

## A systematic review of adolescents sports gambling

Christopher Kape<sup>1,\*</sup>, Nicolas Hamelin<sup>2</sup>, Christopher Abraham<sup>3</sup>

<sup>1</sup>SP Jain School of Global Management, Vancouver, Canada

<sup>2</sup>SP Jain School of Global Management, Sydney, Australia

<sup>3</sup>SP Jain School of Global Management, Dubai, United Arab Emirates

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### ABSTRACT

The objective of this study is to explore the topic of sports gambling among adolescents, as this activity has become increasingly prevalent among this demographic. A scoping review was conducted using the PRISMA approach, which involved the selection of 42 relevant studies from the Scopus database spanning the period from 2007 to 2021. The review findings revealed that there is limited research specifically focused on understanding the motivations and intentions behind adolescent sports gambling. However, the majority of the studies indicated that young males exhibit a greater inclination towards engaging in gambling activities. This suggests a growing interest in and awareness of this issue, providing numerous opportunities for future research to investigate the motivations and intentions of Generation Z adults in relation to sports gambling. Given the significant growth of gambling, it is important to note the lack of literature examining the satisfaction of needs and frustration of needs among adolescents with regard to sports gambling. Initiatives that address this gap in research would be valuable in expanding our understanding of the motivations and intentions underlying teenage sports gambling, ultimately leading to the implementation of effective measures aimed at reducing gambling-related problems among adolescents.

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### 1. Introduction

Gambling has gained widespread acceptance as a socially permissible form of entertainment (Stucki and Rihs-Middel, 2007), with a significant percentage of adults in the United States (USA), approximately 80%, participating in gambling activities in 2020 (Mills et al., 2021). While most individuals gamble for recreational purposes, a small portion of gamblers experiences negative consequences, including psychological, financial, and legal challenges, due to problematic gambling behaviors (Petry et al., 2018). Given the long-term effects of problem gambling in general and the legalization and rapid growth of sports gambling in the USA, it is crucial to comprehend the factors that influence gambling practices among Generation Z adults. According to the Pew Research Center (Dimock, 2019), Generation Z adults, born between

1997 and 2012, are the first generation to have grown up with widespread access to the internet and portable digital technology.

There is limited research investigating the gambling behaviors of this specific demographic. This study aims to examine this demographic, focusing on individuals of legal gambling age (21 years old in the USA) born between 1997 and 2001 (currently 21-24 years old). Understanding the motivations behind people's gambling activities is essential, considering the potential negative consequences for individuals, society, the economy, and overall health, as well as the potential for gambling-related addiction (Neighbors et al., 2007; Martin et al., 2018). It is crucial to predict gambling behaviors during the transition to adulthood, as new behaviors and activities emerge (Deci and Ryan, 2008; Rodriguez et al., 2015).

International research has consistently shown that gambling is a prevalent aspect of many young people's lives (Hayer and Griffiths, 2014; Calado et al., 2017). Furthermore, today's youth have grown up in an era with abundant gambling opportunities (Volberg et al., 2010). Technological advancements have also introduced new forms of gambling, such as online platforms, mobile applications, and

\* Corresponding Author.

Email Address: [chris@jamcocapital.com](mailto:chris@jamcocapital.com) (C. Kape)

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Corresponding author's ORCID profile:

<https://orcid.org/0009-0000-8247-3124>

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interactive television (Griffiths and Parke, 2010). It has been suggested that adolescents are attracted to these modern forms of gambling due to their similarities to other familiar technology-based forms of entertainment (Delfabbro et al., 2009). Additionally, the increased availability of legal gambling options has contributed to a rise in adolescent gambling and the development of gambling-related issues among young people, despite gambling being illegal for minors (Molinaro et al., 2014). Moreover, adolescents tend to engage in gambling at higher rates than adults.

Previous studies have consistently highlighted gambling as a popular pastime among teenagers. Numerous scholars have conducted research on adolescent gambling and problem gambling due to the rapid expansion of regulated gambling opportunities and the emergence of new forms of gaming. Considering this background, it is crucial to understand the existing research on this topic and identify potential directions for future studies. This study aims to contribute to the literature on adolescent sports gambling, focusing on the available knowledge from previous studies. The systematic review conducted in this study aims to establish a comprehensive framework for understanding sports gambling intentions and motivations. The structure of this paper is organized as follows: The first section provides an introduction and highlights the gaps in the existing systematic literature review. The second section outlines the methodological approach adopted for the review. The third section presents the systematic review findings, including the characteristics of the selected studies and their

contributions to the research questions outlined above. Finally, the last section concludes the paper and suggests a future research agenda based on these findings.

