



## Original article

# Peer and Parental Social Norms as Determinants of Gambling Initiation: A Prospective Study

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## A B S T R A C T

**Purpose:** Despite the potential consequences of gambling during adolescence, the factors involved in the initiation of this behavior are relatively understudied. Using a longitudinal design, the present study analyzed the contribution of parental and peer norms to adolescent gambling initiation.

**Methods:** A sample of 440 adolescent non-gamblers (50.9% males, mean<sub>age</sub> = 14.85 [standard deviation = 1.41]) completed a baseline survey and a 1-year follow-up questionnaire. The baseline survey included assessments of perceived descriptive and injunctive norms from parents and peers, perceived parent and peer gambling severity, and susceptibility to peer pressure. A multivariate hierarchical logistic regression model was used to assess the contribution of baseline measures to adolescent gambling initiation at follow-up.

**Results:** Of the 440 non-gamblers assessed at baseline, 160 (36.4%) reported initiating gambling at follow-up. All the peer factors were prospectively associated with gambling initiation, while only the perceived injunctive norms of parents were associated with initiation. Higher susceptibility to peer pressure, perceived gambling by peers, and peer and parental approval of gambling at baseline were associated with higher odds of adolescent gambling initiation at follow-up. In contrast, the likelihood of gambling initiation among adolescents decreased as the perception of peer gambling severity increased.

**Discussion:** The identification of parental and peer factors associated with adolescent gambling initiation may provide support for relevant preventative interventions aimed at avoiding or delaying gambling initiation among adolescents. Specifically, to reduce the initiation of gambling, preventative programs should focus on helping adolescents to find strategies for resisting peer influences.

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**IMPLICATIONS AND  
 CONTRIBUTION**

This study longitudinally examines the parental and peer factors related to adolescent gambling initiation. These findings should be considered in the development of preventative programs that could teach adolescents the necessary strategies for resisting peer influences to initiate gambling.

**Conflicts of interest:** The authors have no conflicts of interest to disclose.

**Ethics Approval:** The study was approved by the Bioethics Committee of the University of Huelva, Spain (No 2018000100001203).

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Adolescence is a significant period of development, involving new experiences, challenges, and responsibilities, resulting in the construction of identity and the understanding of the self in relation to the social world [1]. In order to achieve this new psychosocial identity, adolescents explore new behaviors that help them gain independence from their parents, as they begin to identify more with peers [2]. Both the pursuit of new experiences and stronger identification with peers can lead to risky behaviors, including gambling, which, in recent decades, has received particular attention from researchers and clinicians due to its potential negative psychological (e.g., anxiety, depression), social (e.g., problems with peer and family relationships), and financial consequences [3].

Despite gambling generally being illegal during adolescence (the legal age varies between countries and type of gambling activity), there is a strong evidence to suggest that gambling among adolescents is prevalent (see [4] for a review). In Europe, 11%–33% of adolescents aged 15–16 years reported gambling in the last year [5]. Initiation occurs typically in middle adolescence (approximately 15–17 years; [6,7]), and some studies show that gambling can even begin during preadolescence (10–13 years; [8,9]). This is important because the earlier onset of gambling has been shown to increase the risk of experiencing gambling-related harms as an adult [6].

A better understanding of the factors underlying the initiation of gambling during adolescence may be an effective way of reducing harms resulting from youth gambling. However, the existing research on adolescent gambling has tended to focus on the predictors of gambling frequency and problem gambling among adolescents (e.g., [10–12]). The few longitudinal studies that have analyzed the factors related to adolescent gambling initiation have identified impulsivity [8], playing simulated gambling games [13], and exposure to gambling advertising [13] as relevant factors. However, the initiation of gambling in adolescence is a complex phenomenon including several individual, psychosocial and contextual factors [14]. In this regard, it has been suggested that, while personal factors (e.g., loss of control, negative effect) may be better at explaining persistent gambling behavior, social, cultural, situational, and environmental factors may play a critical role in determining gambling initiation [15].

Social norms have figured centrally in several psychological theories (e.g., Social Learning Theory and the Theory of Planned Behavior) and refer to common standards for behavior, set by and for members of social groups [16]. For instance, Social Learning Theory [17] claims that social norms may influence adolescents by providing cues or opportunities to conform to appropriate behavior in a group.

