

# **Implicit Associations in Poker Players: An Explorative Study**

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## **Abstract:**

**English:** Poker is commonly allocated in the DSM category for gambling addiction. However, taking a deeper look at poker playing reveals significant differences with respect to other games of chance, in that a skill component is present in the game. This involvement of skill has so far been completely neglected in the operationalization and assessment of pathological forms of poker. In order to gain a more comprehensive understanding of the phenomenon, a new developed poker assessment scale and an implicit association test have been compared to a conventionally used gambling addiction scale. To this end, 15 regular poker players have been compared to 15 non-poker players in a prospective cohort-study, with implicit and explicit attitudes being measured at the first measurement point and the poker- as well as the gambling addiction scale being inquired on both points of measurement. The obtained results indicate that poker players hold more positive implicit associations towards poker than non-poker players do. Furthermore, implicit associations as well as the scores on the poker assessment scale turned out to be significant predictors of the amount of time spent on playing poker 18 days after the first point of measurement. The poker assessment scale was even able to add significant explaining value to the conventionally used gambling addiction scale in the variance of the amount of time spent on playing poker. Also, preliminary results suggest that implicit associations are able to add explaining value to a conventionally administered gambling addiction scale with respect to the variance in the amount of time spend on playing poker. The comparison between implicit and explicit attitudes showed that explicit cognitions were able to explain a profound amount of the variance in both the gambling addiction- and poker related assessment scale. In both cases implicit attitudes were incapable of accounting for an added proportion of explained variability. Theoretical, as well as, practical implications of the findings are discussed. Furthermore, limitations of the present study are highlighted and recommendations for possible follow-up research are given.

**Nederlands:** Poker wordt gewoonlijk binnen de DSM categorie van gokverslaving geplaatst. Desondanks wordt bij een zorgvuldige beschouwing duidelijk dat poker door de betrokkenheid van een vaardigheidscomponent significant van andere kansspelen verschilt. Deze skill-component is tot op heden compleet genegeerd in de operationalisatie en assessment van pathologische vormen van poker. Om een meer coherent begrip van het fenomeen te verkrijgen, worden een nieuw ontworpen poker assessment schaal en een implicit association test met een conventioneel gebruikt gokverslaving assessment schaal vergeleken. Hiervoor werden 15 regelmatige poker spelers in een prospectief cohort studie met 15 niet poker spelers vergeleken. Impliciet- en expliciet attitudes t.a.v. poker werden bij het eerst meetmoment in kaart gebracht, terwijl een poker- en een gokverslaving assessment schaal bij beide metingen werden afgenomen. De resultaten van de studie tonen aan dat poker spelers positiever impliciet associaties m.b.t. poker bezitten dan niet poker spelers. Bovendien, zijn zowel de impliciete associaties als de scores op de poker assessment schaal significante predictoren voor de hoeveelheid tijd die een individu heeft besteed aan poken 18 dagen na het eerste meetmoment. De poker assessment schaal was zelfs in staat om toegevoegde verklarende waarde aan de conventioneel gebruikte gokverslaving schaal toe te voegen als het om de variabiliteit in de hoeveelheid tijd van volgend poken gaat. Ook suggereren de preliminaire resultaten dat impliciete associaties in staat zijn om verklarende waarde aan een conventioneel gebruikt toe te voegen als het om de variantie in de hoeveelheid tijd die een individu aan poken besteed gaat. Een vergelijk tussen expliciete en impliciete attitudes laat zien dat expliciete attitudes capabel zijn om een groot deel van de variantie van zowel de gokverslaving- als ook poker gerelateerde assessment schaal te verklaren. Voor beide assessment schalen waren impliciete attitudes niet in staat om een toegevoegde proportie van de variabiliteit te verklaren. Zowel theoretische als praktische implicaties van de uitkomsten van de tegenwoordige studie worden bediscussieerd. Bovendien, worden de beperkingen van de studie expliciet duidelijk gemaakt en worden aanbevelingen voor follow-up onderzoek gegeven.

## **Introduction:**

The popularity of poker has dramatically increased in the last decennia within the western world (Wood, Griffiths, & Parke, 2007). Whilst poker-playing was entirely limited to real-life experiences twenty years ago, nowadays it is transnational and always accessible via the Internet. Despite the fact that poker is a mere leisure activity for a vast number of people, another not to be neglected quantity of players suffers from the potentially addictive consequences of the game (Tryggvesson, 2009). Poker-playing forms one component of gambling addiction, which has for a long time been regarded as an obsessive-compulsive disorder within the DSM-4 (American Psychiatric Association, 2000). Most recently, however, with the introduction of the DSM-5, the American Psychiatric Association (2013) reacted on a growing number of empirical evidence that suggested a tremendous overlap between pathological gambling and addictions by relocating pathological gambling into the category of addictions and related disorders (Prakash, Avasthi, & Benegal, 2012; Ashley, & Boelkhe, 2012; Potenza, 2006). However, comparing poker to other games of chance brings some significant differences forward. For instance, it becomes obvious that poker is influenced by chance as well as by the capability of the respective player. Despite an on-going debate within the scientific community about the relative proportion of these two components (Fiedler, & Rock, 2009; Meyer, von Meduna, Brosowski, & Hayer, 2012), it is not deniable that capability plays a considerable role in poker. Whereas in every other form of gambling, e.g. roulette and blackjack, each monetary investment has in the long-run a negative expected value, this has not necessarily to be the case for poker. For some highly skilled professionals the opposite is true; they, due to their profound strategic and analytical abilities, have an advantage over other players, which implicates a positive expected value in the long-term. But beside these positive outcomes for some people, the mixture of chance and aptitude can have a devastating impact on others. For instance, it might amplify the well-known phenomenon of the illusion of control, in which people overestimate their ability to control certain external events. This tendency plays a decisive role in gambling addictions (Dixon, 2012; Hong, & Chiu, 1988) and might become apparent through an overestimation of the aptitude component within poker and corollary an unrealistic appraisal of the ability to exert control over the outcomes of the game.

Also, negative experiences might, through an attributional process, be ascribed to external and unstable factors such as the luck component of the game, whereas positive outcomes could rather be attributed to internal and stable factors (Kelley, 1967). These tendencies could possibly perpetuate an irrational perseverance to playing poker.

In addition, the ability-ingredient within the game impedes the operationalization of pathological forms of poker-playing. It becomes obvious that a mere “the more time spent on pokering the more pathological” approach has certain shortcomings. On the one hand a professional poker player might spend an average of eight hours a day on playing without being addicted, since he perceives gaming as his job. On the other hand being a professional poker player and being addicted are no mutual exclusive entities. In other words they can occur simultaneously, so that a professional poker player might be addicted, even though his capability protects him or her of the financial miseries that are associated with gambling addiction.