## 2. Research method

The systematic review of the literature will be performed using the "Preferred Reporting Items for Systematic Reviews and Meta-Analyses" (PRISMA) approach to define the criteria for identifying, selecting, and evaluating relevant research on the investigated issue and finding a solution to the problem (Moher et al., 2009).

Scopus and Web of Science online databases were used to find relevant studies. It has wide coverage and accounts for 20 percent more articles than the Web of Science (Martín-Martín et al., 2018). The review covered scientific and peer-reviewed articles published from 2007 to 2021 that matched the inclusion and exclusion criteria mentioned in Table 1. Fig. 1 presents the PRISMA for this study.

The initial search was made through the Scopus database to have broad coverage. The terms "youth gambling prevalence" OR "adolescent gambling" OR "adolescent problem gambling" OR "youth gambling addiction" OR "compulsive gambling" AND "sports betting" OR "sports gambling" were searched in keywords, titles, and abstracts.

The results extracted from selected articles are reported by giving "publication trend by year," "journals used to publish papers," "most cited articles," themes that emerged from article review, and future research direction.

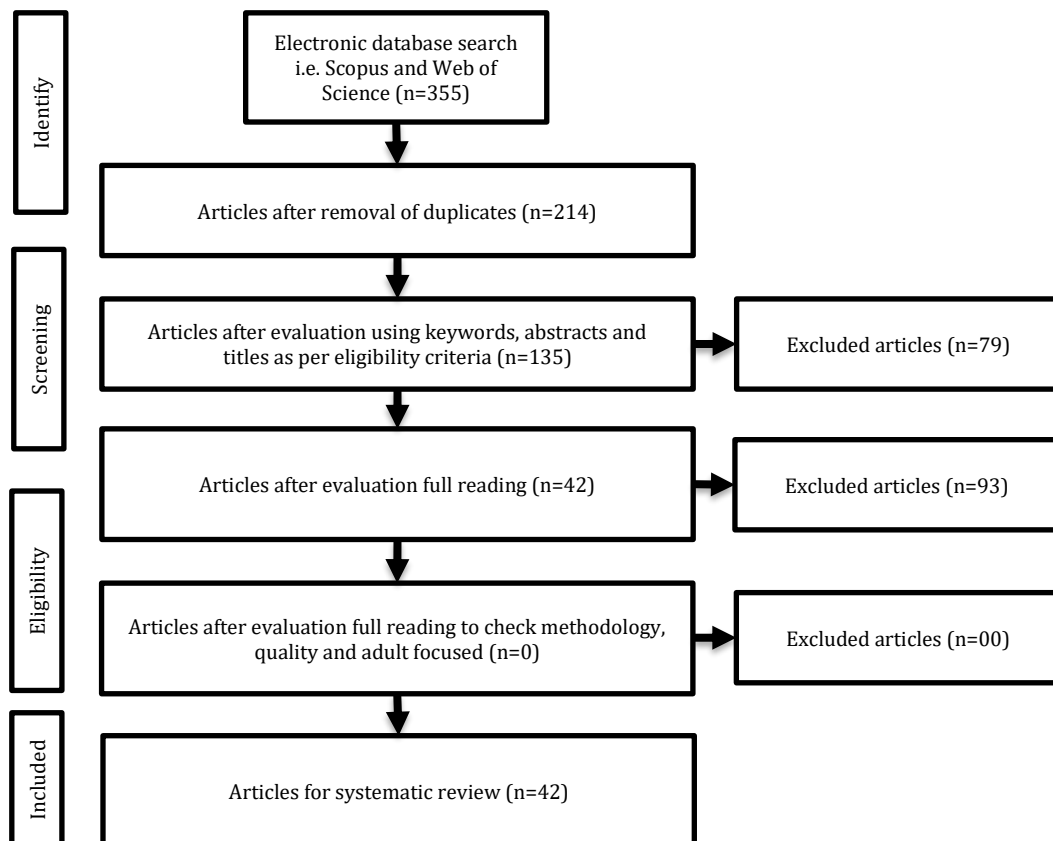


Fig. 1: PRISMA for study