Social norms may actively and passively influence adolescent behaviors [18]. Active influence occurs when others encourage or pressure someone to think or behave in a specific way [18] and, therefore, adolescents' susceptibility to pressure from their peers can be a determining factor for engaging in risky behaviors [19,20]. Two types of passive influence have typically been described—descriptive and injunctive norms. The first refers to the perceived prevalence of a given behavior [16], which serves as a behavioral guide that facilitates more rapid decision-making involving less cognitive effort [21]. Injunctive norms refer to the perceived degree of social approval/disapproval from significant others regarding a given behavior [16] and require more

cognitive elaboration and consideration of interpersonal goals [21]. The differential impact of perceived descriptive and injunctive norms on one's behaviors may vary as a function of the nature of the studied behavior [22]. However, in the field of gambling, previous studies have reported a greater impact of both descriptive norms [23] and injunctive norms [24].

During adolescence, multiple salient referent groups may set both descriptive and injunctive norms, the most notable being parents and peers [25]. Previous research has shown that peers may be more influential than parents in terms of risky behaviors, including gambling frequency, problem gambling [24,26], smoking [27], and substance use [28]. This could be explained by the fact that, across adolescence, parental supervision decreases while time spent with friends increases [2].

The way that descriptive and injunctive norms favor early onset of health risk behaviors has been extensively studied. Vermeulen-Smit et al. [29] found that having a heavy-drinking father or two heavy episodic drinking parents predicts early onset (and heavier) adolescent drinking. Adolescents who perceive parental and peer cannabis use are also more likely to initiate its consumption [30,31]. Further, a recent meta-analysis found that parents' and close friends' descriptive norms and parents' injunctive norms of smoking behavior are consistent predictors of youth smoking initiation [27].

In the field of gambling research there is also evidence for an association between social norms and gambling behavior (i.e., frequency of gambling or problem gambling). It has been shown that adolescents who report greater susceptibility to peer pressure [26], perceive parental and peer approval of gambling (i.e., injunctive norms; [32]), and have parents and peers who gamble (i.e., descriptive norms; [33]), exhibit higher levels of gambling behavior. However, despite that fact that social norms have shown to be strong predictors for the onset of various risk behaviors (e.g., alcohol and tobacco use, [27,29]), to our knowledge, no previous research has examined their role in gambling initiation. Determining the contribution of these psychosocial variables to the initiation of gambling may help in informing the development of preventative interventions aimed at avoiding or delaying gambling behavior.

Thus, based on the empirical evidence described above, we hypothesized that favorable parental and peer social norms toward gambling will be positively associated with a higher likelihood of initiating gambling in adolescents. Moreover, we hypothesized that peer social norms will be more influential than parent social norms in explaining gambling initiation [24,26]. Given the limited research in the field of gambling, and their mixed results [23,24] concerning which types of perceived norms (i.e., descriptive or injunctive) may be more influential, no hypothesis is proposed in this regard.

## Method

### *Participants and procedure*

Data for the current analysis were drawn from a parent project on the factors related to adolescent gambling behavior. The initial convenience sample consisted of 931 adolescents aged 12–17, attending four high schools in Huelva, a province located in South-West Spain, with a total of 92 public high schools and an estimated 31,000 students [34]. To maximize the variability and

**Table 1**  
Descriptive statistics for the study variables comparing non-initiators and new gamblers at follow-up

Variables at baseline	Follow-up		Statistical difference <sup>a</sup>
	Non-initiators (N = 280)	New gamblers (N = 160)	
Gender (male)	46.8%	58.1%	$\chi^2(1) = 5.24, p = .022$
Age (M, SD)	14.72 (1.38)	15.06 (1.44)	$Z = -2.72, p = .006$
Perceived parent injunctive norm (M, SD)	1.20 (0.61)	1.54 (0.80)	$Z = -6.21, p < .001$
Perceived parent descriptive norm	11.4%	18.8%	$\chi^2(1) = 4.51, p = .034$
Perceived parent gambling severity	0.4%	1.9%	$\chi^2(1) = 2.60, p = .107$
Perceived peer injunctive norm (M, SD)	1.74 (0.87)	2.30 (1.00)	$Z = -5.73, p < .001$
Perceived peer descriptive norm (M, SD)	1.45 (0.66)	1.68 (0.69)	$Z = -3.58, p < .001$
Perceived peer gambling severity (M, SD)	1.12 (0.36)	1.09 (0.31)	$Z = -0.14, p = .885$
Susceptibility to peer pressure (M, SD)	1.63 (0.57)	2.12 (0.70)	$Z = -7.21, p < .001$

Bonferroni-corrected *p* values within each group are .005 to conclude significance. M = mean; SD = standard deviation.