Former mentioned concerns logically raise the question of where to draw the line between inconspicuous and pathological forms of poker? Unfortunately, the current body of knowledge has little to offer regarding a satisfactory solution to this intricacy. That is why this research was concerned with developing and scrutinizing instruments of measurement that capture the unique aspects of poker playing. In the course of this study a poker-related assessment scale has been devised, which is inspired by the DSM-criteria for gambling addiction, since some of these might apply for poker-related behaviour as well. Furthermore, the scale has been supplemented with several items aimed at investigating beliefs, habits, and behaviours that are assumed to be indicative of the pathological tendencies in poker.

Implicit associations are another potentially influential determinant of poker related behaviour. Poker players might exhibit an implicit cognitive bias towards poker. Therefore this study was dedicated to measure implicit attitudes regarding poker. Such an approach is in sharp contrast to approaches that concentrate solely on investigating the explicit determinants of addictive behaviour, and highlights the importance of impulsive alongside reflexive processes in human behaviour. This is in line with recent propositions of several dual-process models, which all accentuate the juxtaposition of a reflective and an impulsive system (Smith, & De Coster, 2000). More recently, Strack, and Deutsch (2004) suggested a dual-system model, which states that impulsive and reflective processing is not mutually exclusive but can

operate in parallel. In this Reflective-Impulsive Model (RIM) the two systems are distinguished by the following characteristics: Reflective processing demands cognitive resources and is a rule-based, more deliberate component of the model, whilst the impulsive system is relatively independent from the amount of resources available and is functioning on an associative level in a quick, mostly unconscious manner. Since this impulsive system has already been shown to be involved in the generation and maintenance of substance abuse and addiction (Wiers, & Stacy, 2006), as well as in gambling addiction (Brevers et al., 2012; Yi, & Kanetkar, 2010), inquiring whether or not this involvement holds up for poker too seems to be an auspicious path of investigation. For that purpose a bipolar Implicit Association Test (IAT) has been created, in order to measure implicit attitudes regarding poker. It is important to note that the present study is the first to investigate implicit attitudes in poker players and that such an approach of assessment is thought to overcome some of the intrinsic difficulties that explicit instruments of measurement, such as self-reports, are facing (De Houwer, Crombez, Koster, & De Beul, 2004). For instance, implicit measures are less susceptible to self-presentation or deception, when it comes to the investigation of socially sensitive topics, such as addiction (Brevers et al., 2012).

Following logically from the previous mentioned involvement of implicit attitudes in a multitude of detrimental behaviours, five hypotheses were formulated. Firstly, it is hypothesized that poker players hold more positive implicit associations towards poker than non-poker-players.

Furthermore, it is assumed that implicit attitudes as well as the developed poker assessment scale have predictive value for the amount of time that an individual spends on playing poker.

Additionally, it will be scrutinized if the IAT-scores and the poker-related assessment scale add predictive value to conventionally utilized explicit measures for gambling addiction regarding the variance in the amount of time spend on playing poker.

In the fourth hypotheses it is expected that implicit associations can add explaining value to explicit cognitions regarding the variance in severity on the poker-related assessment scale.

Finally, it is hypothesized that implicit attitudes add predictive value to explicit ones regarding the variance in a conventionally used gambling addiction screening scale.

If the present study confirms some of the prior assumptions, this could improve not only the identification and assessment possibilities of addicted poker players, but also help to enhance the treatment of those people who express request for help due to poker-related problems.

## **Methods:**

### **Participants and recruitment:**

Participants were 15 male regular poker players and 15 male individuals who never played poker before, or at least only tried it several times. Both groups have been recruited via purposive sampling. This purposive sampling has taken place by assessing the frequency of poker-playing behaviour as the pivotal inclusion criterion for the study. The non-poker-players, composing the control group, have been matched to the group of poker-players regarding demographic variables such as gender and age. The distribution of age ranged from 23 to 31 in the group of poker-players and from 19-31 years in the control group. There has not been a significant difference between the two of them,  $t(28)=.758$ ,  $p=.455$ . For a more detailed description of the difference in mean age, see Table 1.

Table 1  
*Mean age of participants*

	Condition		Total
	Poker Players	Control	
Average Age	25.2	24.4	24.8

Both groups were provided with general information about the study. Furthermore, they were informed about their right to withdraw at any given time and were ensured that their data will be handled in accordance with privacy regulations and the ethical norm of confidentiality.

## **Materials and Measures:**

First of all a couple of questions aimed at providing some background information about individual poker behaviour have been administered to all participants. Apart from inquiring demographic variables such as age, participants had to indicate whether they play poker regularly or not. Depending on the answer to the former question, subjects were required to express a couple of more detailed information about their respective poker behaviour. For instance, the period of time since they began to play poker and the weekly average amount of time they have spent pokering ever since. Furthermore, a number of questions aimed to gather information about individual playing habits. Amongst others, the ratio between live and online gaming and the proportion between engaging in Cash-Games, Multi Table Tournaments (MTT's) and Sit and Go's (SNG's) have been quantified. Also, the Return Of Investment (ROI) at MTT's and SNG's, and the average hourly earnings at Cash Games have been assessed in order to become an estimate of the ability of the respective player. In addition, each participant was required to indicate the most profound reasons for engaging in poker-activities. Finally, the sum of the lifetime earnings of each player, the sum of his current bankroll, which is the amount of money that is budgeted solely for poker activities, and whether or not the individual practices bankroll-management, have been obtained. The application of bankroll-management is a strategy, which is aimed at minimizing the consequences of the luck component within poker, by increasing the ratio between the bankroll and the average buy-in.

### ***Social-Cognitive Determinants of Poker-Playing (SCDPP):***

This scale was created to analyse several social-cognitive variables with respect to poker. A set of items measured the participant's perceived self-efficacy concerning poker behaviour. Also, the general attitude regarding poker behaviour as well as the attitude with respect to pathological forms of poker-behaviour was the object of investigation within this scale. Another set of items set out to operationalize both, the social norm and the pathological form of the social norm. Finally, the outcome expectancies before beginning to play poker have been measured. All items were expressed either in statements, on which the participants had to indicate to what extent they apply by filling in a 4-point Likert-scale, or by semantic differentials, on



which participants had to specify their position on a bipolar continuum. All items that have been inquired by means of a Likert-scale format have been displayed as an ordinal variable within SPSS, with a score of 0 equating the least pathological range, and a score of 3 being indicative of the most pathological range. Previously mentioned position on the semantic differential-items was determined by measuring the percental position that the participant indicated on the bipolar continuum. In order to guarantee that semantic differential items are able to exert the same influence on the overall score of the respective subscale, e.g. the pathological component of the attitude, the obtained percentages have been multiplied by the factor 3. By applying this multiplication the distribution of valid scores ranged from 0-3, as in the Likert-scale items. A plurality of items out of the social-cognitive scale are inspired by a study of Marsman (2008) on the relationship between poker playing and pathological gambling.

***Pathological Poker-Playing Scale (PPPS):***

This, for the purpose of this study, invented scale aims to give an indication of the severity of the poker-related behaviour and is split up into two components. One being, a rather short-term indication of the pathological aspect of poker behaviours that fluctuates over time, and the other being, a more stable and long-lasting expression of the detrimental component in poker. The short-term component will in the following be referred to as PPPS-ST, while the more stable component will be referred to as PPPS-LT.