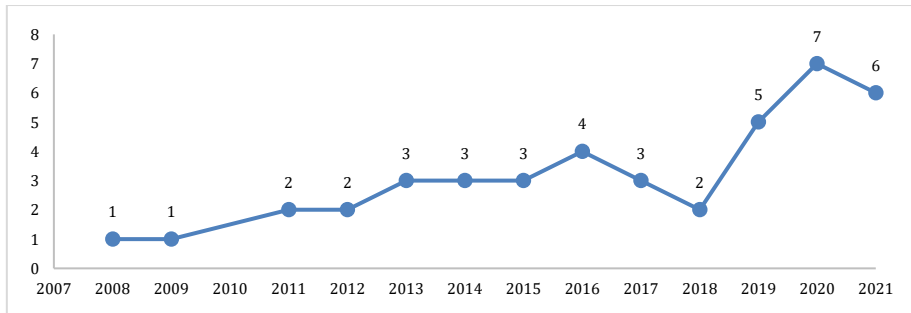
**Table 1:** Inclusion and exclusion criteria

No.	Included	Excluded
1	Published articles in peer-reviewed journals.	Conference papers, magazines, news reports, blog posts, dissertations
2	Articles with the main focus on adolescents sports gambling	Articles without focus on Sports gambling
3	Articles in English	Articles in other languages (Chinese, Spanish, etc.)
4	Articles in the field of "Business, management, Science and Technology"	Articles belong to fields "Arts, Music, Medical, Language and History"

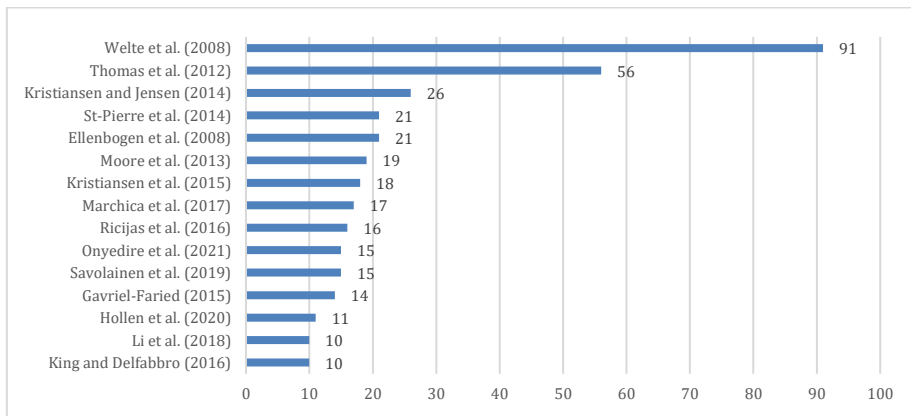
**3. Analysis and results**

The descriptive analysis of 42 selected studies is presented in Figs. 2, 3, and 4. The yearly publication trend indicated a positive trend in gambling research focusing on youngsters. Most citations were earned by Welte et al. (2008), Thomas et al. (2012), and Kristiansen and Jensen (2014). The top journals where most of the studies are published are "Journal

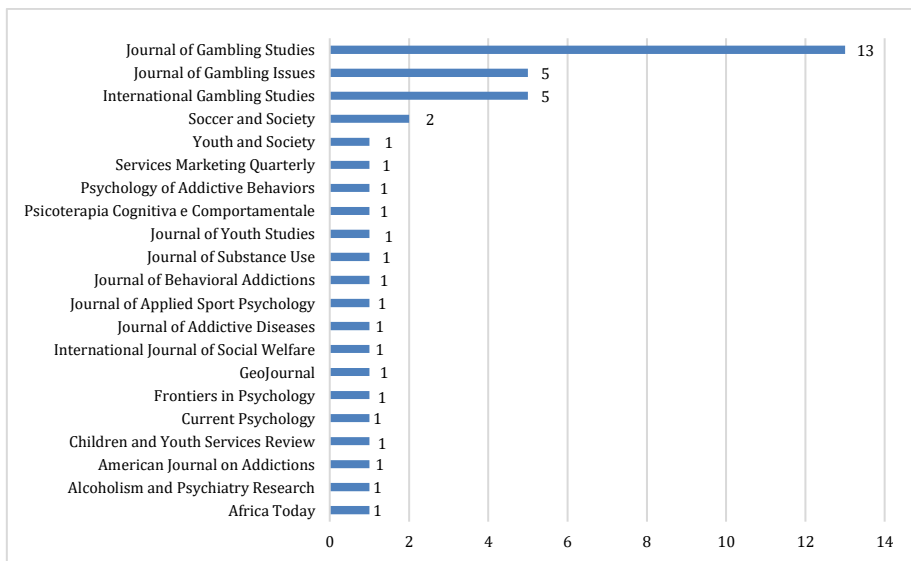
of Gambling Studies," "Journal of Gambling Issues," and "International Gambling Studies." The review of studies indicated that sports gambling among Generation Z adults was less likely focused on by scholars. Indeed, multiple perspectives have been covered related to youngster association with betting and gambling.



