$, $sd=1.77$).

B. Instruments

The instruments used in the actual study were:

Game Addiction Scale for Adolescents [14]. The scale consists of 21 items focusing on various symptoms of gaming addiction experienced in the last 6 months divided into 7 subscales (salience, tolerance, mood modification, relapse, withdrawal, conflict, problems). The rating scale continuum was 1 (never), 2 (rarely), 3 (sometimes), 4 (often), 5 (very often). The scale produces seven subscores and total score. In this study only the total score (expresses as average response per item) was used. Reliability of the scale was 0.947. Also respondents were asked to report their regular videogame playing time per week day and weekend day on response scale 1 (none), 2 (0.5hrs), 3 (1hrs), 4 (2hrs), 5 (3hrs), 6 (4hrs), 7 (5 and more hours). Reported amounts for week day and weekend day were combined into one variable using arithmetic mean.

The Parent-Child Interactions Scale is comprised of 24 items and determines four aspects of parenting – parental involvement (6 items, Cronbach's $\alpha = 0.723$), parental warmth (5 items, Cronbach's $\alpha = 0.828$), parental control (8 items, Cronbach's $\alpha = 0.616$) and inconsistency of parenting (5 items, Cronbach's $\alpha = 0.707$). The scale was part of the Social and Health Assessment (SAHA) questionnaire [16].

C. Data Analysis

In the presented study we used stepwise regression analysis with game addiction as predicted variable. In the first block of predictors we used demographic variables (age and gender with boys coded as 1 and girls as 0). In the second block we used four parent-child interaction scales focusing on different styles of parenting. We also assessed the influence of interaction between gender and parenting styles on the level of game addiction.

III. RESULTS

A. Game Addiction Construct

The central construct of our study is the gaming addiction. This construct was operationalized through the Game Addiction Scale for Adolescents. The authors [14] suggest the existence of second order factor structure with overall level of gaming addiction and seven subscales. In our study we use only the total score, because in our data the scale shows strong signs of unidimensionality (ratio of 1st and 2nd eigenvalue = 7.795). Congruently with the authors we can report good level of internal consistency (see the Instruments) and also concurrent validity, as we have found solid relation between the total score of Gaming Addiction Scale and subjectively reported number of hours spend by playing videogames per day ($r=0.627$; $p<0.01$). Descriptively, the mean in total addiction score in our sample was 1.78 ($sd=0.73$) with boys scoring higher than girls ($m_{boys}=2.12$, $sd_{boys}=0.74$; $m_{girls}=1.43$,

$sd_{girls}=0.54$). Similar results by means of gender differences were obtained for frequency of playing ($m=3.59$, $sd=1.92$; $m_{boys}=4.72$, $sd_{boys}=1.72$; $m_{girls}=2.46$, $sd_{girls}=1.35$).

B. The Relations between Gaming Addiction, Parenting Styles and Demographic Variables

As expected, demographic variables have significant influence on the level of gaming addiction. Age and gender together explained 26.3% of gaming addiction variance (adjusted $R^2=0.258$; $F(2,330)=58.808$; $p<0.01$). On closer look, boys showed higher level of addiction ($B=0.708$, $p<0.01$) and the level of addiction increases with decreasing age ($\beta=-0.202$; $p<0.01$).

By adding four parent-child interaction scales in the second block, we obtained significant improvement in explained variance ($\Delta R^2=0.102$; $\Delta F(4,326)=13.093$; $p<0.01$). Altogether, demographic variables and parenting styles explained 36.5% of gaming addiction variability (adjusted $R^2=0.353$; $F(6,326)=31.205$; $p<0.01$). Influence of individual predictors is summarized in Table I and graphically depicted in Fig. 1.

TABLE I
 INFLUENCE OF DEMOGRAPHIC VARIABLES AND PARENTING STYLES ON GAMING ADDICTION

| | B | SE | β | t | p |
|------------------------|--------|-------|---------|--------|-------|
| Constant | 1.872 | 0.396 | | 4.730 | 0.000 |
| Gender | 0.703 | 0.066 | 0.481 | 10.589 | 0.000 |
| Age | -0.074 | 0.019 | -0.179 | -3.814 | 0.000 |
| Parental inconsistency | 0.341 | 0.051 | 0.339 | 6.706 | 0.000 |
| Parental involvement | -0.064 | 0.075 | -0.058 | -0.846 | 0.398 |
| Parental control | -0.044 | 0.053 | -0.046 | -0.830 | 0.407 |
| Parental warmth | 0.045 | 0.066 | 0.047 | 0.687 | 0.492 |

Besides reported influence of demographic variables on gaming addiction, we have found that higher level of inconsistency in parenting is connected to higher level of gaming addiction. Other parenting styles did not have significant relationships to the predicted variable.

Finally, we evaluated possible interaction influence of gender and parenting styles on gaming addiction. Incorporating of the appropriate four interaction terms in the third block of regression analysis did not produce statistically significant change in explained variance ($\Delta R^2=0.007$; $\Delta F(4,322)=0.841$; $p=0.500$).

IV. DISCUSSION

The topic of family relations and parent-child interaction in connection to problem behavior during adolescence is widely discussed in the scientific literature [17]–[19]. In this study we focused namely on videogame addiction. This construct has been associated with social and emotional escapism from real life social relations and problems. Moreover, relevant studies suggest that psychobiological mechanisms underlying videogame addiction are similar to addiction to substances [20].

