Problematic Internet use and problematic alcohol use from the cognitive–behavioral model: A longitudinal study among adolescents

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HIGHLIGHTS
• Deficient self-regulation predicts an increase of problematic Internet use over time.
• Negative consequences of problematic Internet use predict problematic alcohol use.
• Longitudinal relations were invariant across genders.

ABSTRACT
Problematic Internet use (PIU) and problematic alcohol use are two pervasive problems during adolescence that share similar characteristics and predictors. The first objective of this study was to analyze the temporal and reciprocal relationships among the main components of PIU from the cognitive–behavioral model (preference for online social interaction, mood regulation through the Internet, deficient self-regulation, and negative consequences). The second objective was to examine the temporal and reciprocal relationships between PIU components and problematic alcohol use. We also examined whether these relationships differ between males and females. The sample comprised 801 Spanish adolescents (mean age = 14.52, SD = 1.01) who completed the measures both at Time 1 (T1) and Time 2 (T2) six months apart. We used structural equation modeling to analyze the relationship among the variables. Results showed that deficient self-regulation at T1 predicted an increase in preference for online interactions, mood regulation, and negative consequences of the Internet at T2. In turn, the emergence of negative consequences of PIU at T1 predicted a rise in problematic alcohol use at T2. Longitudinal relationships between different components of PIU and between the components of PIU and problematic alcohol use were invariant across genders. Deficient self-regulation, consisting of diminished self-control over cognition and behaviors related to the Internet, plays a central role in the maintenance of PIU, increasing the preference for online interactions, mood regulation, and negative consequences from Internet use over time. In turn, adolescents who present negative consequences of PIU are vulnerable targets for problematic alcohol use.

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1. Introduction
Problematic Internet use (PIU), also called Internet addiction (Young & de Abreu, 2011) or compulsive use of the Internet (Meerkerk, van den Eijnden, Franken, & Garretsen, 2010), has been recognized as a major public health problem and has received increasing empirical attention in recent years (Davis, 2001; Shapira et al., 2003; Young, 2004). The prevalence of PIU has ranged between 4% and 18% in most studies (Greydanus & Greydanus, 2012; Young, Yue, & Ying, 2011). In addition, PIU has been linked to other behavioral and psychological health problems during adolescence, such as depressive symptoms (Greydanus & Greydanus, 2012), anxiety (Caplan, 2007), cyberbullying (Gámez-Guadix, Orue, Smith, & Calvete, 2013), and alcohol abuse (Ko et al., 2008).

One theoretical model that has received empirical support to explain the etiology, development, and consequences of PIU is the cognitive–behavioral model (Caplan, 2002, 2010; Davis, 2001; Gámez-Guadix, Villa-George, & Calvete, 2012). This model proposes that PIU includes a set of cognitive processes (e.g., obsessive thoughts or cognitive distortions) and dysfunctional behaviors, such as using the Internet to relieve stress or compulsive use, resulting in a range of negative consequences in different areas of an individual’s life (Davis, 2001).
More recent formulations of the cognitive–behavioral model (Caplan, 2010; Gámez-Guadix, Orue, & Calvete, 2013; Gámez-Guadix, Villa-George, & Calvete 2012) propose a series of related components of PIU. These components are a preference for online social relationships, mood regulation through the Internet, deficient self-regulation, and negative consequences. First, a preference for online social interaction stems from the belief that relationships through the Internet are safer, more comfortable, and less threatening than face-to-face interactions (Caplan, 2003; Morahan-Martin & Schumacher, 2003). This belief has been found in cross-sectional studies associated with other important aspects of PIU, such as turning to the Internet to alleviate psychological distress, compulsive Internet use, and the emergence of problems in an individual’s life (Caplan, 2003, 2010). Second, mood regulation refers to the use of the Internet to reduce anxiety, feelings of isolation, or negative feelings. Thus, the Internet acts as a dysfunctional emotional controller (LaRose, Lin, & Eastin, 2003; McKenna, Green, & Gleason, 2002; Spada, Langston, Nikčević, & Moneta, 2008). For example, individuals who use the Internet excessively report using the Internet to alleviate feelings of sadness, anxiety, or loneliness more often than those who use the Internet less frequently (Muñoz-Rivas, Fernández, & Gámez-Guadix, 2010). Third, deficient self-regulation includes both obsessive thoughts and compulsive behaviors related to the Internet (Caplan, 2010; LaRose, Lin & Eastin, 2003). Obsessive thoughts refer to dysfunctional patterns of preoccupations regarding Internet use and the cognitive justification of the obsession with connecting via the Internet (Li, Zhang, Li, & Wang, 2010). Compulsive use refers to the inability to control or regulate Internet connection behavior (Young, 2005). Deficient self-regulation has been identified by some studies as the central aspect of PIU (LaRose, Lin & Eastin, 2003). Finally, PIU has been characterized by the appearance of various negative consequences in the daily life of the individual, such as academic and occupational impairment, academic and/or work absenteeism, interpersonal problems, and withdrawal from real social activities (Junghyun, LaRose, & Wei, 2009; Morahan-Martin, 2007; Muñoz-Rivas, Fernández & Gámez-Guadix, 2010).

