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Mom, Dad it's only a game! Perceived gambling and gaming behaviors among adolescents and young adults: An exploratory study.

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Abstract

Gambling and gaming are increasingly popular activities among adolescents. Although gambling is illegal in Portugal for youth under the age of 18 years, gambling opportunities are growing, mainly due to similarity between gambling and other technology-based games. Given the relationship between gambling and gaming activities, the paucity of research on gambling and gaming behaviors in Portugal, and the potential negative consequences in the lives of young people, the goal of this study was to explore and compare the perceptions of these two behaviors between Portuguese adolescents and young adults. Results from six focus groups (three with adolescents and three with young adults, comprising 37 participants aged between 13 and 26 years) indicated different perceptions for the two age groups. For adolescents, gaming was associated with addiction whereas for young adults it was perceived a tool for increasing personal and social skills. With regard to gambling, adolescents associated it with luck and financial rewards, whereas young adults perceived it as an activity with more risks than benefits. These results suggest developmental differences that have implications for intervention programs and future research.

Key words: gaming, gambling, perceptions, adolescents, young adults.

Introduction

Video game playing as a leisure activity has grown substantially over the last decade (Fuster et al., 2012). Consequently, young people's access to interactive games through game consoles, handheld players, computers and Internet has also increased (Kuss & Griffiths, 2012a; 2012b). Furthermore, online video game playing is most time-consuming leisure activity during adolescence, and adolescents are among the Internet's most avid users (Rideout, Foehr, & Roberts, 2010). The impact of video games in youth has become an important topic within the scientific community. For instance, most empirical research has consistently shown that excessive use of online video games can result in a number of negative outcomes, such as a negative impact on academic performance, and deterioration of interpersonal relationships (e.g. Griffiths, Davis & Chappell, 2004; Smyth, 2007; Griffiths, Kuss & King, 2012), and may contribute to problem behaviors, such as aggression and delinquency (Holtz & Appel, 2011). However, a close look at the research on aggression in video games shows that findings are far less consistent. For instance, some evidence indicates that playing video games makes individuals more violent and aggressive (e.g., Anderson, 2004), whereas other studies suggest it does not (Ferguson, San Miguel, & Hartley, 2009), even in potentially vulnerable subgroups such as children (e.g. Ferguson & Olson, 2013).

Other studies have been suggesting that video gaming have a positive impact on its players (Gelfond & Salonius-Pasternak, 2005; see Ferguson, 2010, for a review). Moreover, research on online gaming reveals that such games provide opportunities for learning social skills, as well as personal skills useful when working in group (team management, coordination and cooperation skills) (Ducheneaut & Moore, 2005), building leadership skills (Jang & Ryu, 2011), promoting second language learning (Na Wichian & Sanwong, 2010; Rama, Black, van Es & Warschauer, 2012), and reading and writing achievements, including boys who previously had little interest in such activities (Steinkuehler & Duncan, 2008). Therefore, more research is needed in order to explore the advantages and disadvantages of playing video games – especially online gaming, since it has been claimed that it is one of the most addictive activities on the Internet (Kuss & Griffiths, 2012a).

At the same time, the Internet can have an important role in the development of gambling practices (Griffiths, 1999). Over the last 15 years, new forms of gambling have appeared including technologically advanced slot machines, video lottery

terminals (VLTs), interactive television (i-TV), telephone wagering, mobile phone gambling, and gambling via social networking sites (Griffiths & Parke, 2010; King, Delfabbro & Griffiths, 2010). These new forms of gambling have radically increased accessibility and availability (Messerlian, Byrne & Derevensky, 2004, Froberg, 2006). Therefore, many children and adolescents are now growing up being exposed to various types of gambling in a completely different way compared to previous generations.

The empirical literature suggests that a large proportion of adolescents are gambling in spite of age prohibitions (e.g., Hardoon & Derevensky, 2002; Volberg, Gupta, Griffiths, Olason, & Delfabbro, 2010). For example, two regional studies that were carried out in Australia indicated that gambling is fairly established among Australian adolescents (Moore & Ohtsuka, 2000; Delfrabbo, Lahn & Grabosky, 2005). This was also confirmed in a more recent longitudinal study of adolescents in South Australia (Delfabbro, King & Griffiths, 2013). Similarly in UK, adolescent gambling is widespread particularly on slot machines due to the thousands of amusement arcades and family leisure centers throughout the country where children and adolescents can legally gamble (Griffiths, 2011a). As with video gaming, adolescent gamblers can experience gambling-related problems that often negatively impact their lives (Hardoon & Derevensky 2002; Wickwire, Whelan, Meyers & Murray, 2007; Volberg, et al, 2010), including dysfunctional social relationships (Gerdner & Svensson 2003), psychological maladjustment (Delfabbro, Lahn & Grabosky, 2006), and conduct problems (Barnes, Welte, Hoffman & Dintcheff, 2005), particularly among adolescent boys (Griffiths, 2011a; Martins, Storr, Ialongo & Chilcoat, 2008).

It has been argued that youth are receptive to modern forms of gambling because of the apparent similarity between these games and other technology-based games with which they are familiar with (Delfabbro, King, Lambos & Puglies, 2009). In fact, the Massively Multiplayer Online Role-Playing Games (MMORPGs) use a 'virtual economy' where players try to gain as many points as possible (which have been referred as a 'non-financial form' of gambling [Griffiths, 1991b]). This structural feature of online games has been conceptualized as a rewarding reinforcement mechanism where players attempt to gain points, credits, prizes, and/or money that may lead some adolescents to initiate traditional gambling behaviors (e.g., Griffiths, 1991a). Furthermore, some research suggests a relationship between gaming and gambling. For instance, an early study carried out by Gupta and Derevensky (1996) with school children revealed that high-frequency video game players reported a significantly higher

level of gambling experience as compared to low frequency video game players. Also Wood, Gupta, Derevensky and Griffiths (2004) have found that regular adolescent gamblers were more likely to report videogame playing than less frequent ones. More recently, King, Ejova and Delfabbro (2012) found that videogame playing is a significant predictor of gambling cognitions and superstitious thoughts about gambling.

