Journal of Gambling Issues
Volume 47, May 2021
http://igi.camh.net/doi/pdf/10.4309/jgi.2021.47.7
DOI: http://dx.doi.org/10.4309/jgi.2021.47.7

The Narrative of Persons with Gambling Problems and Substance Use: A Multidimensional Analysis of the Language of Addiction

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Abstract

Several studies have shown that the analysis of the narrative dimension may represent a useful instrument to shed light on certain critical psychological aspects; to this extent, it might also be fruitful to understand better the addiction disorder. The present study aimed to investigate the critical psychological-narrative aspects involved in Gambling Disorder (GD). A semi-structured interview, one which invited participants to narrate the various phases of addiction (addiction definition, onset, chronicization, relapse, desire, loss of control, control strategies, treatment, future behaviours with respect to the object of addiction), was administered to two groups of subjects in treatment: thirty with GD and eighteen with Substance Use Disorder (SUD). A quali-quantitative multidimensional analysis of this interview was performed. The dependent variables were psychological aspects (agency, passivity, locus of control, motivation) and narrative variables (global narrative coherence and self-projection into the future). The main findings showed that the GD presented a higher sense of agency, passivity, external locus of control and external motivation compared to SUD. Both groups showed a lower global narrative coherence score during the narration of desire (craving) compared to other phases. Moreover, both groups showed an absent self-projection into the future. The findings could be linked to possible impairment of the integration of the self, emotional dysregulation and low self-control typical in addiction. In conclusion, the present study highlighted the importance of the narrative dimension to detect certain critical points in the addiction condition on which to potentially address the treatment.

Keywords: Gambling, Gambling Disorder, Substance Use Disorder, Addiction Narrative, Narrative Coherence, Language

Résumé

Plusieurs études ont montré que l'analyse de la dimension narrative peut apporter un éclairage utile sur certains aspects psychologiques cruciaux; en ce sens, elle peut aussi contribuer à une meilleure compréhension des troubles de dépendance. Notre étude visait à examiner les aspects à la fois psychologiques et narratifs intervenant dans les troubles de dépendance. Nous avons réalisé des entrevues semi-structurées qui invitaient les participants à raconter les différentes phases de la dépendance (définition de la dépendance, début, chronicisation, rechute, désir, perte de maîtrise, stratégie de régulation, traitement, comportements futurs en ce qui a trait à l'objet de la dépendance). Nous avons mené ces entrevues auprès de deux groupes de personnes en traitement : 30 ayant une dépendance au jeu (DJ) et 18 ayant un trouble lié à l'usage d'une substance (TUS), puis nous en avons effectué une analyse multi-dimensionnelle quali-quantitative. Les variables dépendantes étaient des aspects psychologiques (agentivité, passivité, lieu de contrôle, motivation) et des variables narratives (cohérence narrative globale et projection de soi dans l'avenir). Les principaux résultats ont indiqué que, comparativement au groupe TUS, le groupe DJ présentait une meilleure perception sur les plans de l'agentivité, de la passivité, du lieu de contrôle externe et de la motivation extrinsèque. Par rapport aux autres phases, les deux groupes ont montré une cohérence narrative globale inférieure durant la narration relative au désir (envie irrésistible). En outre, les deux groupes ont montré une absence de projection de soi dans l'avenir. On peut lier ces résultats à l'intégration déficiente du moi, à la dysrégulation émotionnelle et au faible autocontrôle qui caractérisent la dépendance. En conclusion, notre étude souligne l'importance de la dimension narrative pour déceler certains aspects cruciaux de l'état de dépendance susceptibles d'orienter le traitement.

Introduction

The latest edition of the *Diagnostic Statistical Manual of Mental Disorders* (*DSM-5*; American Psychiatric Association, 2013) defines Gambling Disorder (GD) as the persistent and recurrent problematic gambling behaviour involving clinically significant difficulty or discomfort. GD shares with the Substance Use Disorder (SUD) the loss of voluntary control over the behaviour which is the object of addiction: the subject is unable to control the urge to play despite the negative consequences in the personal, family and work environment (APA, 2013).