**Fig. 2:** Yearly publication trends



**Fig. 3:** Top 15 authors and citations for papers



**Fig. 4:** Top journals with number of publications

### 3.1. Adolescent gambling attraction

The current review of research on adult gambling done worldwide since 2007 reveals that many countries have never conducted studies on adult gambling motivation and intention. Most adult gambling research has taken place in Australia, Europe, and North America. Gambling has grown in popularity as a leisure pastime during the last decade, especially among those aged 11 to 25 or youth (Calado et al., 2017; Molinaro et al., 2018). Despite the fact that gambling is forbidden for underage minors, new gambling technologies make many types of gambling widely available and much simpler for even the youngest people to access (Elton-Marshall et al., 2016; Canale et al., 2016). Regarding the profile of gamblers, the normal age of commencement of gambling is in the medium to late teens. Hence, gambling disorders develop at younger ages (Barrera-Algarín and Vázquez-Fernández, 2021).

Despite the presence of legal hurdles and entrance limitations, adolescents in many countries are recognized to engage in various gambling activities (Blinn-Pike et al., 2010; Gupta et al., 2013). According to research, adolescents are at a higher risk of acquiring problematic gambling behaviors, with estimated rates of gambling problems typically being more significant than in older adults (Welte et al., 2008; Petit et al., 2015; King and Delfabbro, 2016). Most youngsters start gambling in groups, so-called collective betting (Garrido Fernández et al., 2017). Virtual communities are presently being utilized for gambling to find like-minded individuals (Kim et al., 2019). Whereas excessive gambling is linked to everyday engagement in virtual gambling groups.

This sort of communal gambling has not been linked to feelings of loneliness among young Americans. Megías (2020) reported that people prefer to go gambling in groups. Due to immaturity, youngsters face the risk of gambling, misconceptions about outcomes, and a poor sense of statistical probability (Delfabbro et al., 2006; Hollén et al., 2020). These factors might lead to chasing losses, a frequent gambling issue. Although, executive function is not fully formed throughout adolescence, which raises risk-taking behaviors (Blakemore and Choudhury, 2006). This lack of self-control can increase the number of impulsive bets, particularly in sports gambling (Hollén et al., 2020).

Young people may also be more vulnerable to environmental influences that influence gambling, including peer and family influence (Langhinrichsen-Rohling et al., 2004) and marketing messages from companies (Derevensky et al., 2010). Sports betting is heavily promoted, particularly among young males (Lopez-Gonzalez et al., 2017). For that purpose, social media is being considered a lot by companies to target adults. Twitter gambling marketing highlighted how youths are attracted to gambling by sharing tweets from gambling companies (Rossi et al., 2021). A previous study also reveals that the

prevalence rate of gambling participation is significantly higher among youngsters and that it is mainly centered on individual betting on skill-based games (Elton-Marshall et al., 2016). It was determined that adolescents highly associated with offline friendship groups were less likely to participate in problem gambling. Still, youth who strongly identified with online friendship groups had the reverse impact (Savolainen et al., 2019).

Young individuals begin gambling not as a result of simply individual features or motivation but rather due to social processes occurring inside large social networks (Kristiansen et al., 2015). As reviewed, substantial attention has been paid to the psychological and behavioral aspects of young people who gamble excessively. Less emphasis has been focused on young people who play without having a poor gambling experience (Blinn-Pike et al., 2010). A recent study conducted by Mihić et al. (2022) reported that family and school factors are associated with gambling activities. Adolescents who are far less attached to school are more likely to engage in gambling behaviors (Dickson et al., 2008). School connections have been recognized as protective mechanisms in the context of teenage gambling problems (Magoon and Ingersoll, 2006; Dowling et al., 2017).