Due to the growing evidence suggesting that youth are at increasing risk for developing gambling and gaming problems (King, et al, 2010; Kuss & Griffiths, 2012b), and given the widespread availability of legalized gambling venues which make more underage youth to engage in those activities (Messerlian, Derevensky & Gupta, 2005), it has become important to explore young people's perceptions, attitudes, and experiences of gaming and gambling behaviors. In fact, according to Theory of Reasoned Action (Ajzen & Fishbein, 1980), it is thought that belief (i.e., an individual's subjective knowledge and the perceived costs and benefits of the behavior) influences attitude (i.e., an individual's positive and negative feelings about a particular behavior), that in turn shapes behavioral intention. In fact, research has found that adolescents perceive video gaming as a (i) social tool that allows boys to work cooperatively with peers (Olson, Kutner, & Warner, 2008), (ii) way to compete (Greenberg, Sherry, Lachlan, Lucas, & Holmstrom, 2010), and (iii) way express fantasies of power, when boys gain status among peers by owning or mastering these popular games (Olson, Kutner, & Warner, 2008; see Olson, 2010, for a review).

Previous studies into online gaming carried out with adolescents showed that the main motivations for playing these games were entertainment and leisure, emotional coping, escaping from reality, satisfying social needs, need for achievement, need for excitement and challenge, and the need for power (Wan & Chiou, 2006; Kuss & Griffiths, 2012a; 2012b). Research into online gaming conducted by Seok and DaCosta (2012), revealed that highly engaged adolescents perceive online gaming as a positive experience, in which MMORPGs constitute the preferred games types mentioned by participants. According to Smyth (2007) the gaming experience of players of MMORPGs differs in many ways when compared to players of other types of video games (i.e., they typically experience a greater enjoyment in playing, a greater interest in continuing to play, and a greater acquisition of new online friendships).

On the other hand, previous research revealed that young people's attitudes are an accurate predictor of their gambling behavior (Moore & Ohtsuka, 1999). According to some empirical evidence (e.g. Derevensky, Gupta and Winters, 2003; Hume & Mort,

2011), youth define gambling in terms of fun and perceive themselves as invulnerable and do not readily acknowledge the potential adverse consequences of gambling. Previous research has also indicated that adolescents perceive gambling as exciting, daring and potentially addictive, and that it relieves boredom and improves their social networks (Griffiths, 2011a; Skinner, Biscope, Murray & Korn, 2004). Beyond socialization with peers, previous studies also suggest that youths' perception of parental involvement with gambling plays an important role in the initiation and maintenance of gambling participation for youth (e.g. Felsher, Derevensky & Gupta, 2003; Wood & Griffiths, 2004). In addition to socialization, research suggest that youth view gambling as an activity to win money (Wood & Griffiths, 2004) and have beliefs that it can be a lucrative activity (Delfrabbo, Lahn & Grabosky, 2006) perhaps indicating that adolescents overestimate their chances of winning (Wood & Griffiths, 2002). In fact, with regard the skills needed to gamble, adolescents tend to overestimate the importance of skill and they perceive that they can become a good gambler if they practise (Hardoon & Derevensky, 2002; Derevensky, Gupta & Della Cioppa, 1996).

Research has also emphasized that adolescents do not appear to distinguish between the concepts of probability, fate, luck and chance, and that young problem gamblers have more faith in their ability to manipulate chance and 'beat the system' (Froberg, 2006; Griffiths, 2011a; Moore & Ohtsuka, 1999). More recently, Primi, Donati, Bellini, BusdraghiI and Chiesi (2013) found that adolescent 'at risk' gamblers and adolescent problem gamblers showed a more optimistic view of gambling's economic advantages compared to adolescent non problem gamblers.

In Portugal, little research has been conducted on gambling or video gaming, and almost nothing published in peer reviewed refereed journals. The few studies carried out indicate that video game playing is a popular activity among Portuguese adolescents as well. In a study carried out by Matos et al. (2008), results showed that 16% of adolescents used to play video games for four hours a day during the week and that 29% played four hours a day at weekends. According to Matos (2008), MMORPGs are played by the majority of adolescents. In respect to gambling, the few studies that have ever explored such behaviors using Portuguese samples suggest that the prevalence of gambling in youth is similar to those in other countries (Lopes, 2009). Considering the association between gambling activities and gaming behaviors, and the lack of empirical studies in the Portuguese context, the main goal of the current research was to explore perceptions about gambling and gaming behaviors in two different age

groups (i.e., adolescents and young adults). This issue is particularly important as development differences can contribute to differences in perceptions between two age groups. Adolescence is a transitional period in which individuals undergo rapid psychological and behavioral changes, and is characterized by a heightened propensity for risk-taking, impulsiveness, and reckless behaviors (Arnett, 1992). Adolescents focus more on the benefits than the costs of a risky behavior, are less adept at setting goals and evaluating their decisions (Byrnes, 2002), and are more susceptible to the influence of their peers in risky situations (Gardner & Steinberg, 2005). Consequently, these behaviors may leave adolescents more vulnerable to gambling (Chambers & Potenza, 2003). Indeed, there is a paucity of research comparing adolescents and young adults with respect to gambling and gaming perceptions and, as far as the authors are aware, there have been no published studies exploring such variables within the Portuguese context.

Therefore, the present research aimed to explore youth perspectives on gambling and gaming behaviors in a Portuguese sample of adolescents (for whom underage gambling activities are illegal), and young adults. More specifically, the study aimed to explore the (i) role of gambling and gaming in adolescents and young adults' lives; (ii) meanings given to gambling and gaming by adolescents and young adults, (iii) perceived common features between both gambling and gaming, as well as specific skills needed, (iv) motivations underlying gambling and gaming behaviors, (v) meta-perceptions of family members' opinions on gambling and gaming behaviors, (vi) feelings that gambling and gaming triggered, and (vii) potential negative outcomes of gambling and gaming. Unlike most other previous studies, this research aimed to directly compare adolescents and young adults' perceptions of gambling and gaming. Because of its exploratory nature, there were no specific hypotheses although it was expected that the findings of the present study would generate hypotheses for future research that would have the potential to facilitate the progress of appropriate public health responses that take into account developmental factors. Given the exploratory aims of the proposed research, a qualitative methodology was viewed as most appropriate as it helps to draw patterns of meaning in a more detailed way than other self-report measures such as questionnaires (e.g., Hayes, 1997).