According to the cognitive–behavioral model, a preference for online social interaction is related to greater mood regulation using the Internet and more deficient self-regulation, which, in turn, is associated with more negative consequences for the individual (Caplan, 2010; Gámez-Guadix, Villa-George & Calvete, 2012). Previous findings suggest that the relationship among the model components is similar for men and women (Gámez-Guadix, Orue, & Calvete, 2013; Gámez-Guadix, Villa-George & Calvete, 2012). Although empirical evidence has documented a cross-sectional relationship among the different components of PIU, little is known about their relationships over time. To date and to our knowledge, no previous study has analyzed the temporal relationships among different aspects of PIU, which limits knowledge about the model. Therefore, the first objective of this study was to analyze the temporal and reciprocal relations and the gender differences associated with preference for online social interaction, the use of the Internet for mood regulation, deficient self-regulation, and negative consequences.

Numerous researchers have highlighted the similarities between PIU and problematic alcohol use or, alternatively, between Internet addiction and alcohol abuse (Holden, 2001; Ko et al., 2008; Shaffer et al., 2004; Shapira et al., 2003; Sun et al., 2012). Behavioral addictions such as Internet addiction may share the same neurobiological adaptive mechanisms as addictions to substances (Holden, 2001). At the behavioral level, PIU shares with substance addiction manifestations such as craving, tolerance, and withdrawal (Muñoz-Rivas, Fernández & Gámez-Guadix, 2010). Previous results also suggest that PIU and problematic alcohol use have the same psychological vulnerability factors, such as high sensation seeking, positive attitudes toward alcohol, family history of alcoholism, and the presence of deviant peers (Ko et al., 2008). Moreover, Problem Behavior Theory (Jessor, 1991) suggests that engaging in a problem behavior, such as PIU, increases the likelihood of engaging in other problem behaviors, such as problematic alcohol use.

To date, empirical evidence on the association between PIU and problematic alcohol use has been very limited and has mostly emerged from cross-sectional studies. Thus, whereas the studies of Ko et al. (2008) and Kingston, Clarke, Ritchie, & Remington (2011) reported a positive association between PIU and problematic alcohol use, the study by De Leo & Wulfert (2013) found a non-significant relationship between the frequency of alcohol use and PIU. However, the latter study did not directly evaluate the problematic use of alcohol but, rather, examined the frequency of alcohol consumption. In the only longitudinal study conducted to date, Sun et al. (2012) found that higher compulsive Internet use at baseline was related to more binge drinking at 1-year follow-up for females but not for males. Baseline binge drinking was not found to predict Internet use at follow-up. Although the research by Sun et al. (2012) provided interesting preliminary data, the authors explicitly recognize the inherent methodological weakness of their study, which used an unvalidated subscale for “diminished impulse control”, which is only a partial aspect of PIU, to measure compulsive Internet use, which may have biased the results (Sun et al., 2012). Therefore, more research is needed to elucidate the temporal relationship between different components of PIU and problematic alcohol use. Thus, the second objective of this study was to analyze the temporal and bidirectional relationships between PIU and problematic alcohol use. Because some differences have been documented between adolescent males and females for PIU and problematic alcohol use (Schulte, Ramo, & Brown, 2009; Shaw & Black, 2008), we also examined whether the relationship between these variables differs by gender.