<sup>a</sup> Tested with Mann-Whitney *U* test or Chi-Square-test.

representativeness of respondents, we selected high schools from four different geographic and social context: two schools were located in the city of Huelva, one on the coast and one in a rural area.

Information was collected by administering paper-and-pencil questionnaires at two time points: baseline (February 2018–May 2018) and 1-year follow-up. Researchers informed all participants about the study's content and its anonymous and voluntary nature. Moreover, written informed consent was obtained from parents and participants before the inclusion of the participants in the study. The baseline and follow-up questionnaires were linked to each other by a self-generated code. To generate this code, participants were asked to use the first letter of their mother's and father's first name, the first two letters of their name, and the day of their birth.

Given the study objectives, of the original 931 participants, we selected those who reported not having gambled at baseline ( $n = 653, 70.1\%$ ). Of these, 440 adolescents completed the follow-up questionnaire, which constituted the final study sample (50.9% males,  $M_{age} = 14.85$  [standard deviation = 1.41]). None of the participants responded at follow-up less than 12 months from baseline. Most responded at 12 months, and none of them responded later than 14 months. Of the non-gamblers assessed at baseline, no statistically significant differences were found between those who participated in the follow-up ( $n = 440$ ) and those who did not ( $n = 253$ ) in terms of study variables (these variables can be seen in Table 1), except for parental ( $\chi^2 = 4.24, p = .039$ ) and peer gambling (Mann-Whitney  $U = 42,491.5; Z = -2.205, p = .027$ ).

The protocol for this research study was approved by the Bioethics Committee of the University of Huelva.

### Instruments

**Perceived peer and parental injunctive norms.** Based on previous studies [35] we used a single item to evaluate injunctive norms: "To what extent would your parents/peers agree with you gambling?", measured on a 5-point Likert scale from 1 (*totally disagree*) to 5 (*totally agree*).

**Perceived peer and parental descriptive norms.** Parental and peer gambling were assessed with a single item each, previously used in the study by Langhinrichsen-Rohling et al. [26]: "Do either of your parents gamble?", answered on a *yes/no* format, and "How

many of your peers would you estimate gamble?", measured on a 5-point Likert scale from 1 (*none*) to 5 (*all*).

**Perceived peer and parental gambling severity.** One item for each reference group was constructed based on the measure of peer and parental gambling developed by Langhinrichsen-Rohling et al. [26], specifically "Do you think that either of your parents gamble too much?", answered using a *yes/no* format; and "How many of your friends do you estimate have gambling-related problems?", measured on a Likert scale from 1 (*none*) to 5 (*all*).

**Susceptibility to peer pressure.** This was measured using seven items from Dielman et al. [36]. The original items assessed an individual's tendency to go along with peers who encourage vandalism, drinking, skipping school, smoking, and avoiding studying. To include an assessment of peer pressure to engage in gambling activities, we modified the wording of two items that referred to alcohol use. These two items were a) "if you are at a party where your friends are gambling, would you feel left out if you were not also gambling?" and b) "if a friend offers you some coins to gamble, would you accept them?" Responses were measured on a 5-point Likert scale from 1 (*never*) to 5 (*always*). Higher scores are indicative of higher levels of susceptibility to peer pressure. The Cronbach's alpha for this scale was 0.73.