This latter point suggests that GD is a disorder connected to an impairment of the systems mediating the integration of the self as well as the systems involved in

decision-making processes (Brevers & Noël, 2013; Potenza, 2014; Wölfling et al., 2020). Several factors can impair the integration of the self and reduce or remove control in GD. Gambling-related cues (internal and external) can affect the subjects' attention, resulting into an "attentional prejudice" towards gambling (Wyckmans et al., 2019). Subjects can also experience a strong desire, i.e., a strong internal motivation towards gambling leading them to act (sometimes automatically) on impulses eluding cognitive control. Consistently, a deficiency of self-control has been suggested to be linked to impulsivity-related personality traits and to maladaptive strategies in emotional regulation (e.g., Tárrega et al., 2015). In particular, emotional dysregulation and vulnerability appear to represent important factors in GD severity (e.g., Lobo et al., 2014; Suomi et al., 2014). In this regard, a recent study has shown a positive relationship between gambling behaviours, dissociation, impulsivity, and alexithymia (Gori et al., 2016). The latter is characterized by difficulty in identifying and describing feelings as well as poor imaginative processes and externally oriented thinking (Taylor et al., 1997). Therefore, in gamblers, the difficulties to come into contact and define their feelings seem to support the fact that they lack a cognitive component of affect regulation, suggesting a definition of GD as an affect regulation disorder (Di Trani et al., 2017).

It is important to add that, in addicted subjects, a poor integration of the self might affect their ability to make decisions with consequences that play out over time. For example, subjects with GD might have problems in imagining themselves into the future and this may result in a hypersensitivity to rewards that directs behaviour toward appetitive stimuli providing immediate gratification (Bechara et al., 2002; Bechara & Damasio, 2002; Jiménez-Murcia et al., 2017; Mestre-Bach et al., 2016).

The idea of a "pathologically fragmented" self in addicted subjects has received support from various perspectives (e.g., Dill & Holton, 2014; Levy, 2006; Lewis, 2015). In this respect, it has been suggested that in addicted subjects the existence of a poor integration of the self might be tied to dissociative phenomena in which the loss of agency and self-efficacy prevails, and the sensation of desire is experienced as alien to one's self (Keane, 2002; Reith & Dobbie, 2012; Schluter & Hodgins, 2019).

Besides the loss of agency and self-efficacy, a further psychological aspect examined in the literature on addiction is the internal/external locus of control. People with an internal locus of control are described as believing that the outcome of their actions is the product of one's behaviour (Şahin et al., 2009). As such, the internal locus seems to be linked to higher emotional expression, i.e., low levels of alexithymia (Hexel, 2003), self-confidence, activeness, positive self-concept, and a more effective and constructive interpersonal conflict resolution (Anderson et al., 2005; Loosemore & Lam, 2004; Şahin et al., 2009). On the contrary, people with an external locus of control do believe they are not able to control the environment and that the outcome of actions is because of fate, luck, or any one of a number of powerful other forces (Rotter, 1954). Moreover, individuals with external locus reveal themselves, through the results, to be inactive and with low self-esteem (Loosemore & Lam, 2004; Silvester et al., 2002). Concerning the addicted subjects, although several studies

showed that they exhibit low self-esteem and an external locus of control resulting in the tendency to attribute their problems to external causes (de Stadelhofen et al., 2009; Heidari & Ghodusim, 2016), certain studies nevertheless showed an association between overconfidence and narcissistic proneness, and severity of the GD (Lakey et al., 2007, 2008), suggesting higher levels of internal locus of control, at least in the gambling activities. These inconsistent results suggest that the locus of control could be different depending to addiction and, specifically for gamblers, the overconfidence could represent a compensatory strategy to a low internal locus of control providing a sense of self-efficacy. In this regard, it has been suggested that the possibility to identify the source of motivating factors—whether it is internal or external—helps the prediction of patients' behaviours, and hence, the possible prevention and treatment of the addicted behaviours (Center for Substance Abuse Treatment, 1999; Köpetz et al., & Kruglanski, 2013).