First and foremost, within the short-term indication component the quantity of time dealt with poker within the last week has been investigated by means of several items. Since the mere amount of time spend on playing poker alone is no sufficient conceptualization of the pathological element in poker, a plurality of other items expressive of the pathological side have been measured in this component of the PPPS. For instance, individuals reported whether or not they tilted within the last seven days. Tilt is a term commonly used by poker players to indicate a loss of self-control, most often triggered by an external event, such as loosing one or several pots, in which one has been in a statistical advantage. As a consequence, the ability to poker in a promising manner suffers. Tilting often goes hand in hand with playing on limits that are incompatible with proper bankroll-management and the player's actual intent. Therefore, another item investigated whether or not adherence to the intended

bankroll-management was successful within the last week. Furthermore, the main reasons for playing poker in the preceding week were matter of inquiry.

The more stable component of the PPPS is composed of 13 propositions upon which the participants have to state the degree of appropriateness on a 4-point Likert-scale. These items are partially derived from the DSM- 4 criteria for pathological gambling (American Psychiatric Association, 2000) and supplemented by several items that concentrate on scrutinizing the unique aspects of pathological poker-related behaviour. Due to the absence of validated poker-behaviour screening methods, these supplementary items have been ad hoc developed for the present study. Especially this scale will be scrutinized with respect to a possible added value that might derive from its usage in identifying pathological poker players.

#### ***Kurzfragebogen zum Glücksspielverhalten (KFG):***

This short-questionnaire is a 20 item containing measuring instrument for gambling behaviour (Petry, out of Prempfer, Petry, Peters, Baulig, Sobottka, Fischer, 2013). 20 sentences related to gambling problems are presented and the test subject defines the validity of the respective proposition on a 4-point Likert-scale. By means of summing up the raw scores, a test score can be obtained. These test-scores are assumed to build a Bell-curve throughout the whole population of gamblers. The scale has a clear cut-off point that reflects the transition from inconspicuous gambling to an initiating gambling problem. This cut-off point is set at 16 out of 60 possible points on the scale. Especially, the comparison between the Kurzfragebogen zum Glücksspielverhalten (KFG) and the PPPS, which tries to capture problematic aspects unique to poker playing behaviour, is a topic of major importance. Furthermore, the relationship between both, the KFG and PPPS-score, and the actual time spend on playing poker is a promising path for investigation.

#### ***The Implicit Association Test (IAT):***

The Implicit Association Test (IAT) intends to measure the inner strength of associations between certain concepts. This is achieved by means of a speeded classification test, in which participants have to assign stimuli, that successively appear on a computer screen, into two target- and two attribute categories, i.e. poker and household, and positive and negative, respectively. The classification took place by utilising only two response keys on the keyboard (one on the left and one on the

right). In the present study the test consisted of a total of five blocks that each participant had to complete. In the first block participants were instructed to categorize poker stimuli to the left- and household stimuli to the right side. In the proceeding block positive cues had to be responded to by pressing the left key and negative stimuli by pushing the right key. Blocks 1 and 2, together with block four, in which household stimuli had to be categorized to the left and poker cues to the right, compose the three test blocks that are neglected in the later IAT-analysis. Blocks three and five, however, generate the crucial data that is required for calculating the IAT-score of the respective person. In the third block, the response pattern of the former two blocks is combined, i.e. poker as well as positive stimuli have to be reacted on by pressing the left key, while participants had to categorize household and negative cues to the right. Whereas the response pattern for the attribute categories remained stable across blocks 3 and 5, the required response for the target categories became reversed, i.e., subjects had to press the left key if an household cue was presented and the right key if a poker stimuli appeared. It is the assumption that affective priming would exert a more profound influence on people holding more positive implicit associations towards poker. These people are expected to react faster if the same reaction is demanded for poker and positive stimuli (block 3), than when combining poker and negative items on the same response key (block 5). Easily speaking, the IAT-score is computed by subtracting the mean reaction time (RT) from the third block from that in the fifth block. A score exceeding zero, can thus be seen as a manifestation of a positive association between poker-related cues and positive attributes, while a score beneath zero is thought to represent more negative implicit associations with respect to poker. In an attempt to out-rule possible alternative explanations for any implicit bias observed, the different categories have been matched for factors, such as proportion of Anglicism, word-length, and complexity.

The IAT-software deployed in this study derives from Meade (2009) and uses an improved scoring algorithm (Greenwald, Nosek, & Banaji, 2003). This improved scoring algorithm eliminates trials with RT's larger than 10ms, replaces RT's for items that were initially answered as incorrect with the mean of the respective block plus another 600ms, and computes a pooled standard deviation in order to standardize the respective scores.

**Procedure:**

Proceeding the initial selection phase, aimed at identifying people meeting prior mentioned inclusion criteria, all participants were provided with an introductory dialogue in which the general procedure of the study was explained and potential questions were answered. Also participants were again reminded that all responses would be handled with confidentiality and responsibility. After giving their informed consent to participate in the study, all subjects ran through a prospective cohort study with 18 days elapsing between the first and the second point of measurement. If there arose any questions or confusion regarding the completion a researcher was during all testing present in an adjacent room to attend to the participant and provide assistance if necessary. The testing procedure was initiated by a completion of a questionnaire. This questionnaire was composed of former specified measuring instruments, i.e. the GPRAS, SCDPP, PPPS, and KFG. The order of the enumeration mirrors the fill-out-sequence during testing.

Following, the multitude of questionnaires, the IAT has been administered. Participants were seated at a desk in front of a computer and were given the opportunity to allocate a chair equipped with a vertical adjustment slide in a position, which most suited their individual preferences, provided maximum comfort and an unobstructed operability. When the participants indicated their readiness the researcher initiated the IAT-software and gave them the necessary information to complete the task (e.g. pressing the E-key for a sinistral categorization and using the I-key for a dexter categorization of a presented stimuli). The successful termination of the IAT marks the end of the first point of measurement.

Between the two points of measurement 18 days have elapsed. At measurement point two, participants gave a detailed account of their poker-related behaviour within the last week (PPPS-ST), as well as, a more stable account of their poker related behaviour (PPPS-LT). Subsequently, subjects also submitted the KFG anew.

Thereafter, all participants received information about the objectives of the study and especially about the purpose of the IAT. Furthermore, all subjects who wished to be informed about the results of the investigations were invited to leave contact details, in order to facilitate further communication.

## **Analysis:**

In this study there are three primary outcome measures. Firstly, the IAT-score, secondly the total score on the KFG, and thirdly the two components of the PPPS. In the following section the performed steps of analysis for these three measures will be declared in detail. Moreover, all activities and measures taking an aim at studying the hypotheses of the present study will be documented.