Method

Participants

Thirty-seven participants aged between 13 and 26 years were recruited using convenience sampling. Participants were grouped according to their age. More specifically, participants younger than 18 years that attended high school were considered adolescents. Participants older than 18 years that had finished high school and attended other academic institutions were considered young adults. Six focus groups were conducted, three with adolescents (N= 20) and the remaining three with young adults (N=17). For the adolescent group, the age ranged from 13 to 17 years old (M=15.9; SD=1.2). For the young adult group, the age ranged from 19 to 26 years old (M=21.2; SD=2.2) Focus groups size ranged from four to ten participants. Five focus groups comprised mixed gender, and the remaining one was male-only. The majority of participants lived in the Lisbon area and one adolescent focus group lived in Covilhã, in the North of the country. All were in full-time education.

Participant recruitment

The recruitment of the adolescents was facilitated by contact between the first author and two different schools located in Lisbon area. The initial contact comprised an invite for students to participate in focus group discussions about gambling and gaming. Following initial contact, the schools themselves selected participants for the study randomly. The third adolescent focus group was obtained via a family contact of the second author who asked if they could locate adolescents to participate in the study. Young adults were students recruited from a public university in Lisbon and from a professional school. For the first focus group, participants were recruited via informal contact between the second author and her students who attended university classes. The remaining students were recruited via snowball sampling using student contacts.. For the remaining young adults, informal contact between the first author and one professional school was made and then the school itself chose the classes where the focus groups were conducted. All participants had experience and knowledge in gambling and/or playing online games.

Materials and procedure

Semi-structured interviews with six focus groups were conducted (i.e., three with the adolescents and three with young adults). A single focus group discussion guide was developed to ensure that certain areas were covered and used in every focus group in order to facilitate the exploration about gambling and gaming, and to compare the responses between the two age groups. The questions of the interview guide were theoretically-based. Following Krueger and Casey's (2000) procedures, the group discussion guide began with more a general question that aimed to explore the role of gambling and gaming in their lives. This was followed by more specific questions concerning the specific goals of the current research (e.g., motivations underlying gambling and gaming behavior). Participants were invited to discuss the questions among themselves and were asked to be as honest as possible as there were no right or wrong answers to any of the questions. The first author conducted four focus groups and the second author conducted the remaining two. The focus group facilitators probed for clarification if required and used validation comments (e.g., "Thank you for that comment") throughout the research process.

Four focus group discussions took place in the participants' respective educational establishments after institutional permission of directors or tutors. The remaining two focus groups were carried out with second author's college students and via a family member of the same researcher and did not require institutional permission. After explaining the goals of the study, teachers of both school students asked for the participants' informed consent along with permission from their parents. For one adolescent focus group, the goals were explained to a family member of the second author who explained it to other participants and asked for parental consent. Only those adolescents that had parentally approved informed consent were eligible to participate in the focus group. In the case of the young adults, informed consent forms were distributed immediately before the beginning of the focus group interview. All ethical procedures in addition to written consent (e.g., freedom to withdraw at any time, de-identification during transcription) were adhered to. The present research was granted permission by the research team's university Ethics Committee.

The length of each focus group was approximately one hour and was audio-recorded. At the end of the discussion, rewards were not offered for participants, but participants were thanked and debriefed. In the establishments where focus groups were conducted, the researcher promised to send a copy of the findings of the study. The audio-taped interviews were then transcribed verbatim.

Data analysis

Interview transcripts were analysed using techniques based on Thematic Analysis (e.g., Braun and Clark, 2006; King & Horrocks, 2010). A set of prescribed steps were followed: (i) an initial reading through of both group transcriptions to gain familiarity with them. At this stage, no formal coding was carried out, although any relevant material that helped to understand participants' perceptions and views was highlighted. Following this initial process, these preliminary highlighted comments were sometimes used in order to define descriptive codes that were relatively close to the data; (ii) an interpretative coding of the full data set was formulated by clustering descriptive codes and interpreting the meaning of such clusters when necessary; (iii), finally, overarching themes were extracted and defined. Commonalities and differences amongst participants' views were also noted. This process was used for each superordinate dimension that corresponded, in turn, to each of the pre-established questions of the semi-structured focus group discussion guide. This included the role of gambling and gaming on adolescents' and young adults' lives (including the maximum hours played, games that used to play, starting age for gaming); general perceptions for gaming and gambling; common features between gaming and gambling; skills needed; motivations; feelings triggered; family perceptions and outcomes.

A set of themes and sub-themes emerged for each superordinate dimension. General themes emerged through the interpretative coding and sub-themes or more specific themes during the descriptive codes. In order to ensure the quality of this qualitative analysis process, investigator and theoretical triangulation was taken into account (Denzin, 1978), as well as recommendations from consensual qualitative procedures (Hill, Knox, Thompson, William, Hess, & Ladany, 2005).

Results

Results are described in terms of the major themes and sub-themes that emerged for each superordinate dimension (appearing in bold italic). An overview of the themes and sub-themes regarding to gaming that emerged for both adolescents and young adults is presented in Table 1 to provide an outline of the findings. Results are presented separately for gaming and gambling. Following this initial analysis, the perceived common features between gaming and gambling are discussed.