### 3.2. Adolescent gambling intention

Adults engage in gambling as entertainment and social interaction (Calado and Griffiths, 2016). Gambling is becoming one of the most popular ways for youngsters to spend their leisure time (Wiebe and Falkowski-Ham, 2003). The issue is most acute during adolescence, a period of growth when it is easy to engage in risky activities, including addictive behaviors (Colasante et al., 2014). Positive gambling result expectations are characteristics linked to adult gambling (Gillespie et al., 2007) and the social circle influence (Shead et al., 2010). Blaszczynski and Nower (2002) suggested a need to study different models to check the influence of individual and societal variables on the onset and maintenance of gambling habits in terms of increasing the understanding of gambling patterns. According to Donati et al. (2014), gambling is a financially rewarding pastime for many youngsters.

Similarly, Wood and Griffiths (2004) claimed that young people view gambling as a beneficial or productive means to generate money. These findings are consistent with the idea that youngsters evaluate risks as having more advantages than costs (Byrnes, 2002). It underlines the need to study teenagers' views regarding gambling in order to understand adolescent gambling (Donati et al., 2013). Subjective norms emerge from teenagers' perceptions of their primary referents' gambling attitudes (León-Jariego et al., 2020). Gardner and Steinberg (2005) discovered that while conducting risky activities, teenagers are vulnerable to the impact of others. Zhai et al. (2017) reported that gambling behavior among peers plays a vital role in developing future



problem gambling. Aside from peer pressure, parental views on gambling are linked to teenage gambling participation (Felsher et al., 2003).

According to Campbell et al. (2011), parents' positive attitudes toward adolescent gambling led to its normalization. Most of the studies considered the theory of planned behavior to measure gambling intention (Wu et al., 2013; St-Pierre et al., 2015; Flack and Morris, 2017). A study has been conducted on the impact of social ties and community variables on the development of gambling behavior and gambling issues among adolescents, focusing on the risk factors (Shead et al., 2010). Furthermore, Gupta and Derevensky (2000) reported that gambling issues could lead to the loss of nongambling companions. Hardoon et al. (2004) reported that youngsters are involved in gambling activities due to their parents. However, it is essential to know that poor family cohesiveness, limited parental monitoring, and family disintegration are more common among young individuals inclined toward gambling (Dickson et al., 2008; Vitaro et al., 2001). Martin et al. (2010) identified that attitude, subjective norms, and perceived behavior control significantly influence on gambling intention of college students. One limitation of the theory of planned behavior is that it does not consider the individual's self-determination and motive to gamble. However, experience is also considered to check the individual planned behavior (Wu et al., 2013; Hing et al., 2015). Adolescent gambling is a growing concern, as research has shown that early-onset gambling can lead to more severe gambling problems later in life. Intentions to gamble are related to both attitudes toward gambling and perceived behavioral control. Adolescents who held more favorable attitudes towards gambling and perceived themselves as having more control over their gambling behavior were more likely to intend to gamble in the future.

A study by Wardle et al. (2011) indicated that social influences such as peer gambling and parental gambling are related to adolescent gambling behavior. Adolescents whose peers engaged in gambling activities and whose parents gambled were more likely to gamble themselves and had higher intentions to gamble in the future. Therefore, it is important to consider the role of both individual and social factors in adolescent gambling intentions. Overall, research suggests that adolescent gambling intentions are influenced by a variety of factors, including attitudes toward gambling, perceived behavioral control, impulsivity, and social influences. It's important to understand the drivers of adolescent gambling intentions in order to develop effective prevention and intervention strategies.

### 3.3. Adolescents sports gambling

Sports gambling may be traced back to ancient times, such as the Roman Empire (Sauer, 1998). This massive industry is supported by aggressive marketing of gambling brands and products via

sports (Li et al., 2018). Sports gambling has long been a popular kind of betting, with industry sources estimating that it now accounts for up to one-seventh of the industry's revenues (Hing et al., 2016). Hence, involvement in sports wagering has increased among adolescents. Elton-Marshall et al. (2016) reported that 42 percent of adolescent college students are involved in gambling, considering the study sample size of 10,035. Donati et al. (2013) reported that around 77 to 83 percent of adolescents are involved in a different form of gambling. Nelson et al. (2007) reported that 47 percent of athletes students, 47 percent of sports fans, and 38 percent of other students gambled. Further, male students were involved more in sports gambling.