In the cognitive psychological literature, it has been hypothesized that a fruitful way to analyse the structure of the self is that of investigating the *narrative dimension* (e.g.,; Giddens, 1991; McAdams & McLean, 2013; Riessman, 1990). This hypothesis is founded on the view that human beings constitute their own identity by producing autobiographical narratives—life stories (Habermas & de Silveira, 2008; McAdams, 2001; Schechtman, 1996). For example, Bruner (1991) suggested that autobiographical narratives, favouring the integration of different aspects of personal experiences into a unitary representation, might contribute to the construction of a coherently structured sense of self. In support of this claim, the Adult Attachment Interview (AAI; Hesse, 1999; Main et al., 2002), a standardized interview that explores adult individuals' autobiographical memories of past attachment relationships to evaluate the individual's state of mind concerning attachment relationships, includes in its coding system the coherence construct. Narratives that present low levels of coherence, in which episodic memories of attachment-related traumas and losses are not well integrated in the semantic structures of self-knowledge, are classified as "unresolved" (Liotti, 2004). Several studies have shown that children whose parents are rated unresolved develop a disorganized attachment to their parents (Hesse et al., 2003). What is important is that both adult "unresolved" and infant disorganized attachment behaviour bear close resemblance to clinical phenomena usually regarded as indicative of dissociation (Hesse & Main, 2000; Liotti, 2004; Main & Morgan, 1996).

Dennett (1993) described the self as the "center of narrative gravity" of the individual, i.e., a fictional character making sense of the body's actions by attributing them meaning and intentionality. Under this view, as it represents a crucial process in giving meaning to experiences and defining the subject's position in the world, narrative might be an important instrument useful to shed light on certain of the critical psychological (cognitive, emotional, and motivational) aspects of addiction (e.g., Giddens, 1991; Riessman, 1990; Salvatore et al., 2004).

That narrative may play a role in the processes of integrating the different aspects of personal experiences is linked to the subject's ability to organize his or her events in a

coherent story (Habermas & de Silveira, 2008; Herman, 2013; Köber & Habermas, 2017; Köber et al., 2019). To this extent, *narrative global coherence* becomes a crucial property able to reveal important aspects of the structure of the self. This property relates to the ability to organize in space and time the events narrated, by establishing causal and temporal links between them (King et al., 2014; Reese et al., 2011; Richardson, 2000). In this regard, the temporal factor comes to be as a key element of the narrative dimension (e.g., Abbott, 2008; Corballis, 2011): it is precisely the ability to insert the sequences of events in a temporally organized plot to give to those sequences the proper structure of a storyline. In fact, recent studies showed that the cognitive device involved in the mental projection of the self over time (both past and future), the so-called Mental Time Travel (MTT) (Suddendorf & Corballis, 1997, 2007), can play a crucial role also in the elaboration of coherent narratives (e.g., Ferretti et al., 2018; Marini et al., 2019). Interestingly, as mentioned above, the temporal projection of the self over time is particularly relevant in the addiction condition, in which people go through different phases (onset, desire, loss of control, chronicity, treatment, and relapses) and "struggle with putting their lives together after disruption, controlling time, creating continuity with past selves, reconstructing new selves… and locating themselves in the past, present and future" (Charmaz, 1992, p. 6). Not surprisingly, certain studies highlighted that impaired abilities of future-oriented mental time travel are a characteristic of addictive behaviour in which there is a tendency to remain stuck in the present (Noël, Jaafari et al., 2017; Noël, Saeremans et al., 2017). For example, in a recent investigation, the inattention to the future consequences of actual behaviour and the negative self-perception of prospective memory functioning turn out to be among important predictors of gambling severity (Nigro et al., 2019). Moreover, it has emerged that this impaired MTT could compromise the process of change in addiction recovery (Noël, Jaafari et al., 2017; Noël, Saeremans et al., 2017).

In the light of these considerations, the present research aimed to investigate the psychological-narrative aspects involved in pathological gambling through a quali-quantitative multidimensional analysis of a semi-structured interview, which invited two groups of dependent subjects in treatment (GD and SUD) to narrate the various phases of addiction.

The choice to insert a comparison with SUD is driven by the growing debate about differences and similarities between GD and SUD (Grant & Chamberlain, 2015; Leeman & Potenza, 2012; Rash et al., 2016; Wareham & Potenza, 2010). Specifically, gamblers and substances users seem to share parallels in terms of disease onset and course, along with overlapping comorbid expression, and evidence for common etiological (genetic and environmental) factors derived from family studies (Grant & Chamberlain, 2015). A recent review (Leeman & Potenza, 2012) reported that neurocognitive tasks findings suggest that impulsivity and compulsivity are relevant to both GD and SUD though findings have been somewhat less consistent in SUD, whereas performance on executive functioning tasks suggests greater impairments in SUD than in GD, likely reflecting specific underlying vulnerabilities or effects of chronic substance use (Potenza, 2009). Generally, research highlight that

a comparison of the characteristics of GD and SUD could help advance future clinical research on these conditions.