The outcome of the IAT has conventionally been determined by subtracting the mean latencies of blocks pairing the target category (in this study poker) with positive attribute words from the mean latency from blocks in which the target category has been paired with negative attributes. However, as already mentioned, Greenwald et al., (2003) have developed an improved scoring algorithm that computes a pooled standard deviation of all items, disregarding whether the RT originates from block three or five, or if the item has been responded to in a correct or incorrect manner. This pooled standard deviation is subsequently used to standardize the difference in response latencies by dividing an individual's difference in RT's by a personalized standard deviation of these response latencies. Compared to mere difference scores, Greenwald's scoring algorithm is accompanied by the advantage that the obtained scores are less prone to biases due to differences in average response time (Wiers, Eberl, Rinck, Becker, & Lindenmeyer, 2011). These standardized scores serve as the primary outcome measure of the IAT and will in the following be referred to as D-statistics. All D-statistics have been inserted in SPSS as a scale variable for further analysis. Beside the D-statistics the output of the software also computed an IAT-score using only the first half and another for the second half of the stimuli. These variables have been used to obtain an estimate of the internal consistency of the test. Both variables have been correlated with each other by employing the Spearman-Brown formula. The test for internal consistency disclosed a correlational coefficient of .463, which was significant at the level .01.

The second main outcome variable is the PPPS. This assessment scale of poker behaviour can be divided into two sub-scales, i.e., a scale investigating short-lived fluctuations in poker playing behaviour and a scale that measures more stable and pathological aspects of poker-related behaviour. Former mentioned sub-scale is mainly concerned with inquiring the amount of time that was spent on poker behaviour within the last seven days. For that sake, the first item measures the number

of days that were spent on playing poker within the last week. Items 2 and 3 identify the average number of sessions played on such a day, and the average duration of such a session, respectively. The data of all three items is multiplied in order to create a scale variable of the total amount of time in minutes spent pokering within the last week. Moreover, two dichotomous items inquire whether adherence to proper bankroll-management within that time period was successful or not and whether or not the subject tilted within the week. These two variables have been characterized as nominal variables within SPSS. If the participant responded with “no” to one of these questions a value of 0 has been recorded, while a value of 1 is indicative of a “yes” answer. Another item set out to determine the exact quantity of tilts within this week if the subject affirmed losing self-control within the last week. This item has been displayed by means of a scale variable within SPSS. The last item of the short-lived subscale identified the most striking reasons for engaging in poker activities within the preceding week. Subjects were required to choose the predominant motivations for playing poker out of ten alternatives. For each possible motive an own nominal variable has been created with 0 indexing that this reason was not apparent and 1 expressing the opposite pattern.

The more stable aspect of pathological poker-playing has been investigated by thirteen 4-point-Likert-scale items. Each item describes thoughts, behaviours, or habits that are assumed to be related to pathological forms of poker playing. The respondent has to indicate the extent of validity of the respective proposition on a 4-point Likert-scale. In order to make the answering pattern accessible to quantitative research, each of the four answering possibilities has become assigned a numerical equivalent within the constructed ordinal variables, e.g. “Not applying at all” equalling 0 points and “exactly applying” counting for 3 points. Reversed items have been computed in a manner that guarantees that higher scores are expressive of a more pathological manner of poker-playing also. All the points collected by filling in the 13 items have been accumulated to yield the overall test-score of the PPPS. The range of attainable points ranges from 0 to 49. A scale variable with this range has been established within SPSS. In order to assess the inter-item reliability of the 13 items, a reliability analysis has been executed. The obtained Cronbach’s Alpha value for the scale was as high as .827, and could be increased to .848 by deleting item 5. For that sake, this item has been excluded from further analysis. The pairs of scores from the same participant on the two different administrations of the test have been

correlated with each other in order to receive an estimate of test-retest reliability. The outcome indicated a test-retest reliability that was as high as .936 and was significant at the level of alpha .01.

The last outcome measure is the KFG, a 20 item containing 4-point Likert-scale about pathological gambling. As in the PPPS 20 ordinal variables have been set up with value labels 0 for “not applying at all”, 1 for “barely applying”, 2 for “is rather applying”, and 3 for “exactly applying”. The scores on each item of the scale are summed up to gain the overall test-score. This total-score is described as a scale variable within SPSS and used for further analysis. As in the PPPS, a reliability analysis has been carried out to investigate the inter-item relationship of the multiple items. The analysis of this scale put a Cronbach’s Alpha of .870 forth. Furthermore, a test-retest analysis has been conducted, yielding a correlational coefficient of .981, which is significant at the level of alpha of .01.

The first hypothesis states that poker players exhibit higher scores on the IAT than participants in the control group. Prior presumption is tested by comparing the mean-scores of the two independent samples on the D-statistics variable and searching for significant differences between the two of them. For that purpose, a T-test for independent samples has been executed, with poker-players and non-poker-players as the grouping variable.

The second hypothesis assumes that the IAT-score as well as the PPPS-score of the respective participant possess predictive value for the amount of time spent on pokering 18 days after the first point of measurement. Two regression-analyses have been conducted, to investigate the possible predictive character of the IAT and the PPPS for the quantity of subsequent poker-related behaviour with the D-statistics and the PPPS as the independent variables and the amount of time as the dependent variable. The pivotal outcome criteria will be whether or not the results are deemed significant on the level of alpha=0.05. Moreover, the magnitude of the R-square value specifies the proportion of variance in poker-related behaviour that can be accounted for by the respective variable.

If the D-statistics and/or the PPPS turn out to be significant predictors in the variance of poker-related behaviour, it will be investigated whether or not these variables also add predictive value to a regression model that is composed of a conventionally used screening method for gambling addictions, i.e. the KFG. This can be tested by selecting the amount of time spent on pokering as the dependent variable

and the KFG as the independent variable within the linear regression analysis. Via the option “Next” a possible added predictive value of the D-statistics and/or the PPPS can be tested, consecutively. The operated significance level was  $\alpha=0.05$ . By selecting the option “Change in R-square”, the shift in the proportion of variance in the amount of time spent on poker that can be accounted for by means of linear regression on the basis of adding another predictive factor to the regression model, can be inquired.

To investigate a possible added value in the proportion of variance of the PPPS that can be accounted for by supplementing explicit with implicit attitudes, a regression analysis has been conducted. In the first step the age of the participants has been inserted as an independent variable, in order to control for possible effects that might derive from inter-individual age-related differences. In the second step a host of social cognitive variables, such as self-efficacy, the pathological aspect of the attitude regarding poker, the detrimental social norm with respect to poker, and money-related outcome expectancies, have been selected as independent variables and in step 3 been extended by the D-statistics. The main outcome criterion will be a significant change in the R-square value, originating from the respective predictive variable.

Finally, to determine the extent to which implicit attitudes can add predictive value to explicit ones with respect to the variability on a conventionally used gambling addiction screening scale, a regression analysis has been executed. Compared to prior mentioned analysis of hypotheses four, the independent variables remained the same, while the dependent variable has been exchanged, i.e. the KFG in place of the PPPS. Once again, including the age variable of the respective participant controls for possible age-related devastations. A significant change in the R-square value deriving from replenishing the regression model with implicit associations serves as an indication of the added predictive value of this variable.