**Gambling initiation.** In the present study, we assessed six of the most prevalent adolescent gambling activities in the literature [37,38]. Specifically, participants were asked at baseline and follow-up if they had participated in sports bets, fruits/slot machines, roulette, poker, scratch-cards or lotteries, or bingo during the past 12 months. For each of these six activities, participants had to indicate whether they had used them in both online and land-based mode. Response options were *never*, *less than monthly*, *monthly*, *weekly*, and *daily*. Participants who responded "never" for each gambling activity at baseline were classified as *non-gamblers* and constituted the sample of this study. Of these non-gamblers, participants who responded "never" for all gambling activities at follow-up were classified as *non-initiators*, while those who reported gambling during the follow-up period were classified as *new gamblers*.

### Data analysis strategy

We first conducted descriptive and bivariate analyses. A multivariate hierarchical logistic regression model was then used

**Table 2**  
Correlation between the study variables

	1	2	3	4	5	6	7	8	9	10
1. Gender (0 = male)	-									
2. Age	0.06	-								
3. Perceived parent injunctive norm	-0.09	0.10*	-							
4. Perceived parent descriptive norm (1 = yes)	-0.08	0.11*	0.12**	-						
5. Perceived parent gambling severity (1 = yes)	-0.04	0.00	-0.01	0.23***	-					
6. Perceived peer injunctive norm	-0.17***	0.08	0.32***	0.17***	0.03	-				
7. Perceived peer descriptive norm	-0.03	0.23***	0.02	0.01	0.00	0.24***	-			
8. Perceived peer gambling severity	0.01	0.04	0.00	0.00	-0.03	0.10*	0.47***	-		
9. Susceptibility to peer pressure	0.04	0.27***	0.20***	0.08	0.05	0.16**	0.11*	0.00	-	
10. Gambling initiation at follow-up (1 = yes)	-0.11*	0.11*	0.23***	0.10*	0.07	0.28***	0.15**	-0.04	0.34***	-

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

to examine the social norms factors associated with gambling initiation during adolescence, while controlling for gender, age, and school of origin. These covariates were entered into the first block of the model. Parental and peer factors were then included in the second and third block, respectively. We used gambling initiation at follow-up (coded no = 0 and yes = 1) as the dependent variable for the analysis (reference group = non-initiators).

Stepwise backward elimination was used, testing each candidate variable for removal using the Wald Chi-square statistic. When a significant relationship was detected by this test, interpretation of the coefficient was followed by calculating the adjusted odds ratio (AOR; 95% confidence interval [CI]). The goodness-of-fit of the model was examined using the Hosmer-Lemeshow and Omnibus tests. Nagelkerke  $R^2$  values were also generated to indicate the amount of variance explained by each block of variables, as well as the final model.

In some cases (7.0%) there were missing data for the variables of interest due to item non-response. A Little's Missing Completely At Random test indicated that the missing values were completely at random ( $p = .316$ ) Missing data were estimated and replaced by using the expectation-maximization imputation procedure in SPSS v.25 (IBM Corp, Armonk, NY).

**Results**

Of the 440 participants, 160 (36.4%) reported initiating gambling at follow-up. The lowest age of gambling initiation was 13.0 years ( $n = 7$ ), and the mean age was 16.17 (standard deviation = 1.39). Of the new gamblers, 130 (81.3%) reported gambling less than monthly, 23 (14.4%) reported gambling monthly, and seven (4.4%) reported gambling weekly or more

frequently during the past year. Scratch-cards and lottery tickets purchased from shops and local vendors (28.8%) were the most prevalent gambling activities in our sample, followed by land-based poker (10.0%), and land-based fruits/slot machines (5.7%).

As shown in Table 1, we found differences between non-initiators and new gamblers on seven of the nine variables included, but only three of these differences (parental injunctive norms, peer injunctive and descriptive norms, and susceptibility to peer pressure) remained significant after Bonferroni correction ( $p < .005$ ). As seen in Table 2, all parental and peer social norms variables were positively correlated with gambling initiation at follow-up, except parental and peer gambling severity.

Table 3 displays the results of the multivariate hierarchical binary logistic regression model to explain adolescent gambling initiation. All three blocks of variables were significantly associated with gambling initiation and improved the overall model fit (see Table 3). The final model explained 29.3% of the total variance of gambling initiation among adolescents.