To the best of our knowledge, there are no studies comparing GD and SUD for the following components: (1) the narrative markers linked to the personality aspects, namely agency, passivity, locus of control, motivation; and (2) specific narrative variables, namely global narrative coherence and self-projection in future.

In the present study, we focused on the comparison of the (1) narrative markers and (2) narrative variables, and hypothesized to find differences in these markers and variables in the narration of the various phases of addiction in the two groups. At the same time, we tried to compare the same markers and variables to characterize possible similarities and differences between the two groups. These hypotheses are related to the assumption that, in both groups, the development of disorder could be linked to a maladaptive pattern of emotional regulation and a self prone to fragmentation, which could be more clearly detected through the low coherence in the narration of the phases of addiction that could trigger greater emotional involvement. Testing these hypotheses might be particularly useful both for diagnostic purposes and for the treatment of addiction. In fact, highlighting these differences and similarities could be useful for the construction of tailored intervention protocols, centred on narrative practices, which consider both the phase and the type of addiction.

Method

Participants

A total of forty-eight participants with addiction disorder, treated at the public Services for Addiction of Trieste, Udine, Gorizia, Pordenone, Enna, Avellino, were recruited from October 2018 to January 2019: thirty participants with GD (24 male and 6 females; mean age 46.63 ± 9.08) (GD) and eighteen participants (16 male and 2 females; mean age 41.39 ± 6.83) with SUD (heroin). Participants signed the consent form for the participation to the study and for the treatment of the data.

Recruiters were asked to include participants showing a sufficient degree of cognitive competences required to answer the interview's questions and to exclude participants (especially among SUD) showing signs of a serious cognitive impairment.

Participants were invited to take part in a study investigating the narrative dimension of addiction and the narrative competences of subjects with addiction issues. The refusal rate reported was less than 10%. To ensure a good representation of opinions, recruiters were requested to randomize participants through the following method: selection of 4 subjects accessing the clinic one day a week for 5 weeks (each week a different day). Sociodemographic and clinical information such as educational level, first diagnosis received, duration of the treatment, age at the first treatment, were collected.

Participants hold predominantly a high school degree or equivalent (GD 65.2%, SUD 75%); with respect to the time of the interview, the majority of GD (69.5%) received the first diagnosis of addiction 1 year before, while the majority of SUD (75%) 4–8 years before; the duration of the treatment at the Public Service for Addiction for GD is of 1 year for 47.8% of the participants, 1–3 years for 39 %, 3–6 years for 17%, while the duration of the treatment for SUD is of more than 7 years for 50% of the participants and 3–6 years for 50%; the age at the first treatment for GD is 18–25 for 21.7% of the participants, 26–30 and 51–60 for 17%, 36–40, 41–50 and more than 61 for 13%; under 18 for 8.6%, while the age at the first treatment for SUD is 36–40 for 50% of the participants, 41–50 and 18–25 for 25% of the participants.

Therapeutic treatments administrated in the clinic are cognitive-behavioural and group therapy for GD, methadone, cognitive-behavioural and group therapy for SUD. We did not collect information about comorbidity as we relied on background evidence showing that GD and SUD are both highly comorbid with other mental health disorders. The common estimate of the comorbidity rate is 96% for GD (Kessler et al., 2008) and more than 80% for SUD concerning one or more of psychiatric disorders such as depression, anxiety, and mood-impulse (Goldner et al., 2014; Kelly & Daley, 2013; Pani, et al., 2009).

Procedure

The research included the administration of a semi-structured interview (see Appendix) which explored the following eight thematic areas and phases of addiction: (1) definition of addiction; (2) reasons and causes of the onset of addiction; (3) reasons for which the state of addiction has been maintained and became chronic; (4) reasons that caused the relapses; (5) desire and craving towards the object of addiction; (6) loss of control; (7) strategies of control during the treatment; and (8) effectiveness of treatment on the control of addictive behaviour.