Table 1: Themes and sub-themes that emerged for each super-ordinate dimension regarding gaming for both adolescents and young adults

Adolescents			Young adults		
Superordenate dimension	**Theme**	**Sub-theme**	**Superordenate dimension**	**Theme**	**Sub-theme**
The role of gaming in young peoples' life	Games most played	MMORPGs	***The role of gaming in young peoples' life***	Games most played	MMORPGs Facebook games Roleta
	The maximum hours played	2-6 hours 16-20 hours		The maximum hours played	16-20 hours; non-stop gaming behavior
	Age people start gaming	Childhood; Family variables		Age people start gaming	Childhood; Family variables
General perceptions for gaming	Addiction; Game wars; Cars; Football; Joy.		***General perceptions for gaming***	Hobby; Positive feelings; Challenge seeking; Social and self-skills improvement; Financial reward.	
Skills needed	Strategy; training; good communication		***Skills needed***	Reasoning; critical thinking; team skills; concentration; decision-making skills	
Motivations	Social motivations	Social prestige; Hang out with friends	***Motivations***	Social motivations	interpersonal interactions

	Competition; Reinforcements; Entertainment; Spare time activity			Self-motivations Competition Spare time activity; Productive goals	virtual identities
Game features that contribute to addiction	Need for achievement Similarity with real life	Searching the best strategy	***Game features that contribute to addiction***	Need for achievement Killing people in virtual settings	
Feelings triggered	Positive feelings; Negative feelings; Lack of feelings.		***Feelings triggered***	Positive feelings; Negative feelings; Game settings.	
Family meta-perceptions	Non supportive activity Parental Gaming	Takes time from study; Family are not familiar	***Family meta-perceptions***	Non supportive activity Parental Gaming	Takes time from study; Family are not familiar
Outcomes	**Negative outcomes**	Brain damage; Eyesight pain; Tiredness, Depression, Poor academic performance; Lack of social skills	***Outcomes***	**Negative outcomes**	lack of social skills; mental fatigue; addiction; isolation; depression; frustration; poor academic performance losing identity; alienation; confusing reality with fantasy

Positive outcomes	entertainment enhancement, friendship improvement	**Positive outcomes**	Technological skills; English skills; Marketing skills; Reflexes; Think creatively.

In the following section, themes and sub-themes are discussed in more depth. As has been used in other qualitative analyses, the main themes appear in bold, and the sub-themes will appear underlined. Direct quotes (where relevant) appear in italic.

Gaming themes

The role of gaming in young peoples' life

In all focus groups, participants reported **gaming** was one of the main activities carried out during their leisure time. Within the same superordinate dimension of the role of gaming, three other aspects were made salient: games most played, the maximum hours played, and the age at which they started gaming. Regarding the **games most played,** there were some similarities and differences between the two groups. Members of both groups reported playing MMORPGs, (*"I use to play League of Legends and World of Warcraft", "I know Metin 2, Eternal Saga and Age of Empires" "Counter Strike, Starcraft, Guildwars, and PlanetSide I have played so far*"). In addition, Facebook games (e.g., *"Farmville")*, AngryBirds and Roleta were also played by young adults.

Regarding to **the maximum hours played,** the majority of adolescents and young adults reported playing between 16 to 20 hours (e.g., *"10 hours with a lunch break*", "*I stayed 3 days with breaks only playing online games, which means 20 hours*", *"playing a game without stopping").* Those in the young adult group mentioned that excessive gaming corresponds to non-stop gaming behavior (e.g., "*16 hours non-stop*", "*11 hours", "waking up and continuing gaming"*, "*when I received [Grand Theft Auto] 4, I stayed all night gaming until 11 am", "staying at home instead of going to the beach and wake up early and gaming"*).

When asked about the **age that they and their peers as well start gaming**, both adolescents and young adults mentioned that they started in childhood (e.g., *"when they are 8 years old", "when they are 10 years old"; "children started between 4 to 7 years"*; "*my nephew is 4-years old and he is gaming already"*; "*nowadays children start gaming very early and they are able to game because they memorize where the things are"*). Both adolescents and young adults emphasized the role of **family variables** for that behavior (e.g., "*it depends whether you have older cousins or brothers", " it depends if their parents allow them to play on the computer"*).

General perceptions for gaming

For adolescents gaming was associated with **joy, cars, game wars**, **football**, but the main theme that emerged was **addiction** (e.g., *"addiction",* "*there are people who game and when you take the game from them, they become very upset and are always gaming*"), whereas for young adults it is associated as an **hobby**, as a trigger for **positive feelings** ("*amusement"*), as a **challenge seeking** (e.g., "*competition, challenge*"), as a tool for **social and self-skills improvement** (e.g., "*we can interact with people", "there's a possibility of intercultural interaction – I play with people from other countries*", "*it is possible to learn different languages, for example, Spanish with people from South America"*), and as a **financial reward** (e.g., "*opportunity of winning money*").

Skills needed

Adolescents reported three main skills in gaming: **strategy**, **training** and **good communication** (e.g., "*a good communication and training that's all we need*"), whereas young adults reported **reasoning, critical thinking** (e.g., *"critical thinking in games of strategy*"), **team skills, concentration** and **decision-making skills** (e.g., "*we need to make a decision faster"*).

Motivations underlying gaming behaviors

From the adolescent focus group five main motivations emerged: **social motivations**, namely social prestige (e.g., "*in League of Legends, people gain prestige when they win")* and hanging out with friends, **competition**, **reinforcements**, **entertainment**, and as a **spare time activity.** Similar to adolescents, young adults also reported **competition, spare time activity** and **social motivations**, but related the latter with interpersonal interactions (e.g., *"it is a virtual community but it is based on real*

people…I met my best friend like that") Additionally, young adults mentioned **self-motivations** such as virtual identities (e.g., "*being another person, better than in real life, which gives more positive self-esteem as well as self-confidence*), superiority feelings (e.g., "*I knew people that felt superior to others, more self-confident*") and **productive goals** (e.g. *"the possibility of building something*").