After controlling for covariates, only one of the three parental factors was retained in the model, that is, injunctive norms. An increase in perceived parental approval at baseline was associated with higher odds of gambling initiation at follow-up (AOR = 1.40, 95% CI [1.03, 1.96],  $p < .05$ ). In contrast, the model retained all four peer-related factors. Increases in perceived peer approval, peer gambling, and susceptibility to peer pressure were associated with higher odds of initiating gambling. Per each increment of susceptibility to peer pressure, the likelihood of initiating gambling, compared with not initiating, was 2.7 times higher (95% CI [1.91, 3.99],  $p < .001$ ). Regarding descriptive and injunctive norms, this likelihood was lower: 1.7 times higher for descriptive norms (95% CI [1.19, 2.60],  $p < .01$ ) and 1.5 times for injunctive norms (95% CI [1.19, 1.97],  $p < .01$ ). In contrast, the

**Table 3**  
Multivariate hierarchical binary logistic regression model for gambling initiation among adolescents

Predictors at baseline	$\beta$	SD	Wald	$p$	AOR	95% CI
Block 1: Covariates (Nagelkerke $R^2 = 0.079$ ; $p < .001$ )						
Gender (0 = male)	-0.46	0.23	4.01	.045	0.63	0.40, 0.99
Age	-0.03	0.09	0.13	.713	0.97	0.81, 1.15
High school of origin	0.28	0.08	12.46	<.001	1.32	1.13, 1.55
Block 2: Parent factors (Nagelkerke $R^2 = 0.049$ ; $p < .001$ )						
Perceived parent injunctive norm (1 = yes)	0.34	0.17	3.91	.048	1.40	1.03, 1.96
Block 3: Peer factors (Nagelkerke $R^2 = 0.165$ ; $p < .001$ )						
Perceived peer injunctive norm	0.42	0.13	11.20	.001	1.53	1.19, 1.97
Perceived peer descriptive norm	0.56	0.20	8.02	.005	1.76	1.19, 2.60
Perceived peer gambling severity	-0.80	0.39	4.13	.042	0.45	0.21, 0.97
Susceptibility to peer pressure	0.14	0.03	29.22	<.001	2.76	1.91, 3.99

Goodness of fit statistics for the final step: Hosmer-Lemeshow test:  $\chi^2(8) = 11.87$ ,  $p < .157$ ; Omnibus test:  $\chi^2(8) = 106.07$ ,  $p < .001$ ; Nagelkerke  $R^2 = 0.293$ . AOR = adjusted odds ratio; SD = standard deviation; CI = confidence interval.

likelihood of gambling initiation among adolescents was lower as perceived peer gambling severity increased (AOR = 0.45, 95% CI [0.21, 0.97],  $p < .05$ ).

## Discussion

Knowledge of the social determinants of gambling initiation in adolescence can help to curtail this risky behavior during what is considered a critical developmental stage. To the best of our knowledge, this is the first study to prospectively examine the role of parental and peer social norms in the initiation of adolescent gambling. Our results revealed that parent and peer injunctive norms, peer descriptive norms, and susceptibility to peer pressure at baseline were positively associated with gambling initiation at follow-up, whereas peer gambling severity at baseline was negatively related to gambling initiation.

Previous studies have reported that adolescents' perception of how much their parents approve of their gambling (i.e., injunctive norms) is associated with gambling frequency [32]. Our results are consistent with these findings and our hypothesis, adding to the previous literature demonstrating that injunctive norms also have a significant impact on adolescent gambling initiation. Although the role of parental approval decreases throughout the course of adolescence [39], our findings suggest that parental attitudes are still key determinants in adolescents' decisions to engage in certain behaviors. Indeed, a recent study showed that parents perceived harm of e-cigarettes was negatively related to e-cigarette use intentions in e-cigarette naïve adolescents [40]. Thus, encouraging parents to communicate their disapproval of their children's gambling may be a useful strategy to be included in preventative programs aimed at reducing gambling initiation in adolescence.

While prior studies found that adolescents' perception of their parents' gambling behavior (i.e., descriptive norms, parent gambling severity) is associated with problem gambling [33], contrary to our expectations, we did not find such a relationship. One possible explanation for this might be that factors related to gambling initiation could differ from those associated with gambling behavior once it has started [15]. Further, our finding that parental injunctive—but not descriptive—norms were related to gambling initiation could indicate that the decision to begin gambling during adolescence may be motivated by what they believe is expected of them rather than their perceived parental gambling behavior. This is consistent with the assumption that parents are more likely to influence adolescent behavior through imposing and reinforcing consistent norms than through the modeling of behavior [41].