The interviews were audio-recorded and subsequently transcribed. The first step of the analysis was to divide the interview corpus in the eight macro-areas indicated above: (1) definition of addiction, (2) onset (trigger factors of the addiction), (3) maintenance (conditions for which the relationship with the object of dependence continued and became chronic), (4) relapse (conditions under which one falls back into addiction), (5) desire (trigger factors of craving), (6) loss of control, (7) control strategies, and (8) treatment. The second step was to evaluate in each macro-area the global narrative coherence score, according to the Narrative Coherence Coding Scheme (NCCS; King et al., 2014; Race et al., 2015; Reese et al., 2011), and to count the occurrences of sentences in which there were self-future projections (the subject imagines herself in the future) and the indicators linked to the personality aspects (agency, passivity, locus of control, motivation) (Table 1).

The scores and the occurrences were performed blindly by two pairs of evaluators; discrepancies were discussed to find an agreement on the score. The occurrences of

Table 1
Description of the analysed dependent variables

Dependent Variable	Explanation of Dependent Variable
Narrative Variables	
Global Narrative Coherence*	
a) Narrative context: evaluates whether the narrated events are placed in space and time.	0: when the narration does not contain any information on time and place 1: the information provided is partial. Time and space are only mentioned 2: place and time are mentioned, but one of the two in a very vague way (e.g.: "a while ago") 3: place and time of the narration are described in a specific way (e.g., "At 8 o'clock this morning I drove to my brother's house");
b) Chronological organization: the degree in which events described in the narration are arranged along a timeline.	0: the narration contains little or no information about the chronological order of events; 1: starting from the narrations, the experimenter can order less than half of the described actions from a temporal point of view; 2: 50% -75%; 3: at least 75% of the most relevant shares can be temporarily ordered
c) Theme: development of a theme, causal links or elaborations, solution of history.	0: the events narrated move away from the main theme 1: the central theme can be identified but not developed through elaborations, interpretations, causal links 2: partial elaboration of the theme 3: all the elements are present and are integrated into a final solution.
Self-future: sentences in which the subject imagines himself/herself in the future.	For example: "credo che non giocherò mai più / I guess I will never play again; voglio solo tornare a casa dalla mia famiglia / I just want to back home to my family".
Personality Variables/Aspects	
Agency	Sentences with action verbs, choice indications, and self-efficacy markers. For example: "*ho iniziato a giocare* alle slot machines / *I started playing* slot machines; *sono andato a rubare* per comprare le

Table 1 Continued.

Dependent Variable	Explanation of Dependent Variable
	sostanze / *I went to steal* to buy drugs; *ho deciso* di auto-denunciarmi / *I decided* to self-report."
Passivity	Sentences with action verbs in passive Italian form or automatisms. For example: "*non mi rendevo conto* di quello che facevo / *I didn't realize* what i was doing; *mi hanno attirato* nel mondo della droga / *Someone attracted me* in drugs world; mia moglie *mi ha spinto a* chiedere aiuto / my wife *prompted me* to ask for help."
Internal and external locus of control	Sentences in which the result of an action is the product of one's own behaviours or actions, or of external causes independent of one's will. For example: "ho iniziato a giocare quando è morta mia moglie e mi sono ritrovato da solo / I started playing when my wife died and I found myself alone (external locus);" ho iniziato a fare uso di sostanze perché ho un carattere debole / I started using drugs because I have a weak character (internal locus)".
Internal and external motivations	Sentences in which subjects express the reasons (internal or external) that led them to perform or tend towards a specific action. For example: "gioco perché mi fa sentire soddisfatto / I play because it makes me feel satisfied (internal motivation); gioco alle slot machines perché spero in una grande vincita / I play slot machines because I hope for a big win (external motivation)"

the self-future projection and indicators linked to the personality aspects were transformed into percentages in ratio to the number of words in each macro-area.

Statistical analyses

Two-way ANOVAs 2×8 with Group (GD *vs.* SD) as between-factor and macro-area (definition of addiction *vs.* onset *vs.* maintenance *vs.* relapse *vs.* desire *vs.* loss of control *vs.* control strategies *vs.* treatment) as with in factor were performed on each dependent variable of the personality aspects (agency, passivity, internal and external locus of control, internal and external motivation) and the narrative variables (global narrative coherence and self-future projection). For post-hoc analysis Bonferroni's correction was applied. All statistical analyses were performed using Statistica (StatSoft, Inc. 2010).

Results

Differences in the personality aspects

Two-way ANOVAs Group *per* macro area on each dependent variable of the personality aspects showed a main effect of Group on the agency [$F(1,46)=29.46$; $p = .001$], passivity [$F(1,46)=9.10$; $p = .004$], external locus of control [$F(1,46)=6.26$; $p = .016$] and external motivation [$F(1,46)=19.00$; $p = .001$], where the GD presented higher percentages than SD group (Figure 1 and Table 2).