People usually start gambling in their mid-20s and continue for roughly ten years (Wang et al., 2021). Those suffering from compulsive gambling, on the other hand, are more inclined to gamble on sports than on any other form of gambling activity (Kessler et al., 2008). Sheela et al. (2016) reported that 30 percent of adolescents in Malaysia had gambled, out of a sample size of 2265. Additionally, sports gamblers are at a larger risk of developing gambling-related disorders than those who engage in other sorts of gambling activity (Martin et al., 2018). Sports betting is a popular gambling choice among college students. The most popular gambling option in the USA is "daily fantasy sports" (Caldeira et al., 2017). As per the U.S. Internal Revenue Service, "daily fantasy sports" is a kind of gambling. The talent required to pick and trade fantasy players is akin to the competence required to select winners in other sports gambling. A higher degree of fantasy sports participation among college students is substantially connected to the frequency of gambling (Martin et al., 2018). College students who pay a fee for fantasy sports usually face mental health issues compared to others. Hence, fantasy sports attract younger who are less inclined to face negative outcomes (Houghton et al., 2019).

According to gambling literature, young males are the targeted demographic for sports betting companies (Deans et al., 2017). According to a qualitative study, males feel pushed by sports betting commercials and are driven to wager (Thomas et al., 2012; Deans et al., 2017). Because of the popularity of broadcast sports, there is a need for legislation that tackles all types of gambling promotion during sporting events and information transmitted through social media platforms (Killick and Griffiths, 2022). Advertisers frequently use strategies or themes that appeal to youngsters. Some sports betting commercials, for instance, have been discovered to include comedy, celebrity, cartoons, and animations (Pitt et al., 2018; Thomas et al., 2015). According to another study, young individuals who favor sports gambling advertising are more inclined to consider betting as a risk-free way to make money (Djohari et al., 2019). The focus is on sports betting as a fast-growing segment of the gambling business.

In a recent study, Seal et al. (2022) reported that sports betting is seen as innocuous, widespread, and an important element of enjoying sports, especially among young males. Its influence on the normalization of gambling, particularly among the young, has been a growing source of worry in nations such as Australia and the United Kingdom during the last decade (Purves et al., 2020). A growing corpus of studies has begun to examine the aspects contributing to sports betting being regarded as a normal part of sports. There has been a significant study focusing on the emergence and significance of sports betting marketing, intending to measure how widespread gambling ads are during sports programming especially using social media platforms (Milner et al., 2013; Thomas et al., 2018). Pitt et al. (2016) identified that children could remember sports gambling brand names, locations where they had seen betting commercials, and narrative aspects related to adverts. Sports gambling has also been linked to forming socially valued identities in young males (Lamont and Hing, 2020). Thereby, it is important to measure the youngster's intention and motivation toward sports gambling.

#### 4. Discussion

Adolescent sports gambling is a topic of growing concern, as it has been shown to have negative impacts on the physical, emotional, and financial well-being of young people. Adolescent gambling behavior is associated with an increased risk of depression, anxiety, and substance abuse. Additionally, research by Gupta and Derevensky (2000) suggested that adolescent gambling can lead to a host of negative outcomes, including poor academic performance, truancy, and involvement in criminal activity. However, the prevalence and impact of adolescent sports gambling is not well understood. It was found that while the overall prevalence of youth gambling is relatively low, certain subgroups, such as males and minority youth, are at greater risk for problem gambling. The study indicates that sports betting is the most popular form of gambling among youth and adolescents, with young males being more likely to engage in this activity than young females. It is worth noting that with the widespread internet access and the increasing proliferation of mobile devices, the accessibility of online sports betting has increased dramatically. As a result, the number of young people who are engaging in sports betting has been increasing as well. This easy access has led to concerns about the lack of effective prevention and intervention measures for youth sports gambling.

Adolescent sports gambling is a growing concern, as it has the potential to lead to a range of negative consequences for youth and their families. Understanding the intentions and motivations of adolescent sports gamblers is critical in order to develop effective prevention and intervention strategies. One of the key implications of adolescent sports gambling intentions is the potential for

addiction. Adolescents are particularly vulnerable to developing gambling problems, due to their still-developing brains and their impulsivity, poor decision-making, and sensation-seeking. Additionally, adolescent sports gamblers may also be at risk for other negative consequences, such as financial problems, poor academic performance, and problems with relationships and social interactions. Adolescent sports gamblers may also be at risk for co-occurring disorders such as depression, anxiety, and substance abuse, which can further exacerbate the negative consequences of gambling. Furthermore, adolescent sports gambling intentions can also have an impact on the youth's family. Families may experience financial difficulties due to their child's gambling or may be affected by the emotional and behavioral problems that can result from adolescent gambling.