2. Method

At the beginning of the study, participants were 976 adolescents between 13 and 18 years of age. All the participants were students recruited from 49 classrooms located in 12 secondary schools in Bizkaia, Spain. The sample was first stratified by school type: private and public schools. The classrooms were then selected randomly by means of a cluster sampling procedure stratified by school type. Of the 976 participants, 801 (59.7% females, 39.8% males, and 0.5% who did not indicate gender; mean age = 14.92, SD = 1.01) completed the measures at the two waves of the study (attrition rate = 17.93%). The reasons given for almost the entire attrition rate was absence from school because of illness. A series of t-tests were conducted to examine differences in all study variables at T1 among the 801 adolescents who completed the two waves and those who failed to complete the study. None of these differences was significant.

Most of the participants were Spanish (91.5%), and the remaining participants were South American (6.1%), Eastern European (0.3%), African (0.4%), Asian (0.5%), or other ethnicities (1.2%). Socioeconomic levels were determined by applying the criteria recommended by the Spanish Society of Epidemiology and Family and Community Medicine (Domingo-Salvany, Regidor, Alonso, & Alvarez-Dardet, 2000) based on information about parental occupation and income. Using these criteria, the sample can be described as 11.2% low, 16.8% medium-low, 31.9% medium, 30.3% medium-high, and 9.8% high income.

2.1. Measures

2.1.1. Problematic Internet use

We use the Generalized Problematic Internet Use Scale 2 (GPIUS2; Caplan, 2010), which assesses different components of PIU according to a cognitive–behavioral model. The GPIUS2 consists of 15 items grouped into four distinct subscales: a) preference for online social interactions (3 items; e.g., “I prefer online social interaction over face-to-face communication”), b) the regulation of mood through Internet use (3 items; e.g., “I have used the Internet to talk with others when I was feeling isolated”), c) deficient self-regulation (6 items; e.g., “I have
difficulty controlling the amount of time I spend online”), and d) negative consequences (3 items; e.g., “my Internet use has made it difficult for me to manage my life”). The response scale used was a 6-point Likert format ranging from 1 (strongly disagree) to 6 (strongly agree). It has been noted that PIU is a continuous construct that should be described on a continuum ranging from users without symptoms to moderate users with a few problematic behaviors to excessive users with severe symptoms (e.g., Huang, Wang, Qian, Zhong, & Tao, 2007). Therefore, in these analyses, we used the total sum of the items rather than one cutoff-point, which might not be adequate for this study with a non-clinical sample of adolescents. This scale has shown construct and convergent validity in Spanish-speaking samples (Gámez-Guadix, Orue, & Calvete, 2013; Gámez-Guadix, Orue, Smith, & Calvete, 2013; Gámez-Guadix, Villa-George & Calvete, 2012), supporting a multi-dimensional structure composed of the four factors listed above. In this sample, confirmatory factor analysis supported the model made of four factors (e.g., CFI = .93, NNFI = .91, RMSEA = .066 [CI: .06–.72]), with factor loadings of the items on their respective factor ranging from .69 to .87, all ps < .001. The internal consistency (Cronbach’s alpha) of the subscales was good, ranging from .78 (negative consequences) to .90 (deficient self-regulation).

2.1.2. Problematic alcohol use

In the absence of well-validated scales among Spanish adolescents to measure problematic alcohol use, we designed an instrument to assess this variable using previous scales, such as the Rutgers Alcohol Problem Index (RAPI; Earleywine, Labrie, & Pedersen, 2008). The instrument included 10 items and asked adolescents how often they had experienced a number of situations when they were drinking alcohol or as a result of drinking alcohol. Examples of these items include “Need to drink more alcohol to achieve the same effect as before.” The full instrument is included in Appendix A. The response scale items were never, 1–2 times, 3–5 times, and more than 5 times. As with GPIUS2, this instrument is not intended to diagnose problematic alcohol use, but rather to appraise the variability of this construct in a non-clinical sample of adolescents. To examine the factorial validity of the instrument, we conducted an exploratory factor analysis using the method of principal axes. The results showed a factor structure composed of a single factor (scree plot inspection, eigenvalues > 1) that explained 41% of variance and in which all items had factor loadings greater than .51. The internal consistency (Cronbach’s alpha) in this sample was .82.