The main effect of macro area [$F(7,322)=2.98$; $p = .005$] was found on the agency, where in both groups it was significantly higher in the narration of control strategies compared to the narration of the definition ($p = .001$) and maintenance ($p = .008$) of addiction.

The main effect of macro area [$F(7,322)=8.04$; $p = .001$] was also found on passivity, where in both groups it was higher in the definition of addiction than in the narration

Figure 1
Significant differences between Gambling Disorder (GD) vs. Substances Use Disorder (SUD) on agency, passivity, external locus of control, and external motivation.

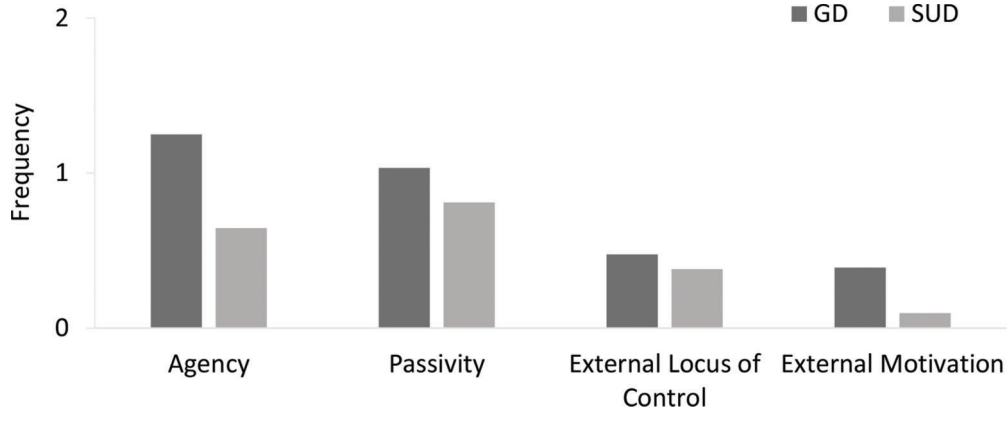


Table 2

Clinical examples from original interviews on personally aspects resulted different between Gambler Disorder and Substance Use Disorder

Personality aspects	Gambler Disorder	Substance Use Disorder
Agentivity	Una **si crea dei problemi**, **si va a cercare** il mezzo più rapido e sbrigativo per recuperare dei soldi. **Io sapevo di avere dei problemi**, quindi **cercavo nel gioco di risolvere** qualcosa, però **sapendo giorno per giorno che andavo sotto ai problemi** che avevo. **Andavo in banca**, **prelevavo quello che suppergiù mi abbisognava** e **ho incominciato** con un prelievo ogni 15 giorni / *One **creates problems for itself**, **one goes to look for** the quickest way to recover money. **I knew I had problems**, so **I tried to solve something in the game**, **but knowing day by day that I was going under the problems** I had **I went to the bank**, **took out what I roughly needed** and **started** with a withdrawal every 15 days.*	Èstato un inizio per conoscere ste sostanze, perché dopo **ho fatto io la scelta di continuare**, non è stata la causa della compagnia perché ripeto mio fratello … a me non interessa le droghe e io invece sì, di cui la compagnia può essere o non può non essere, però sei sempre tu che scegli, di cui dopo è iniziata la carriera da tossicodipendenza e da tossico schifoso perché dopo pensavi a te, volevi sentirti più importante. / *It was a beginning to get to know these substances, because after **I made the choice to continue**, it was not because of the company because I repeat my brother … I don't care about drugs and I do, of which the company can be or it can't not be, but it's always you who chooses, whose career as a drug addict and a lousy drug addict began because after you thought of yourself, you wanted to feel more important.*
Passivity	Dopo **mi era capitato** che io dovevo fare di tutto per stare cinque ore là … E quindi **mi ha portato**, questo qua, a spendere dei soldi. E da una parte **mi son ritrovata inconscia di averlo fatto.** Dopo è diventata **qualcosa di …possessiva, possessiva nella mia mente, nel mio io** /*After that, **it happened to me** that I had to do everything to stay there for five hours… And so **it led me**, this one, to spend money. And on the one hand **I found myself unconscious of having done so**. Then **it became something… possessive, possessive in my mind, in my Self**.*	Perché alla fine, **io non sapevo cosa facessi**; io mi sentivo insieme agli altri e **non sapevo a cosa andassi incontro**. **Per me era una routine**, un normale divertimento, un festeggiamento continuo. In famiglia, con gli amici, gli amici degli amici, diciamo che era un ritrovo tutti i giorni, era una prassi. / *Because **I did not know what I was doing**; I felt together with the others and **did not know what I was getting into**. **For me it was a routine**, a normal entertainment, a continuous celebration. With family, with my friends, friends of my friends, let's say it was a meeting place every day, it was a practice.*