## **Results**

The independent samples T-test comparing the IAT-scores of the group of poker-players and non-poker-players showed no significant differences between the two groups,  $t(28)=1.322$ ,  $p=.0985$ . However, inspecting the IAT-data thoroughly, a sizeable outlier within the control group became instantly noticeable. While the mean

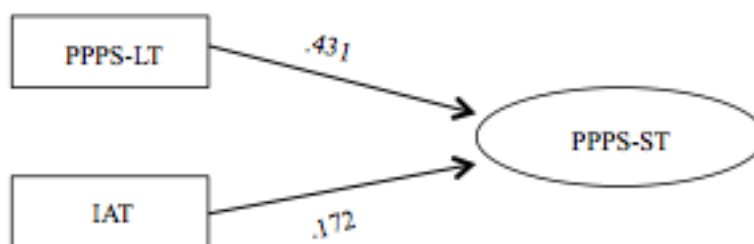


score in the group of poker-players was as high as .146 (SD=.345) on the zero plus or minus one scale, it was -.037 for the control group (SD=.41). The observed value of the outlier was .84, which exceeds the mean of the control group by more than two standard deviations. It is even higher than the maximum score originating from the group of poker-players (.77). Yet, if this outlier is excluded the independent samples T-test indicated a significant difference between the two groups,  $t(27)=1.925$ ,  $p=.0325$ . These results would confirm the assumption that poker-players hold higher hedonic implicit associations towards poker than non-poker-players do, with an  $\eta^2$ -effect size of .12. Moreover, it has been decided to exclude this outlier from all remaining steps of the analysis.

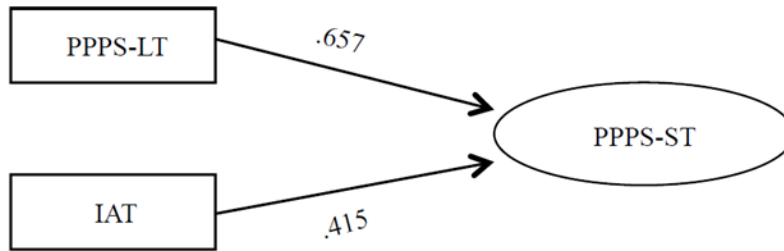
To inquire a potentially predictive value of both the IAT- and the PPPS-LT score for the amount of subsequent poker behaviour(PPPS-ST), two linear regression analyses have been carried out consecutively. The amount of time spent on playing poker was significantly predicted by linear regression on the basis of the scores on the IAT of the respective participant,  $F(1, 27)=5.62$ ,  $p=.025$ , with a  $R^2$ -value of .172 indicating that 17.2% in the variability of poker-related behaviour (PPPS-ST) in the sample can be explained by means of linear regression on the IAT-score.

In order to explore the predictive character of the PPPS-LT score for the variance in following poker-related activity (PPPS-ST) the same procedure has been implemented for the PPPS-LT scale. It turned out that the amount of time dealt with pokering was significantly predicted by linear regression on the basis of the PPPS-LT scores also,  $F(1, 28)=21.22$ ,  $p\leq.000$ . The  $R^2$ -value of .431 was even substantially higher than for the IAT and represents that 43.1% of the variance in the quantity of time spent on playing poker within the sample can be accounted for by means of linear regression on the PPPS-LT score. For a detailed depiction of the results see Table 2 and 3.

**Table 2**  
*Explained proportion ( $R^2$ ) of variance in PPPS-ST*



**Table 3**  
*Uncorrected Beta values*



Considering that the results of the former hypotheses indicate a predictive relationship between both the IAT- and the PPPS-LT scores on the effectively amount of time spend on playing poker, it has been investigated whether or not the two assessment methods can add predictive value to a conventionally used gambling addiction screening scale, i.e. the KFG. The results show that the KFG alone can explain a significant proportion of 32,6% of the variance in the amount of subsequent time spent on pokering,  $F(1, 28)=13.52$ ,  $p=.001$ ,  $R^2=.326$ .

Extending the regression model by adding the IAT-scores yielded a marginally significant change in the proportion of variance that can be accounted for by the KFG and the IAT-scores,  $F(1, 27)=3.47$ ,  $p=.073$ , with change in  $R^2=.077$ .

Additionally, expanding the model with the PPPS-LT scores was able to explain an added proportion of the variance in the amount of poker-related behaviour (PPPS-ST). Whereas the KFG alone accounted for 32.6% of the variance, supplementing the model with the PPPS-scores explained 43.1% of the variance in the amount of time spent on playing poker,  $F(1, 27)=5.01$ ,  $p=.034$ , thus changing the  $R^2$ -value by .106.

The comparison between implicit and explicit attitudes and their respective explaining value in the variability of the PPPS-LT scores began with an attempt to control for age-related differences. Including age as the first independent variable within the regression analysis served as a mean for that purpose. It turns out that age is no significant predictor for the variability in the PPPS-LT,  $F(1, 28)=.057$ ,  $p=.813$  with a  $R^2$ -value of .002. The social-cognitive determinants, such as self-efficacy, the pathological aspect of the attitude, a pathological form of the social norm, and money-related outcome expectancies, which have been added to the regression model in step two, proved to be able to account for a decisive proportion of the variation in the

PPPS-LT scores,  $F(4, 24)=36.17$ ,  $p=.000$ , with change in  $R^2=.856$ . However, replenishing the model with the D-statistics in step 3 did not lead to a significant difference in the proportion of variance in the PPPS-LT scores that can be explained by the different predictors,  $F(1, 23)=.009$ ,  $p=.927$  and a change in  $R^2=.000$ .

Also, implicit and explicit attitudes' explaining value concerning the proportion of variance in the KFG-scores has been a matter of interest. First of all, it has been controlled for a possible influence deriving from age differences among the participants. It turned out that age was not able to account for any variance in the KFG-scores,  $F(1, 28)=.003$ ,  $p=.954$ , with  $R^2=.000$ . In the next step social-cognitive determinants of poker behaviour, such as self-efficacy, the pathological aspect of the attitude, a pathological form of the social norm, and money-related outcome expectancies, have been added to the regression model as predictors. All explicit attitudes together were able to significantly alter  $R^2$  by .621,  $F(4, 24)= 9.835$ ,  $p=.000$ . In order to test the assumption that implicit associations regarding poker can explain a significant added proportion of the variance in the KFG-scores, the D-statistics have in a third step been attached to the regression model. This addition changed the  $R^2$ -value by .037, but could not be deemed significant,  $F(1, 23)=2.485$ ,  $p=.13$ .