Unlike parental factors, all peer norm factors examined in the current study significantly explained adolescent gambling initiation at follow-up. This is in line with our hypothesis, and consistent with previous studies showing that peers are the most influential group in adolescent behavior, even more than parents or other adults [24,26–28]. In accord with social learning theory [17] and previous literature on the onset of health risk behavior [27,31], both the descriptive and injunctive norms of peers were longitudinally associated with gambling initiation in the current study. This finding indicates that adolescents are more likely to imitate a behavior such as gambling if they have observed it in their peer group, and is more likely to be adopted when their engagement in such a behavior is viewed as favorable rather than unfavorable among the peer group.

Further, in our study, the susceptibility to peer pressure to engage in risky behaviors was the strongest factor for explaining gambling initiation among adolescents. Previous studies on sexual activity [19] and substance use [20] have found similar results, suggesting that adolescents who are more susceptible to peer pressure may initiate these behaviors as a mechanism to maintain a sense of belonging to a group [42]. Moreover, adolescents are highly prone to making the decision to initiate risky behaviors guided by their emotional states and social influences, without deliberating on the consequences of their behavior [19]. According to our findings, preventative strategies for avoiding or delaying gambling initiation should aim to help adolescents be aware of their friends' influence on their decision to gamble. However, existing gambling educational programs have emphasized the cognitive aspects associated with gambling behavior, while other risk factors such as social influences have not been addressed [43]. Based on previous studies (e.g., [44]), we suggest that effective interventions for preventing gambling initiation should incorporate activities to address social norms around the gambling behavior of others (e.g., assertiveness), and build personal and social skills for helping youths to resist peer pressure. Moreover, these programs should use peer leaders and involve activities targeted toward other referents for adolescents such as parents and teachers [44].

Contrary to our hypothesis and the findings of previous studies on gambling frequency and problem gambling [33], our results indicate that perceived excessive gambling in peers was associated with a lower likelihood of gambling initiation. These inconsistent results could be due to the possibility that the explanatory factors for gambling initiation differ from those for gambling frequency and problem gambling among adolescents who have already gambled [15]. While adolescents who are already gambling tend to socialize with individuals who share the same risky behaviors [45], our findings suggest that perceiving the potential problems derived from gambling may be a protective factor against gambling initiation. Thus, interventions that include information about the potential risks/harms of problem gambling could be effective in preventing gambling initiation.

These findings should be interpreted in light of certain limitations. First, although we selected four high schools from different socio-economic areas, the non-probabilistic sampling procedure used in the current study limits the generalizability of our findings. Second, most social norms were measured with a single item. While such single item measures have been widely used in the health risk behavior literature, the reliability of the measurement of these constructs may be limited. Moreover, we only assessed parental and peer descriptive and injunctive norms and, therefore, we encourage future studies to examine the influence of more distal groups (e.g., "most adolescents," classmates, or other relatives). In addition, although we gathered information on six of the most prevalent adolescent gambling activities assessed in the literature (both online and land-based modes) [38,39], some participants could have initiated gambling through other activities (e.g., through video games). Thus, it is possible that these participants had initiated gambling and were not detected in our study, which could affect our findings. Thus, future studies, should consider including additional gambling activities. Finally, the effects of recall and social desirability bias due to self-report data collection could also impact the validity of these findings.

## Conclusion

The determinants of adolescent gambling initiation have received comparatively little attention in previous research. To our knowledge, this is the first study to longitudinally examine the contribution of parental and peer norms to gambling initiation among adolescents. We found that peers were the most significant social influence in explaining adolescent gambling initiation, with susceptibility to peer pressure being the variable most strongly related to a greater likelihood of gambling initiation. In light of our results, it is suggested that programs aimed at avoiding or delaying the initiation of gambling in adolescents should adopt strategies that help adolescents to resist peer influences. Moreover, the role of perceived peer gambling severity and parental approval of gambling should be addressed.

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