Table 2 Continued.

Personality aspects	Gambler Disorder	Substance Use Disorder
External locus of control	Mi riempiva la giornata. A un certo momento **mi son ritrovato la giornata vuota.** Nel buco, semprelavorando, **c'era la noia**, **non sapevo cosa fare**. Dipende **dal denaro**, **dal tempo che si ha a disposizione**, **situazione sociale di cui si gode**, di un complesso di cose. / *It filled my day. At a certain* ***moment I found the day empty****. In the hole, always working, more than anything else* ***there was boredom****,* ***I did not know what to do****.* ***It depends on the money, on the time available, the social situation one enjoys,*** *on a complex of things.*	La sostanza… intanto, tu dirai che è una giustificazione, ma **l'ambiente fa tanto**, uno lo fa anche e per noi **o la mancanza di stimoli** e poi tutte queste questioni messe insieme, e pensi e ri**ﬂ**etti e dici oggi che faccio, ecc.! All'inizio l'uso può essere curiosità e poi non è solo curiosità, la conosci ed è troppo tardi / *The substance … you will say that it is a justification****, but the environment affects a lot****, one does it too and for us or* ***the lack of stimuli*** *and then all these issues, and you think and reflect and say today what I have done, etc.! At first, use can be curiosity and then it's not just curiosity, you know it and it's too late.*
External motivation	Ma se devo giocare, **gioco dei soldi per guadagnarne altri**, **di più**, quello era il mio pensiero: "non vedo l'ora, **adesso vado là e vinco**" / *But if I have to play,* ***I play money to earn more, more****, that was my thought: "I can't wait,* ***now I go there and win****."*	Io ho avuto delle ricadute con l'alcol, **perché è più accessibile** e perché non ritenevo opportuno e non ero attratto dall'idea di farmi di nuovo. / *I have had some relapses with alcohol,* ***because it is more accessible*** *and because I was not attracted to the idea of drug myself again.*

of the maintenance (p = .047), relapse (p = .038), control strategies (p = .001) and treatment (p = .001); also passivity was significantly greater in the narrative of desire than the narration of treatment (p = .016); moreover, passivity was significantly greater in the narrative of the loss of control than in the onset (p = .001), maintenance (p = .001), relapse (p = .001), desire (p = .048), control strategies (p = .001) and treatment (p = .001).

A further main effect of macro area [$F(7,322)=11.53$; p =.001] was found on the external locus that was significantly higher in the narration of the onset than in the definition of addiction (p = .001), maintenance (p = .001), relapse (p = .001), desire (p = .001), loss of control (p =.001), control strategies (p = .001) and treatment (p = .001); on the contrary, it was significantly lower in the definition of addiction with respect to relapse (p = .001) narratives.

A final main effect of macro area [$F(7,322)=3.46$; p = .001] was found on the external motivation that was significantly greater in the narration of the desire than in the definition of addiction (p = .001), the narration of the onset (p = .013), maintenance (p = .006), relapse (p = .001), loss of control (p = .026) and treatment (p = .001) (Figure 2).

Figure 2

Significant differences between the eight macro areas: addiction definition, onset, maintenance, relapse, desire, loss of control, control strategies, treatment on sense of agency (a), passivity (b), external locus of control (c), and external motivation (d).