Game features that contribute to addiction

In both age groups groups, the game feature that they thought most contributed to gaming addiction was the **need for achievement**, including searching the best strategy (e.g., "*when you use today the same strategy and it works and tomorrow you use exactly the same strategy and it doesn't work, you have to arrange another one to win and that makes you addicted to that game*"; *"I think what makes a person to become addicted is his desire to win more and more"; "facebook games do not cause too much addiction because you cannot progress very much")*. In addition, young adults reported that it was the possibility to **kill people in virtual settings** that leads to addiction (e.g. *"the game feature that contribute to addiction is the possibility to kill people in the game, they know they can kill in the game, but they know they are not killing in real life… it is a way to deal with anxiety")*. Moreover, adolescents also reported that the **game similarity with real life** also contributes do addiction (e.g. *"On SIMS it's because it's like real life").*

Feelings triggered

Adolescents reported either **positive feelings**, such as pleasure, amusement (e.g., "*amusement, I play for amusement*"), and flame (e.g., *"For me it's a flame),* or **lack of feelings** *("before I played for amusement, but now I've changed, I don't feel anything, I play to win"*), whereas young adults reported not only **positive feelings**, such as excitement and happiness (e.g., "*there's a variety of feelings; it's all so fast…adrenaline, happiness"*), but also **negative feelings**, including frustration (e.g., "*There's also frustration*"). They also made reference to the role of **game settings** as a trigger (e.g., "*context is very important. I play a game with a medieval setting. I feel that I am a knight and that's so cool*").

Family meta-perceptions

Regarding results from adolescents and young adults, family meta-perceptions included the idea that gaming is considered as a **non-supportive activity**, namely because they are not familiar with those activities (e.g., "*my family don't like [gaming], they don't support it because it is an online game and they don't understand very much*

about computers"), and because they think it takes time away from studying (e.g., "my *family don't like it because I play online games instead of taking off time for study*"). However, in both age groups, **parental gaming** emerged as an important theme (e.g., *"I know people whose parents play. For example, I have a team in which I used to play and one element of the team has his father also playing. Sometimes it is a legacy of the family, people tend to imitate what their parents do*", "*My father is addicted to Farmville. It's all said*").

Outcomes

Overall, both adolescents and young adults reported **negative outcomes**; the former mentioned brain damage, eyesight pain, tiredness, depression, poor academic performance and lack of social skills, whereas the latter group in addition to the lack of social skills, and poor academic performance also referred to mental fatigue, addiction, isolation, depression, frustration, losing identity, alienation and confusing reality with fantasy. In addition to negative outcomes, adolescents also reported **positive ones** such as entertainment enhancement, friendship improvement (e.g., "*start to have more friends, for instance German friends*"), and young adults reported technological skills (e.g., "*I am good at informatics because of this*"), English skills (e.g., "*our generation learned English through gaming*", *"since the seventh grade, I learned English through gaming by hearing the accent"*), marketing skills (e.g., "*at World of Warcraft there are people that learn how to exchange virtual money for real money"*), thinking creatively ("*when we are gaming, we learn to reflect and consider a lot of resources in order to overcome the obstacles of the game")* and reflexes (e.g., "*I learned how to react quickly"*). These participants also reported gaming as a way of living (e.g., "*I play since I remember myself, it is part of my life*", "*it is a normal behavior, as other daily behaviors*", "*Some people thought, that it was only a period of time, but no. I will play forever, I want that my son plays as well*!

Gambling themes

Table 2: Themes and sub-themes that emerged for each super-ordinate dimension regarding gambling for both adolescents and young adults.

Adolescents			Young adults		
Superordenate dimension	**Theme**	**Sub-theme**	**Superordenate dimension**	**Theme**	**Sub-theme**
The role of gambling in young peoples' life	Games most played	MMORPGs; Online Poker; Football bets;	***The role of gambling in young peoples' life***	Games most played	MMORPGs; Online Poker; Football bets, Cards; Chess.
	Age people start gaming	Perceptions of self-efficacy achieved during gaming experiences; Access to gambling by underage youth; mental age vs. chronological age		Age people start gaming	Perceptions of self-efficacy achieved during gaming experiences Access to gambling by underage youth
General perceptions for gambling	Money; Luck;		***General perceptions for gambling***	Negative aspects of gambling; Benefits	
	Economical crisis	Facilitating factor; Inhibiting factor			
Skills needed	Strategy; Training; Good concentration; Maturity		***Skills needed***	High level of English; Comprehension, Reasoning; Critical thinking.	
Motivations	Social motivations	Social prestige			

	Financial rewards		***Motivations***	Financial rewards	
Game features that contribute to addiction	Need for achievement; Money earned.		***Game features that contribute to addiction***	Need for achievement; Money earned	
Feelings triggered	Positive feelings; Negative feelings; Lack of feelings.		***Feelings triggered***	Positive feelings; Negative feelings.	
Family meta-perceptions	Non supportive activity	Lack of knowledge of online activity; Bad outcomes.	***Family meta-perceptions***	Parental Gambling	
	Supportive activity				
	Parental Gambling				
Outcomes	Negative outcomes	brain damage, tiredness, depression; poor academic performance.	***Outcomes***	Bad outcomes	Much money spent
				Illusion	
	Positive outcomes	Entertainment enhancement; Better life			

The role of gambling in young peoples' life

As with gaming, both adolescents and young adults stated that gambling was an activity they carried out during their leisure time. Within this dimension, adolescents justified the role of gambling in their lives due to their perception of gambling as a very similar activity to gaming ("*gaming and gambling are very similar...there are MMORPGs which in the end of a given number of tournaments, we can win money").*Within the same superordinate dimension of the role of gambling, two other aspects emerged – the **games played** and the **age people start gambling**. Members of

both age groups reported playing MMORPGs, as they can be played as a gambling activity as well. In addition, both adolescents and young adults reported online poker and football bets and the latter group also mentioned chess and cards.

Both age groups stated that the age people start gambling depends on their perceptions of self-efficacy achieved during gaming experiences (e.g., "*it depends of gaming...if someone starts to game and starts to win more and more, then he become confident about his skills and start to gamble"; "for instance, in online poker people begin gambling with virtual money and wins and then create the desire to win real money and then bets real money because they know they play well and can win more money..."*).

Regarding to the **age people start gambling,** a sub-theme that emerged in the adolescents' groups relating to mental age versus chronological age (**"***the most important thing for gambling is not to have a specific age, such as 8 or 10, but to have enough age to be able to think*"). Within the theme of the age that people start gambling, another sub-theme that emerged in both age groups was the access to gambling by underage youth (e.g. *"people under 18 play games for gamble, there is no control"*; *it's easy for underage youth to gamble online, I don't know how...maybe faking the ID*"; "*I think that in online gaming and in offline gaming it is easy to overcome the legal barriers, for instance when I was in high school, people used to play online poker with real money"*).