## Discussion

The present study addressed the unique aspects of poker and aimed to contribute to a better understanding of the topic. Especially, the improvement of assessment-methods regarding poker has been a matter of interest. Due to the fact that poker differs significantly from other games of chance owing to the contributing factor of capability (Fiedler, & Rock, 2009; Meyer et al., 2012), using the same instruments of measurement for both might be inappropriate. Therefore, the present research probed the usefulness of a dyad of alternative measurement devices with respect to poker behaviour. The first of these devices is a poker-related assessment scale that has been constructed specifically for the purpose of investigating pathological habits regarding poker. Besides being inspired by the DSM-criteria for gambling addiction, this scale also set out to capture maladaptive tendencies, which are assumed to be unique to or at least more prevalent in poker-players. The second determinant of poker behaviour that has been under investigation in the present research was the assessment of the

strength of implicit associations towards poker. The IAT served as a mean to ascertain the magnitude of poker-related implicit attitudes and has been considered as an applicable device of measurement, since implicit associations have already been shown to be involved in substance addictions (Wiers, & Stacy, 2006), as well as, in gambling addiction (Brevers et al., 2012; Yi, & Kanetkar, 2010).

It was hypothesized that poker-players would exhibit more positive implicit associations towards poker than participants in the control group. In the first instance, this assumption of a significant difference between the two groups could not be verified. However, after the exclusion of a notable outlier within the group of non-poker-players, poker-players differed significantly from the control group in that they displayed higher hedonic implicit associations towards poker. But it is obvious that the presented results, due to the abstinence of any plausible explanations for the formation of the outlier, have to be considered with caution. Since the improved scoring algorithm of the IAT-software excluded all trials with RT's > 10ms, the most obvious explanation for the notable deviation can be ruled-out. The only explanation that can be suspected is that the participant responsible for the outlying score owns a high aversion towards the neutral household control condition. This category was initially deemed suitable, since it seemed to be relatively little affectively loaded. Possibly this low-level of affective load did not prove true for all participants. However, these retrospective justifications cannot be tested for their appropriateness and for that reason are matter of speculation. Since the preliminary results suggest that more positive implicit associations towards poker are apparent in poker-players, the findings should be confirmed by follow-up studies. This studies should be concerned with the assembly of a large enough sample so that the influence of potential outliers can be circumvent or at least be kept at a minimum. Furthermore, while inspecting the individual IAT-scores it became obvious that the two players who reported to have spent the greatest amount of their lifetime on poker also exhibited the highest scores on the IAT. For that sake, it seems recommendable to distribute the participants over three groups, i.e. non-poker-players, regular and periodic poker players, and excessive poker players in follow-up research. Note that excessive, in this case refers exclusively to the time criterion. In the present study the group of excessive poker-players would have been underrepresented and would have been an obstacle for inferential statistics. That is why future research should be eager to incorporate a large enough sample of former mentioned group into the research.

Since the preliminary results to the former hypothesis suggest that hedonic implicit associations might indeed be involved in poker players, the second hypothesis inquired whether or not implicit associations are able to account for a proportion of the variance in the amount of subsequent poker-related behaviour, i.e. amount of time spend on pokering. Actually, results of the present research indicate that 17.2 % of the variability of the amount of time spend on poker can be explained by means of the strength of implicit associations. In addition to the explaining value of the IAT, the same hypothesis has been tested regarding the explaining value of the Pathological Poker-Playing Scale (PPPS). It turned out that this scale accounted for 43.1 % of the variance in the amount of time spent on poker. These remarkable results are in line with the assumption that the poker assessment scale as well as implicit associations regarding poker are a measure of the severity of poker-related attitudes, habits, cognitions, and behaviour pattern either in an implicit or explicit manner.

However, since conventionally utilized assessment scales, that are designed to investigate gambling addiction in general, also explain a significant proportion of the variance in poker-related behaviour, it has by means of the third hypothesis been inquired whether or not the new constructed measurement devices (IAT and PPPS-LT) can add explaining value to conventionally used ones. While the IAT only showed a marginally significant additional value, the designed poker scale was able to add a significant predictive value to former mentioned gambling addiction screening scale. The proportion of variance that could be explained was as high as 43.1 % for both scales combined, whereas the KFG alone accounted for only 32.6 % of the variability in the amount of poker-related behaviour. The results are in line with the assumption that a scale representing aspects that are unique to or at least more prevalent in poker can have supplemental value for the assessment of pathological poker players and set the stage for further refinements in the realm of pathological poker. Yet, further validation of the scale is needed. For example, so far the scale has just been shown to be an effective measurement device in regular but not pathological poker players. Due to the fact that the group of poker players employed in this study exhibited a mean score of 10.87 on the already validated gambling addiction scale (KFG), which is clearly beneath the defined cut-off point of 16 points that is expressive of an initiating gambling problem, it seems recommendable to additionally prove the validity for a more pathological range of players. Also further research

aimed at confirming the promising preliminary results with respect to the marginally significant added value of the IAT, is required.

Another dyad of hypotheses addressed potential benefits of making use of implicit associations alongside explicit attitudes as determinants of pathological gambling and poker tendencies. More precisely, it has been a matter of interest in how far implicit attitudes are able to add explaining value to explicit ones regarding the variance in PPPS-LT scores and KFG-scores, respectively. The results of former mentioned hypotheses failed to reveal an added predictive value originating from the add-on of implicit to explicit attitudes for the variance in both scores. With respect to the variance in KFG-scores, the IAT-scores indeed added an explaining value of 3.7 % to explicit ones, but this add-on was not significant. It is notable that explicit attitudes accounted for sizable 85.6 % in the variance of the PPPS-scores and for 62.1 % in the variability of the KFG-scores. Consequentially, explicit attitudes with respect to poker have been shown to be a strong predictor of the variance in the severity of poker-related and gambling behaviour. However, as it has already been announced above in discussing the role of poker-related implicit associations with respect to an explaining value in the variance of the subsequent amount of poker behaviour, it seems also advisable in this case to retest a possible supplementary value of implicit measures with more refined samples, i.e. inclusion of pathological poker players. Possibly, follow-up research with this sample included, will indicate that implicit associations are especially pronounced in this group and corollary serve as a mean to discern them from regular players. Also, a potentially added value of implicit associations in the specified group concerning the variance in the severity of poker-related behaviour should in this case be scrutinized anew.

When taking a critical look at the present work, some points can be made. Firstly, the composition of the sample of poker-players reveals some limitations. As already mentioned, the sample consisted of regular rather than pathological poker players. Furthermore, participants of the group of poker players were almost exclusively winning players, i.e. they reported to have earned more money than lost with poker. This might have had influencing effects on the results of the study, since more pathological forms of poker playing are often associated with financial difficulties due to an inability to stop gambling despite the adverse social and financial consequences of the game. One of the effects that most likely can be attributed to the composition of the sample is that the total profit of the respective

player turned out to be the most robust predictor of the variability of the amount of subsequent gaming behaviour. However, including player that are addicted and contemporaneously lose money by playing poker would erase the observed relationship, because non-successful addicted players would spent approximately the same time on playing poker as regular winning players. The observed relationship seems for that sake to be an artefact of the composition of the sample, which existed exclusively of winning players. From a behaviourism perspective, this relationship makes perfect sense. Due to the intermittent but frequently occurring monetary rewards of the game, the respective player has been reinforced and for that sake increased the quantity of the required behaviour, i.e. playing poker. Further research should be concerned with the inclusion of both winning and losing pathological players into the sample, so that tendencies and characteristic pattern of the respective groups can be easily discerned.