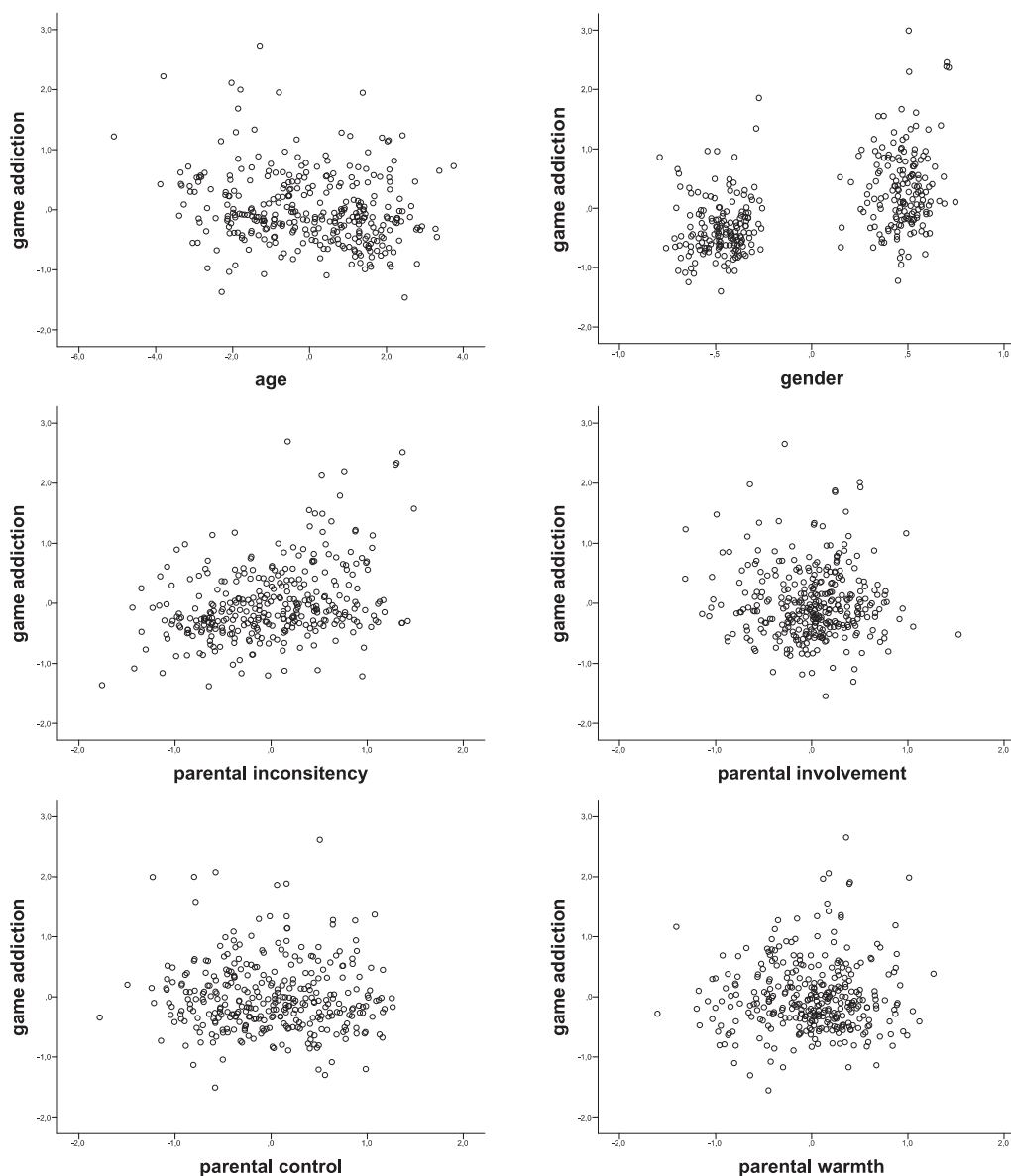


Fig. 1 Partial regression plots for individual predictors

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In our study we included subjective evaluation of parenting styles in four areas – control, warmth, involvement, inconsistency. Our main goal was to assess individual contributions of the styles in predicting videogame addiction. In our model we included also basic demographic characteristics. We have found out that the level of videogame addiction is determined by gender and age of respondents and from the parenting style by inconsistency in parenting. As expected and correspondingly with relevant literature [7], [21], boys showed higher level of videogame addiction together with the higher amount of time spent by playing of videogames. Relation of videogame addiction and age was found to be in negative direction. Gentile [7] mentions that even though frequency of videogame play decreases in adolescence, his results suggest that pathological videogame use is not related to the age of respondents. Both ours and Gentile’s studies’ results are limited by cross sectional design

and the issue of development of gaming addiction can be satisfactorily answered by applying longitudinal approach.

Even though recent studies focused on identifying parental factors influencing potentially harmful effect of videogames in childhood and adolescence mentions mainly parental control [9] and involvement [8], in our study we found out that parenting styles explained additional 10 % of game addiction variability above and beyond gender and age, with parental inconsistency being the only significant predictor. We can suggest that parenting style characterized by unclear and undefined rules and uncertain parental feedback contributes to developing videogame addiction. This finding is further supported by Sobotkova et al. [18] who report that inconsistency in parenting can lead to problem and antisocial behavior. Also, Brand et al. [22] confirm that lack of parental consistency is the most frequent parental pattern found in children with problem behaviors.

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