General perceptions for gambling

Adolescents associated gambling with **money** (e.g., "*I know many people who play World of Warcraft and they receive money for [playing]*", *"if people play a game for money and don't become addicted...it's not bad"*) and **luck** (e.g., "*if we have luck I think it's cool to gamble*"). They also related gambling to the **economic crises** although for some this was a facilitating factor (e.g., "*Because of the crisis, we never know*"; "*nowadays, people want to win more money and gamble for it"*), whereas for others it was an inhibiting factor (e.g., "*I think people now gamble less than other times because there is less money to gamble*", *"nowadays, people gamble with lower amounts of money", "it depends on games, I think people play less Poker, but there are other games, such as Euro Millions, which people plays more...I think Portugal is the European country with the highest rate in Euro Millions"*). For young adults**,** the main theme that emerged concerned **negative aspects of gambling** (e.g., "*tempting, but not beneficial*"; "*it is also a matter of manipulation*", "*it is easy to say that people can live*

with gambling but they are not lucky games", "*positive reinforcement is manipulated*"), followed by the perception of **benefits** (e.g., "*it is fun when we are winning*").

Skills needed

Similarly to gaming among adolescents, a particular set of skills emerged from the interview: **strategy**, **training** (e.g. *"I think in everything we play, we need strategy and training")* and **good concentration.** However, adolescents also talked about **maturity** for gambling (e.g. "*for gambling, we really need mental thinking or maturity for doing it").* For young adults, gambling implied a **high level of English, comprehension**, **reasoning** and **critical thinking**.

Motivations

With young adults the main aspect that emerged was the financial reward. For adolescents, in addition to **financial rewards** (e.g., *"on gambling the motivation is only winning money, that's it"*, "*people who play League of Legends can create means to win money. For instance, in YouTube there is a company called TGN and people who win competition will partner with those companies and they can win money for simply playing those games"*) **social motivations,** such as social prestige also emerged (e.g. "*when we play and we win, we gain social prestige in our social network").*

Game features that contribute to addiction

Adolescents and young adults also stated that the main feature that contributes to addiction was the **need for achievement** (e.g. *"as in gaming, I think that is the desire to win more and more who contributes to addiction")* and the **money earned** (e.g. *"the more money they win the more addicted they get").*

Family meta-perceptions

Adolescents' reports for this superordinate theme encompassed a number of different elements that included **non-supportive activity**, namely due to the lack of knowledge of online activities (e.g. *"when we do online gambling, our family don't like because they don't understand very much about computers")* and because it can bring bad outcomes (e.g. "*my family don't like because of the bad outcomes gambling can bring, such as addiction).* However, adolescents also reported **supportive activity** (e.g. "*if I play games outside the computer, my family like it even if it is gambling").* Additionally, in both adolescents and young adults, **parental gambling** emerged as an important theme for gambling *(*e.g. "*if parents are gamblers, maybe their children will be"; "I know parents that pay for their children gamble").*

Outcomes

Adolescents reported **negative outcomes** for gambling, such as brain damage, tiredness, depression and poor academic performance, which were similar from those reported for gaming. These participants also stated **good outcomes** such as entertainment enhancement (e.g. *"there are people who have more entertainment and therefore are not so bored neither so addicted to TV");* and a better life due to the money won (e.g., "*there are people who have a better life because of the money they win…they have big houses)*. Young adults mentioned **negative outcomes**, such as much money spent and also emphasized that gambling is as an **illusion** ("*it looks like people can easily live out of that (activity) but they are not luck games, rather they are hazard games*").

Common features between gambling and gaming

For the majority of adolescents, gambling and gaming shared some characteristics, namely **triggering positive feelings** (e.g., "*pleasure, everything gives pleasure*"), **financial aspects** (e.g., "*money*", "*money is always present because frequently we have to pay for gaming*"), and **specific features of games** such as killing people, competition and tournaments. As with adolescents, young adults reported **specific features of games**, and particularly competition (e.g., "*competition even when playing alone*"). Another common element between gambling and gaming related to **inner characteristics of the player/gambler**, such as the willingness to win. Although not asked, young adults also reported **differences between gambling and gaming**. Most notably, young adults said that gaming gave the possibility for personal improvement (e.g., *"at the end we can learn from our mistakes")*, and can be seen as a job (e.g., "*gaming can be a full-time job*"), whereas gambling was more of a more lonely activity (e.g., "*when we play poker for money, the only goal is to beat the other players, you don't get any other excitement*", "*we don't grow as a team*").

Discussion

The present study aimed to explore and compare perceptions of gaming and gambling behaviors in Portuguese adolescents and young adults. Such an investigation is particularly important and relevant as there is a paucity of research within the field of youth gambling and gaming in the Portuguese context. Therefore, the results presented here are of substantial interest as the few studies that have begun to explore these phenomena in Portugal, have claimed that young people constitute a new focus of concern (Lopes, 2009), possibly due to the wide-scale sanctioned gambling via the

Internet. According to Patton (2002), qualitative exploratory studies constitute a starting point for research within a field where very little is known, so a qualitative study was considered to be the best approach for this goal. Therefore, the findings provide an important first look on how gaming and gambling is viewed by Portuguese youth in general, and unlike most published studies, this research directly compares adolescent and adult gamblers and gamers, particularly concerning perceptions and attitudes towards gambling and gaming. This was particularly important in generating hypotheses for future research and to understand the differences in perceptions for young adults and adolescents, for who gambling activities are illegal.

Gaming: With respect to gaming, and similar to previous studies (e.g., Griffiths & Hunt, 1998; Bryce & Rutter, 2003), results showed that video gaming is one of the most popular leisure activities among young people – particularly Massively Multiplayer Online Role-Playing Games (MMORPGs). Indeed, many participants reported that gaming was a way of living. This is not surprising as many studies have noted that such games attract millions of people all over the world (e.g., Chappell, Eatough, Davies & Griffiths, 2006; Kuss & Griffiths, 2012a; Yee, 2005). The recent development of MMORPGs has created a new experience for gamers (Smyth, 2007), that has generated an increase of research in this field.