2.2. Procedure

The participants completed all measures at two measurement occasions spaced 6 months apart. Responses were anonymous to promote honesty, and participation was voluntary. All of the adolescents consented to participate in the study. Parents were notified and given the option of refusing to allow their child’s participation in the two waves of the study. None of the parents refused to allow their child to participate. The adolescents completed the questionnaires in their classrooms. To pair questionnaires T1 and T2, a code known only by the participant was used. The questionnaires took 30–40 min to complete. The Ethics Committee of the University of Deusto approved this study. To analyze the data, we calculated descriptive statistics and correlations using IBM SPSS Statistics 20 (SPSS, 2011) program. The study hypotheses were evaluated by structural equation modeling (SEM) with the EQS 6 software (Bentler, 2005). Goodness of fit was assessed by the non-normed fit index (NNFI), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). In general, NNFI and CFI values of .90 or higher indicate adequate fit, and RMSEA and SRMR values of less than .06 reflect good fit (Byrne, 2006). Three indicators were used for each latent variable. In all, the model used 30 indicators for 10 latent variables. Due to a violation of the normality assumption that was observed in the data (normalized Mardia’s coefficient = 141.21), we employed the robust maximum likelihood (ML) estimation method, which includes the Satorra-Bentler-scaled χ² index (S–B χ²) and other corrected statistics.

3. Results

Table 1 presents the descriptive statistics (mean and SD) and the Pearson correlations for the variables in this study. Most of the correlations were significant and in the expected directions, with the highest correlations between the same variable at T1 and T2.

The SEM models were tested via maximum likelihood. The error terms of the latent variables at T1 and T2 were conceptualized as correlated with each other due to the assumption that factors that contribute to the measurement error of any specific variable would be consistent across time points. First, a preliminary confirmatory factor analysis indicated the appropriateness of measuring the latent variables with the indicators and confirmed that the factor loadings were significantly different from zero. Second, we estimated a full cross-lagged model among all the variables of T1 and T2. Thus, this model included paths from the preference for online social interaction, the use of the Internet for mood regulation, deficient self-regulation, negative consequences, and problematic alcohol use at T1 to the same variables measured at T2. The model also included the autoregressive path from each variable in T1 to the same variable at T2. This approach allowed for the examination of the extent to which T1 predictors accounted for a change in a T2 variable over time.

The initially estimated model showed that some paths were not statistically significant. For example, the paths from a T1 preference for online social interaction to T2 deficient self-regulation or negative consequences were not statistically significant. These paths were removed from the model, which was re-estimated with only the significant paths (see Fig. 1). The fit indexes for the estimated final model were satisfactory: χ²(371, N = 801) = 760.50, NNFI = .95, CFI = .96, RMSEA = .036 (90% CI: .033, .04), and SRMR = .048. Fig. 1 shows the standardized parameters of the final model. The autoregressive paths for preference for online social interaction, the use of the Internet for mood regulation, deficient self-regulation, negative consequences, and problematic alcohol use between T1 and T2 were all highly correlated and significant. Regarding associations between the components of PIU, although all PIU components showed a significant relationship between them at the cross-sectional level, longitudinally, only T1 deficient self-regulation was associated with a significantly increased T2 preference for online social interaction, the use of the Internet for mood regulation, and negative consequences.

Regarding the relationship between problematic alcohol use and PIU components, we found that more negative consequences from the Internet at T1 increased the probability of more problematic alcohol use at T2. At the cross-sectional level, problematic alcohol use showed a statistically significant relationship with all components of PIU except for the preference for online social interaction (Fig. 1).