Therefore, it is important to target adolescent gambling intentions with prevention and intervention programs, to help them understand the potential negative consequences of gambling and provide them with alternative ways to cope with stress, anxiety, and other emotions that they may have, and to educate them on how to make healthy decisions. It is also important for parents, educators, and other adults who work with adolescents to be aware of the signs of adolescent sports gambling and to know how to respond if they suspect a problem. This includes educating themselves on the subject, being aware of the warning signs, and knowing where to turn for help.

#### 5. Conclusion

This study conducted a systematic literature review to examine the current scholarly knowledge on adolescent sports gambling. Despite a recent increase in published papers, the review found that academic research on this topic remains limited. However, this indicates a growing interest and recognition of the issue, providing various opportunities for future research to explore the motivations and intentions of Generation Z adults toward sports gambling. Additionally, the review findings highlighted that male adolescents show a higher inclination toward sports gambling. Furthermore, the study emphasized the significant role of attitude in shaping gambling behavioral intentions. However, an important aspect to investigate further is the level of self-determination and planned behavior of adolescents concerning sports gambling. Given the target population of young individuals, including college students and Generation Z, it is crucial to examine the predictors of sports gambling motivation, such as the satisfaction of needs and the experience of frustration. Engaging in such research endeavors can enhance our understanding of adolescent sports gambling motivations and intentions, facilitating the development of effective strategies to mitigate gambling-related problems among youth.

## 6. Future research areas

The study of adolescent sports gambling represents a burgeoning area of research with significant unresolved inquiries. To gain comprehensive knowledge of this phenomenon and develop efficacious prevention and intervention strategies, future research endeavors should concentrate on several crucial domains. Primarily, there is a pressing need for further investigation into the prevalence and patterns of adolescent sports gambling. While studies indicate that a substantial proportion of adolescents engage in sports gambling, reliable data regarding the exact number of youths involved and the frequency of their participation remains limited. Addressing this knowledge gap necessitates the collection of representative data from diverse and sizable samples of adolescents. Additionally, such research should explore the specific sports and types of betting adolescents partake in, as well as the contextual factors influencing their betting behaviors (e.g., online platforms, school settings, social circles).

Secondly, a deeper comprehension of the risk and protective factors associated with adolescent sports gambling is imperative. Existing studies have revealed that certain subgroups, such as males and those with co-occurring mental health conditions, may be more susceptible to negative consequences stemming from sports gambling. However, a comprehensive understanding of the specific factors that contribute to increased or decreased risk remains elusive. Research should aim to elucidate these factors and also focus on identifying protective elements, such as parental monitoring and involvement, which could mitigate the harms associated with adolescent sports gambling.

Thirdly, there is a critical need for further investigation into the physical and mental health implications of sports gambling among adolescents. While studies suggest that adolescent sports gamblers may be at heightened risk for various adverse outcomes, including depression, anxiety, and substance abuse, there is a dearth of data regarding the precise health ramifications linked to this form of gambling. Furthermore, the mechanisms through which gambling may lead to harm necessitate deeper exploration.

Fourthly, research efforts should be directed toward the development and evaluation of effective prevention and intervention strategies targeting adolescent sports gambling. Rigorous studies are required to assess the efficacy of diverse prevention and intervention approaches, elucidate the specific components that yield the greatest impact, and identify best practices in this regard.

Lastly, it is essential to conduct culturally tailored research to comprehend the perception and manifestation of adolescent sports gambling within different cultural contexts. This will facilitate the effective targeting and addressing of this issue in diverse populations.

In conclusion, future research endeavors in the field of adolescent sports gambling should prioritize comprehensive investigations into the prevalence and patterns of engagement, risk, and protective factors, health consequences, development of prevention and intervention strategies, as well as culturally sensitive approaches. Addressing these areas will significantly contribute to the understanding and mitigation of the challenges posed by adolescent sports gambling.

## Compliance with ethical standards

## Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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