When asked about the general perceptions of these leisure activities, adolescents mainly perceived video gaming as an addiction, which is somewhat in line with previous research (e.g., Seok & DaCosta, 2012), whereas young adults perceive gaming as an opportunity for social interaction and self-improvement skills (e.g., interpersonal interactions, learning different languages), and as an activity that can also trigger positive feelings. This finding is in line with previous research in which people consider online gaming as something in which individuals can live powerful first-hand learning experiences in ways that are unavailable in real life (Dawley, & Dede, 2014) and may contribute to increase performance in several domains, such as learning languages and spatial perception (Faust, Meyer & Griffiths, 2013).

In recent years, research on MMORPGs (the game genre most played by participants) proposes that such games can help improve learners' second language learning (e.g., Rama, Black, van Es & Warschauer, 2012), such as English learning (Suh, Kim & Kim, 2010). Moreover, the default language of communication in many games is English and therefore it is accepted that successful and frequent players of such games that do not have English as their mother tongue acquire some of their

English proficiency in the activity of gaming (Sundqvist & Sylvén, 2012). In fact, the use of MMORPGs for educational purposes has become a topic that has seen increased popularity in recent years (Riegle & Matejka, 2006; Dickey, 2007). Furthermore, a noteworthy aspect is that young adults had a wider range and more positive perceptions. One possible explanation for these differences between the two age groups is that young adults, according to some theorists of development (e.g., Perry, 1999), examine and consider a variety of possible worldviews due to their life experiences acquired during the course of their college years, and therefore have a greater willingness to reflect on the various events and its potentialities.

Regarding motivations for gaming, it was social factors that were most mentioned by both adolescents and young adults. This finding is consistent with previous research, which indicates that socialization is the main motivational factor that fosters people engaging in online games, such as MMORPGs (Fuster et al., 2012; Wan & Chiou, 2006; Frostling-Henningsson, 2009). In addition, adolescents also mentioned social prestige, something that young adults did not indicate. This finding may be understood by the fact that adolescents appear seek prestige among their peers through their performance in online games, and that older participants have other ways to fulfil this need. Young adults also appear to be attracted to more psychological motivations, such as creating virtual identities and productive goals, which is consistent with some research has that pointed out that online games (particularly MMORPGs) are anonymous environments that provide players with many opportunities for self-representation and self-exploration (e.g. Yee, 2006; Bessiere, Seay & Kiesler, 2007), and with previous studies (Griffiths et al., 2004) that have reported that adults perform more gender swapping and new identity creation than adolescents. One possible explanation for this could be adolescents' insecurity about their own identity in offline world and/or because they are still developing their own identity and thus inhibited in engaging in the creation of alternative identities in online world.

When asked about what makes people addicted to online games, both adolescents and young adults reported the need for achievement. Thus, participants' accounts suggest that they perceive it is the desire to win more and more that leads to addiction. In fact, the main feature of MMORPGs is its system of goals that leads players to experience a constant sense of achievement. In these games, as players engage in the game, their character advances by gaining experience points (i.e., "leveling up" from one level to the next), while collecting valuables and weapons (Ng & Wiemer-Hastings,

2005). Moreover, adolescents also stated that it was the similarity between the games and real life that leads to addiction. In fact, as some studies pointed out (e.g., Olson, Kutner & Warner, 2008), greater realism may make games especially attractive and inspiring. Another interesting finding is that young adults mentioned the feature of killing people as contributing to gaming addiction, which may lend support to the catharsis theory that playing violent video games may provide a safe channel for coping with anger (Griffiths, 2000).

In regard to the skills needed, adolescents reported strategy, training and good communication are needed to play online games. Young adults reported team skills, but also stated reasoning, critical thinking, and decision-making as skills that are needed. In fact, some studies emphasised that team-work skills and a good communication become very important if the player wishes to either participate in communities or complete the harder challenges that the game has to offer (e.g., Barnett & Coulson, 2010). Regarding outcomes, young adults also reported those related to cognitive skills improvement, such as marketing, having technological skills, having quick reflexes, and thinking creatively – skills that adolescents did not mention. One possible explanation for this difference is that adolescents have had been shown by Modecki (2008) to have less maturity of judgment, namely less perspective of thinking than the older-age groups, that makes them less able to reflect and consider more complex outcomes of gaming.

Gambling: The results of the present study indicate that gambling, in spite of being an illegal activity for underage youth, appears to play an important role in adolescents' lives. In fact, adolescents perceive gambling as an activity similar to gaming, since they emphasised that MMORPGs can be played as a gambling activity, allowing people to win money after playing in a number of tournaments. In addition, when asked about the age that individuals start to gamble, both age groups replied it depends on their perceptions of self-efficacy and their skills achieved during video gaming experience. Care should be taken in generalizing these findings but these statements suggest that a risk factor for gambling is their greater familiarity with technology as noted by some researchers (e.g., Griffiths, 1995) that could lead to an over-estimation of the amount of skill in various gambling games. Although these participant statements emphasised the unpredictable nature of gambling (e.g., they talked about luck in gambling), many participants attributed gambling wins to a significant degree of gambling skill. Such beliefs may facilitate the development of a

false sense of confidence that gamblers can exert control over the outcomes in much the same way that they were accustomed to doing when playing video games. These participants' reports suggested both a psychological and behavioural association between gaming and gambling, that has been shown in previous research (e.g. Wood, Gupta, Derevensky & Griffiths, 2004; Griffiths, 1991b; Delfabbro, King, Lambos & Puglies, 2009; Gupta and Derevensky, 1996).

Adolescents also emphasized they could gamble despite age prohibitions, suggesting that gambling opportunities for adolescents are growing. In addition, beyond playing MMORPGs (that can be played as a gambling activity), adolescents also talked about playing online poker. This finding is in line with previous studies which show that this age group engage in online poker (e.g. Griffiths & Parke, 2010; Lambos, Delfabbro & Puglies, 2007), although this appears to be more the domain of young adults, given that they are legally allowed to gamble online.