Finally, we investigated whether the relationship between the variables in the model differed depending on the sex of the participants. To test this possibility, we conducted a multi-group analysis following the steps outlined by Byrne (2006). Because we used robust indexes (i.e., S–B χ²), corrections for computing the difference between various models (ΔS–B χ²) suggested by Satorra & Bentler (2001) were performed. We found, first, that the model fit was adequate for both sexes separately (females: S–B χ²(371, n = 478) = 590.63, p < .001, NNFI = .95, CFI = .96, RMSR = .053, RMSEA = .035 (90% CI: .04–.04); males: S–B χ²(371, n = 319) = 553.03, p < .001, NNFI = .94, CFI = .95, RMSR = .064, RMSEA = .037 (90% CI: .03–.044)). Second, we estimated a model in which all factor loadings and the structural relationships were freely estimated for each sex (unrestricted model). Then, a new model in which all factor loadings of the indicators were set as equal between males and females was estimated.
This imposition significantly increased the $\chi^2$ [$\Delta SBY\chi^2 (20) = 34.99, p < .05$] which reflects differences between the sexes. We examined each path separately to identify the differences. Only the factor loadings from parcel 1 over the problematic alcohol use factor were higher for females than for males. Once this parameter was freely estimated in each group, the results indicated no significant difference in the remaining factor loadings between males and females: $\Delta SBY\chi^2 (19) = 27.22, ns$. Next, we estimated a new model in which the structural relationships between the latent variables were fixed as equal in the two groups. This imposition significantly increased the $\chi^2$: $\Delta SBY\chi^2 (37) = 68.49, p < .01$. The analysis revealed three differences between variables at the cross-sectional level (at Time 1): the paths between T1 preference for online social interaction and T1 deficient self-regulation and negative consequences and the path between T1 deficient self-regulation and T1 negative consequences, all of which were higher for females than for males. After removing these constraints, the unconstrained and the constrained models for the gender groups were statistically equivalent [$\Delta SBY\chi^2 (34) = 44.29, ns$] suggesting equivalence between males and females in the longitudinal relations of the model. The results therefore supported the invariance of the general longitudinal relationships across gender.
4. Discussion

This is the first study to evaluate the predictive associations between different components of PIU. The results show that only the component of deficient self-regulation predicts an increase of the other components over time. This result highlights the importance of this component, which consists of diminished self-control over cognition and behaviors in the maintenance of PIU. This finding is consistent with previous studies that have indicated the central role of deficient self-regulation in PIU and Internet addiction (Caplan, 2010; LaRose, Lin & Eastin, 2003). In fact, based on the socio-cognitive theory of Bandura (1991), Rose and colleagues (2003) suggest that Internet addiction “can be redefined as deficient self-regulation” (p. 243), understood as a deficit in self-conscious processes that allow the individual to monitor, judge, and adjust his or her own behavior (LaRose, 2011; LaRose, Lin & Eastin, 2003). Consistent with this proposal, the results of this study suggest that deficient self-regulation is the key component in maintaining PIU over time.

The results do not support some of the hypotheses of the cognitive-behavioral model proposed by Caplan, which had previously been analyzed in cross-sectional studies (Caplan, 2010; Gámez-Guadix, Villa-George & Calvete, 2012). According to this model, the preference for online social interaction and mood regulation through the Internet precedes increased deficient self-regulation. One possible explanation for these results is that the mechanism by which PIU originates and consolidates might be different from the processes that explain its maintenance. In the early stages of the problem, a predisposition to maintaining online relationships and to using the Internet to relieve stress may increase the likelihood of deficient self-regulation. However, once the deficient self-regulation has become a problem, it may play a more central role, increasing the other components over time. Future studies should further address these issues to shed light on the complex interaction involving the different components of PIU at different stages of its development. Finally, consistent with the cognitive-behavioral model, deficient self-regulation results in negative consequences in different areas of an individual’s life. Thus, decreased self-control in the use of Internet seems to result in difficulties in interpersonal relationships, health habits, or performance in school (Muñoz-Rivas, Fernández & Gámez-Guadix, 2010).

This is the first study to comprehensively examine the longitudinal relationship between the components of PIU and problematic alcohol use. Specifically, the occurrence of negative consequences of PIU predicted an increase in problematic alcohol use. Thus, when the adolescent experiences personal, social, academic, or work problems as a consequence of his or her dysfunctional use of the Internet, the problematic use of alcohol increases. This result is consistent with the results obtained in the only previous longitudinal study that examined prospective associations between PIU and alcohol problematic use (Shaffer et al., 2004). As noted above, the study by Sun et al. (2012) was limited by an incomplete measurement of PIU. Therefore, the present study contributes to better understanding the specific mechanisms through which PIU leads to the abusive consumption of alcohol among adolescents.

This relationship between PIU and problematic alcohol use may indicate either a common etiology or a causal relation between these psychological and behavioral health problems. On the one hand, both PIU and problematic alcohol use may share similar psychosocial risk factors, such as personality factors and family characteristics (Ko et al., 2008). These factors may increase the likelihood that PIU and problematic alcohol use will appear together. On the other hand, it is possible that adolescents who experience the consequences of PIU turn to abusing alcohol to escape or evade distress arising from the consequences of PIU. This pattern would make it more likely that adolescents with PIU would also develop more problematic alcohol use. These explanations should not obscure the fact that PIU seems to precede in time and increase the likelihood of problematic alcohol use among adolescents.