Another limitation is not due to the sample but rather related to the current state of scientific knowledge with respect to poker. Findings of the study, such as that poker players appraised the proportion of the skill component to be significantly higher than non-poker players did, remain difficult to interpret as long as the debate about the relative influence of the chance and capability component on the outcomes of the game is not resolved by an accurate and objective answer (Fiedler, & Rock, 2009; Meyer et al., 2012). Either the findings are an expression of an unrealistic illusion of control, or they are the reflection of an accurate estimation of the aptitude component, which poker players have acquired through an extensive amount of practice.

A further critique point that can be made regarding the present research is that both measurement devices, i.e. the IAT and the PPPS, have been evaluated on the basis of the respective proportion of variance in the amount of poker-related activity that they can explain. However, as already mentioned, a large average amount of time spent on poker is not equivalent to being addicted and there are a couple of other factors involved which have to be apparent to speak of an addiction. Nevertheless, regarding the current state of scientific knowledge the time criterion is a suitable indicator for a first estimation of an individual's position on the bipolar continuum ranging from inconspicuous to pathological poker playing. Due to the abstinence of a more suitable criterion and the fact that there exists a positive relationship between the amount of time a person spends on poker and the likelihood of being addicted, the

time criterion has been deemed the most adequate reference point for the evaluation of the validity of the new established measurement devices.

Finally, another limitation of the present research is related to the study design. The present research employed a prospective cohort study design with 18 days elapsing between the two points of measurement. This rather short period of time minimizes the probability of ample changes during testing. Evidence for this view derives from results of test-retest reliability between the same tests administered at different points in time. For both assessment scales the reliability was higher than .90. That is why one could also argue that the design is rather a cross-sectional design than a prospective cohort study.

In sum, the preliminary results of this study suggest that poker players hold more positive implicit associations towards poker and that these hedonic associations and a devised poker assessment scale were able to explain a significant proportion of the variance in the amount of poker behaviour. If follow-up studies could confirm the influence of implicit attitudes, and ideally a linear relationship between the severity of poker behaviour and the strength of positive poker-related implicit associations, this would give rise to a multitude of alternative treatment possibilities. These treatment alternatives would, in contrast to other interventions, be primarily concerned with influencing the intuitive portion of the dual-systems model (Strack, & Deutsch, 2004). This can possibly be achieved by retraining automatic action-tendencies to approach poker as such a form of treatment has already been shown to be a successful treatment in hazardous drinkers (Wiers, Rinck, Kordts, Houben, & Strack, 2009). Such a treatment might be especially useful if there exists a dissonance between explicit and implicit attitudes. In such a case the addicted individual is explicitly eager to stop gambling but due to implicit attitudes cannot implement his or her intentions, since the impulsive portion wins the upper hand over the reflective component (Wiers, & Stacy, 2006). Furthermore, an implicit bias towards poker might be quantified by other measures than the IAT since this device is merely measuring memory bias. But as Wiers en Stacy (2006) have pointed out there exist other implicit biases, which could be assessed in order to become a more complete impression of the impulsive component regarding poker.

The poker related assessment scale has additionally turned out to add predictive value to conventionally used gambling scales, verifying the assumption that these conventionally used methods fail to capture some of the tendencies that are



unique to poker. While implicit attitudes alone turned out to be a significant predictor of the variance in the severity of poker-related tendencies, this was not the case if implicit attitudes were added to explicit ones as predictors. Follow-up studies should be concerned with the establishment of a more refined sampling procedure. Including pathological players into such studies is required to verify the findings of the IAT and ideally show that pathological poker players hold even higher hedonic implicit associations than regular poker players. If this would be the case, this would give rise to a vast number of new treatments that are aimed at changing the unconscious and impulsive rather than the reflexive component of human behaviour.

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hast.  
SNG's:  
MTT's:

- 11) Was ist dabei dein ROI (Return Of Investment)? (Bitte nur eins der folgenden Felder ausfüllen, Vorzeichen für positiv oder negativ)  
+: %  
-: %
- 12) Was war dein durchschnittlicher Stundenlohn bzw. Verlust beim Cash Game?  
+:  
-:
- 13) Was ist für dich der überwiegende Grund um Poker zu spielen?  
 Geld gewinnen  
 Nervenkitzel  
 die Gesellschaft während des Spiels  
 Ablenkung vom Alltag  
 negative Gefühle ausblenden  
 Spaß/Vergnügen  
 das strategische Element des Spiels  
 ein anderer, wenn ja welcher?
- 14) Wie viel Geld hast du mit Poker insgesamt schon gewonnen oder verloren?  
+:  
-:
- 15) Was ist das durchschnittliche buy-in mit dem du spielst? (Betrag angeben)
- 16) Betreibst du Bankroll-Management?  
 Ja  
 Nein
- 17) Wie groß ist deine Bankroll momentan? (Summe angeben)

***Social-Cognitive Determinants of Poker-Playing (SCDPP):***

Wenn ich es will, kann ich mein Spielverhalten einfach verändern.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Ich fühle mich selbst dazu in der Lage nicht zu viel Poker zu spielen.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Ich fühle mich in der Lage die Zeit, die ich mit Pokern verbringe, selbst zu kontrollieren.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Wenn ich will, ist es für mich einfach mein Spielverhalten auf ein gemäßigtes Niveau zu beschränken.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Ich finde selbst Poker zu spielen im Allgemeinen... (bitte auf dem Differential ankreuzen)

---

schlecht	gut
----------	-----

Pokerverhalten, das andere Verpflichtungen behindert, finde ich...(bitte auf dem Differential ankreuzen)

---

schlecht	gut
----------	-----

Ich glaube, dass zu viel Poker spielen negative Konsequenzen für mich hat.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Poker ist für mich verführerisch, weil sich in verhältnismäßig kurzer Zeit recht viel Geld verdienen lässt.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Personen die mir wichtig sind finden es nicht gut, dass ich Poker spiele.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Die Mehrheit meiner Freunde pokert.

- trifft genau zu

- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Personen die mir wichtig sind finden es nicht gut, dass ich zu viel Pokerspiele.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Die Mehrheit meiner Freunde pokert zu viel.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Bevor ich beginne eine Session zu spielen, erwarte ich die folgenden finanziellen Konsequenzen... (bitte auf Differential ankreuzen)

---

Sehr viel Verlust	sehr viel Gewinn
-------------------	------------------

Vor dem Beginn einer Session freue ich mich auf den bevorstehenden Nervenkitzel.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Vor dem Beginn einer Session freue ich mich hauptsächlich auf den Spaß, den ich mir vom Spielen verspreche.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Vor dem Beginn einer Session freue ich mich hauptsächlich auf das erhoffte gewonnene Geld.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

Vor dem Beginn einer Session freue ich mich hauptsächlich darauf mein strategisches Können mit dem der anderen Spieler zu messen.