With regard to the general perceptions about gambling, financial rewards and other positive aspects (e.g., being a 'cool' activity if they have luck), appear to be widespread among adolescents. It is important to note that not a single participant expressed disapproval toward gambling. However, young adults appeared to emphasize some of the more the negative aspects about gambling and talked about potential tempting and manipulating characteristics. These findings in the present study suggest that adolescents have a more positive perception and attitudes towards gambling (rather than video gaming) when compared with young adults. These data could perhaps be explained by the fact that adolescents – due to less mature self-insight resulting from their egocentricity and developmental immaturity – are relatively naive about gambling in the sense they believe that winning is easy (Moore & Othsuka, 1999) and therefore could win lots of money on these activities (e.g. Wood & Griffiths, 1998; Korn, Hurson & Reynolds, 2005), and are not so aware about the potential hazards of gambling (Zangeneh, Mann, McCready & Oseni, 2010). With respect to the skills needed for gambling, adolescents emphasised that people need maturity to engage in gambling activities. One possible explanation for this is that adolescents conceptualize gambling as an adult activity, that gives people the potential to win money and to gain a sense of community (Griffiths, 1995) and therefore requiring some maturity to participate.

In regard to motivations, adolescents talked more about financial rewards and social prestige. Conversely, young adults only reported financial rewards. This finding may be explained in that adolescents view gambling as a socially attractive activity, that

is, it enables adolescents to prove themselves in front of their peers, and is consistent with previous research (Zangeneh et al., 2010). With respect to family perceptions about gambling, a relevant issue was that in both adolescents and young adults, the inter-generational behavior was stressed. This finding is not surprising given that several authors have showed that it is usually parents who introduce gambling to their children (e.g., Griffiths & Wood, 2000; Fisher, 1999). In relation to outcomes from gambling, adolescents talked about entertainment enhancement and a better life due to money being won, whereas young adults emphasised that gambling is an illusion. This finding again showed how adolescents appear to be naive about gambling and tend to overestimate the profitably of gambling and the easiness of winning (Froberg, 2006; Delfabbro, Lahn & Grabosky, 2006).

When asked about common features between gambling and gaming, adolescents consider that both activities share financial aspects, specific features, and positive feelings, such as the pleasure provided. These findings are consistent with previous research that found youth perceive gambling as something exciting and fun (Wood & Griffiths, 2002; Rau, Peng & Yang, 2006). Conversely, young adults – despite mentioning that both activities have in common specific features of the games – were more likely to emphasize the differences between gambling and gaming. This finding may be understood from socio-cognitive development, that is, young adults (due their maturity) can think in more complex ways than adolescents (Selman, 1980), and that adolescents' ability to judge and evaluate a given situation is less developed than adults (Steinberg, 2003).

Overall, the findings in this Portuguese sample are broadly in line with previous research carried out in other countries, such as those in Europe, Australasia, and North America including general perceptions about gaming and gambling (e.g., Skinner et al., 2004), motivations of online gaming (e.g. Frostling-Henningsson, 2009) and gambling (Wood & Griffiths, 2002) and the feelings that are triggered by gambling (Griffiths, 1991a; 2011a) and video gaming (Kuss & Griffiths, 2012a; 2012b).

Strengths and limitations: This study provided a preliminary understanding of Portuguese adolescents and young adults perspectives relating to gaming and gambling. The findings are of substantial interest to various stakeholders in Portugal (and arguably elsewhere) and may have important implications for youth gaming and gambling health guidelines, prevention and treatment strategies. Given the apparent differences

demonstrated in the two age groups, effective prevention programs could be developed that take into account developmental issues and needs. The results appear to suggest that adolescents are particularly vulnerable to gambling. Therefore, a wide range of stakeholders (e.g., therapists, parents, school workers, teachers, etc.) should be made more aware about this potentially risky behavior. Adolescents (and their parents and educators) are often given information and other adolescent risk behaviors (e.g., cigarette smoking, drug and alcohol abuse, and unsafe sexual practices), and both gambling and gaming are other risky behaviors that such groups should be educated about. Such intervention programs should take into account developmental, cognitive, and social aspects, as different age groups have different attitudes and perceptions concerning leisure behaviors such as gambling. Preventive measures should be carried out among high school students aiming to enhance knowledge about gambling and gaming and their risks and to clarify some misconceptions (e.g., the ease in which the money is earned, the probabilities of winning and losing, etc.).

The findings relating specifically to gaming suggested that participants – mainly young adults – perceive it as a useful tool for self-improvement, social, and cognitive purposes, such as exploring other identities, learning second languages, and learning to react quickly. Therefore, stakeholders should also be aware about the strength of this activity. For instance, teachers could also use it in the classroom for teaching educational content. Lecturers could also use gaming to teach students how to generate new ideas and hypotheses, and how to apply the knowledge acquired in practical settings provided by the game. Clinicians should also acknowledge the potential of using games in therapeutic settings, particularly with youth in promoting self-esteem by affording people to explore other identities or to build productive goals, and in providing a safe channel for coping with anger and other negative feelings (Griffiths, Kuss & Ortiz de Gortari, 2013).

Despite some of the inherent strengths of the present study, several important limitations must be kept in mind in interpreting the results of this research. First of all, the exploratory nature of this research does not allow any definitive conclusions being drawn. Furthermore, the findings were based on self-report data (that are of course subject to many well known weaknesses such as the reliability of memory, social desirability and the honesty of the responses given). However, one of the strengths of this particular methodology is its ability to generate new types of hypotheses and suggestions for future research that are unlikely to be generated from other types of

research method. This study is - to the authors' knowledge – the first qualitative study (and arguably the first study) – to compare adolescents and young adults in the Portuguese context. More research is needed to compare these two age groups and longitudinal designs would be helpful in order to determine if excessive gambling and video gaming during adolescence leads to problem gambling and other difficulties reported in empirical literature, such as delinquency and anti-social behaviors.

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