It is important to note also that autoregressive paths were high (between .51 and .78), indicating high stability of PIU and problematic alcohol use. This finding implies the need to develop interventions for adolescents who are involved in these problems to avoid continuity and worsening over time.

Finally, this study examined gender differences in the model. Although various PIU components tended to be more closely associated with females than males at the cross-sectional level, the longitudinal model was invariant across genders. These results are consistent with those of previous studies, which found that the relationship between the components of PIU is similar between men and women (Gámez-Guadix, Orue, & Calvete, 2013; Gámez-Guadix, Villa-George, & Calvete 2012; Li, Zhang, Li, Zhen & Wang, 2010). Given that the evidence regarding potential sex differences in the temporal relations of the components of PIU is still very scarce, future studies should continue to investigate this issue.

In conclusion, this study contributes to better understanding the relationship among the components of PIU and problematic alcohol use. In contrast to the majority of previous studies, which were cross-sectional, this study expands the previous empirical evidence by using a prospective approach and by analyzing reciprocal relationships between variables. It should be noted that this study was conducted in Spain, and cross-cultural differences may have affected the results. The findings of this research should be replicated in other cultural contexts. However, despite the potential cultural differences between Spanish and English-speaking samples, the cognitive-behavioral model of PIU has been consistently supported and replicated in Spanish-speaking samples (Gámez-Guadix, Orue, & Calvete, 2013; Gámez-Guadix, Villa-George, & Calvete 2012), and we appear to be dealing with the same problem. In addition, Spanish adolescents present alcohol consumption rates similar to those of other European countries (Currie, 2012), and levels of Internet access are in the average range of the levels obtained in Europe (Eurostat, 2009).

The findings have important implications for interventions. The central role played by deficient self-regulation suggests that interventions should focus primarily on dealing with cognitive preoccupation and compulsive Internet use. Thus, according to the results of this study and the principles of cognitive-behavioral therapy, techniques such as the identification and cognitive restructuring of dysfunctional thoughts could be useful for the treatment of PIU. At the behavioral level, the application of techniques such as stimulus control, progressive exposure, and other complementary techniques (e.g., planning offline activities, problem-solving training) could be an important contribution to preventing the consolidation of PIU over time. In addition, given that PIU predicts problematic alcohol use, mental health professionals should pay special attention to possible alcohol abuse in the treatment of PIU. It may be also important to provide counseling services for PIU similar to those that exist for other addictions given that PIU seems to be a growing health problem during adolescence.

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Contributors
M. Gámez-Guadix, E. Calvete, and I. Orue designed the study and wrote the protocol. M. Gámez-Guadix conducted the statistical analysis and wrote the first draft of the Introduction and Results; I. Orue wrote the first draft of the Method, E. Calvete wrote the first draft of the Discussion. C. Las Hayas provided substantial feedback on the manuscript. All authors reviewed, contributed to and have approved the final manuscript.

Conflict of interest
Authors declare that they have no conflicts of interest.
Appendix A. Problematic alcohol use questionnaire

When people drink alcohol, different things can happen, such as those outlined below. During the last twelve months, how many times have the following occurred when you were drinking alcohol or as a result of drinking alcohol?

<table>
<thead>
<tr>
<th>1. Gotten into fights or vandalism</th>
<th>Never</th>
<th>1–2 times</th>
<th>3–5 times</th>
<th>More than 5 times</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Caused embarrassment or shame to others</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>3. Failed to meet your obligations</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>4. Needed to drink more to obtain the same effect as before</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>5. Tried to control your drinking (try to drink only at certain times of day or in specific places, i.e., change your drinking behavior)</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>6. Experienced withdrawal symptoms, such as feeling physically bad as a result of having stopped drinking or drinking less than usual</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>7. Tried to reduce your alcohol consumption</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>8. Found yourself somewhere and not remember where you are</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>9. Had a fight, an argument, or felt angry with a friend or friends</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
<tr>
<td>10. Had someone close (a friend, family member, or acquaintance) tell you to stop drinking or that you should drink less</td>
<td>Never</td>
<td>1–2 times</td>
<td>3–5 times</td>
<td>More than 5 times</td>
</tr>
</tbody>
</table>

References