- trifft genau zu

***Pathological Poker-Playing Scale (PPPS):***

- 1) An wie vielen der letzten 7 Tage hast du Poker gespielt?
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
- 2) Wie viele Sessions hast du an so einem Tag durchschnittlich gespielt?
- 3) Wie lange dauerte so eine Session durchschnittlich? (bitte in Minuten angeben)
- 4) Bist du in den letzten 7 Tagen getilgt?
  - Ja
  - Nein (falls diese Antwort angekreuzt wurde, kann Frage 5) übersprungen werden)
- 5) In wie vielen Sessions der letzten 7 Tage bist du getilgt?
- 6) Hast du dich in den letzten 7 Tagen an dein Bankroll-Management gehalten?
  - Ja
  - Nein
- 7) Was war in den letzten 7 Tagen der überwiegende Grund für dich zum Pokern?
  - Geld gewinnen
  - der Nervenkitzel
  - die Geselligkeit während des Spielens
  - die Ablenkung vom Alltag
  - die Ausblendung von negativen Gefühlen
  - der Spaß/das Vergnügen
  - die strategische Komponente des Spiels
  - verlorenes Geld zurückzugewinnen
  - die Gewohnheit / Routine
  - ein anderer Grund → wenn ja welcher?

Die folgenden Items beinhalten eine Anzahl von Aussagen bezüglich deines Pokerverhaltens. Für jede dieser Aussagen musst du angeben inwieweit sie auf dich zutreffen.



- 8) Wenn ich beim Pokern Geld verloren habe, versuche ich das Geld so schnell wie möglich wieder zurückzugewinnen.
- trifft genau zu
  - trifft eher zu
  - trifft eher nicht zu
  - trifft gar nicht zu
- 9) Um verlorenes Geld zurückzugewinnen spiele ich auf einem Limit das über dem mir Vorgenommenen liegt.
- trifft genau zu
  - trifft eher zu
  - trifft eher nicht zu
  - trifft gar nicht zu
- 10) Gelegentlich spiele ich Poker, obwohl ich eigentlich gar keine Lust dazu habe.
- trifft genau zu
  - trifft eher zu
  - trifft eher nicht zu
  - trifft gar nicht zu
- 11) Ich stelle mir oft vor wie es wäre mit Poker viel Geld zu verdienen.
- trifft genau zu
  - trifft eher zu
  - trifft eher nicht zu
  - trifft gar nicht zu
- 12) Wenn ich ins Casino gehe, spiele ich auch andere Spiele außer Poker.
- trifft genau zu
  - trifft eher zu
  - trifft eher nicht zu
  - trifft gar nicht zu
- 13) Wegen Poker habe ich schon Menschen belogen die mir wichtig sind.
- trifft genau zu
  - trifft eher zu
  - trifft eher nicht zu
  - trifft gar nicht zu
- 14) Ich habe schon öfter mit Geld gepokert wovon ich wusste, dass es eigentlich für einen anderen wichtigen Zweck bestimmt war.
- trifft genau zu
  - trifft eher zu
  - trifft eher nicht zu
  - trifft gar nicht zu
- 15) Ich habe mir schon öfter Geld geliehen um weiterspielen zu können, nachdem ich den Betrag den ich mir vor dem Spielen als Grenze gesetzt hatte bereits verloren hatte.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

16) Wegen des Pokerns verzichte ich auf Sachen die mir eigentlich wichtig sind.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

17) Ich finde es schwer mir einen Alltag ohne Pokern vorzustellen.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

18) Ich habe schon öfter Leuten gesagt ich hätte gewonnen, obwohl ich in Wahrheit Geld verloren hatte.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

19) Nachdem ich an einem Tag überdurchschnittlich viel verloren habe, bin ich am darauffolgenden Tag dazu geneigt mehr zu spielen, um das Geld zurückzugewinnen.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

20) Aufgrund meines Pokerverhaltens kann ich beruflichen, universitären, familiären, und/oder sozialen Verpflichtungen nicht mehr so gut nachkommen.

- trifft genau zu
- trifft eher zu
- trifft eher nicht zu
- trifft gar nicht zu

*Kurzfragebogen zum Glücksspielverhalten (KFG):*

## Kurzfragebogen zum Glücksspielverhalten (KFG)

(Petry & Baulig)

Name: .....

Sie lesen jetzt eine Reihe von Aussagen zum Glücksspielverhalten. **Falls Sie zur Zeit nicht spielen, beziehen Sie sich bitte auf vergangene Spielphasen.** Bitte beurteilen Sie zu **jeder** dieser Aussagen, ob diese auf Sie entweder ‚gar nicht zutrifft‘, ‚eher nicht zutrifft‘, ‚eher zutrifft‘ oder ‚genau zutrifft‘. Machen Sie ein Kreuz in das entsprechende Kästchen. Bitte **bearbeiten Sie alle Aussagen** und wählen Sie jeweils **nur eine** der vorgegebenen Antwortmöglichkeiten.

trifft gar nicht zu	trifft eher nicht zu	trifft eher zu	trifft genau zu
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1. Ich habe meistens gespielt, um den Verlust wieder auszugleichen 

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2. Ich kann mein Spielen nicht mehr kontrollieren. 

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3. Meine Angehörigen oder Freunde dürfen nicht wissen, wieviel ich verspiele. 

--	--	--	--
4. Im Vergleich zum Spielen erscheint mir der Alltag langweilig. 

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5. Nach dem Spielen habe ich oft ein schlechtes Gewissen. 

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6. Ich benutze Vorwände, um spielen zu können. 

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7. Ich schaffe es nicht, das Spielen längere Zeit einzustellen. 

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8. Ich spiele fast täglich um Geld. 

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9. Durch mein Spielen habe ich berufliche Schwierigkeiten. 

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10. Beim Spielen suche ich Nervenkitzel. 

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11. Ich denke ständig ans Spielen. 

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12. Um mein Spiel zu finanzieren, habe ich oft unrechtmäßig Geld besorgt. 

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13. Den größten Teil meiner Freizeit spiele ich. 

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14. Ich habe schon fremdes bzw. geliehenes Geld verspielt. 

--	--	--	--
15. Ich war wegen meiner Spielprobleme schon in Behandlung. 

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16. Ich habe häufig mit dem Spielen aufhören müssen, weil ich kein Geld mehr hatte. 

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17. Weil ich so viel spiele, habe ich viele Freunde verloren. 

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18. Um spielen zu können, leihe ich mir häufig Geld.

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19. In meiner Phantasie bin ich der große Gewinner.

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20. Wegen des Spielens war ich schon oft so verzweifelt, daß ich mir das Leben nehmen wollte.

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Rohwert: \_\_\_\_\_

Prozentrang: \_\_\_\_\_

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