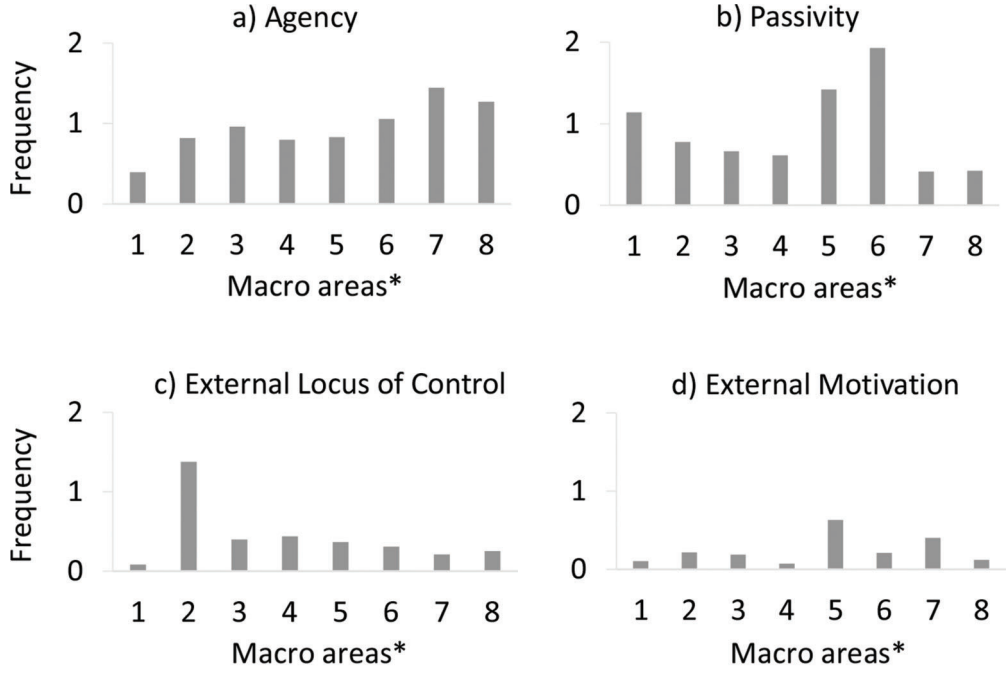
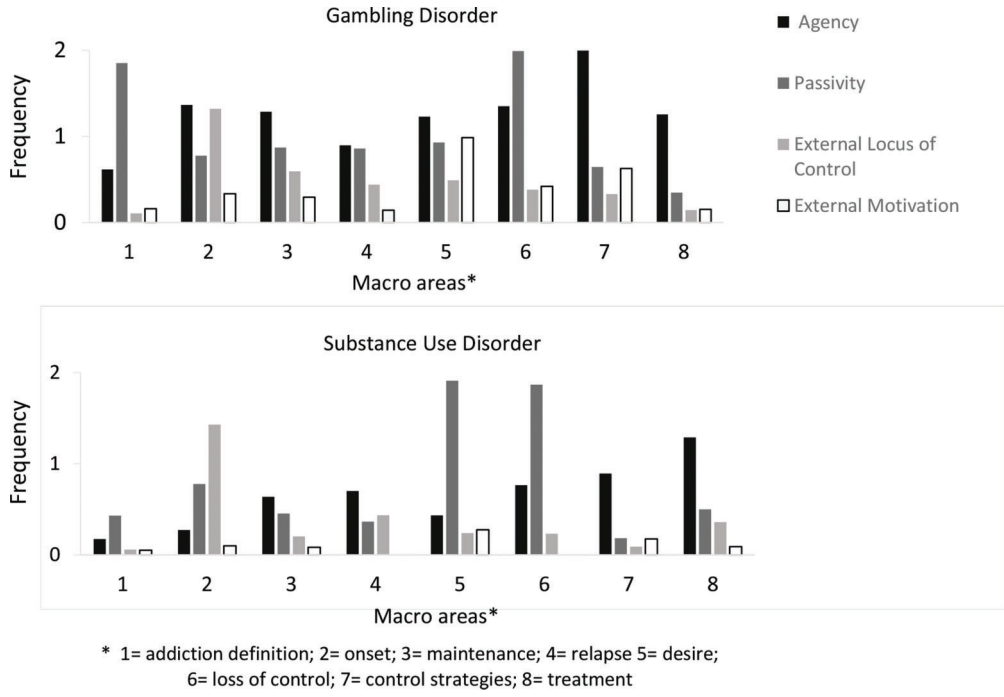


Figure 3
Significant interaction effect Group per macro-area in which Gambling Disorder group presented a higher passivity in the narration of definition of addiction and loss of control compared to the narration of the onset, maintenance, relapse, control strategies and treatment in the Substance Use Disorder group.



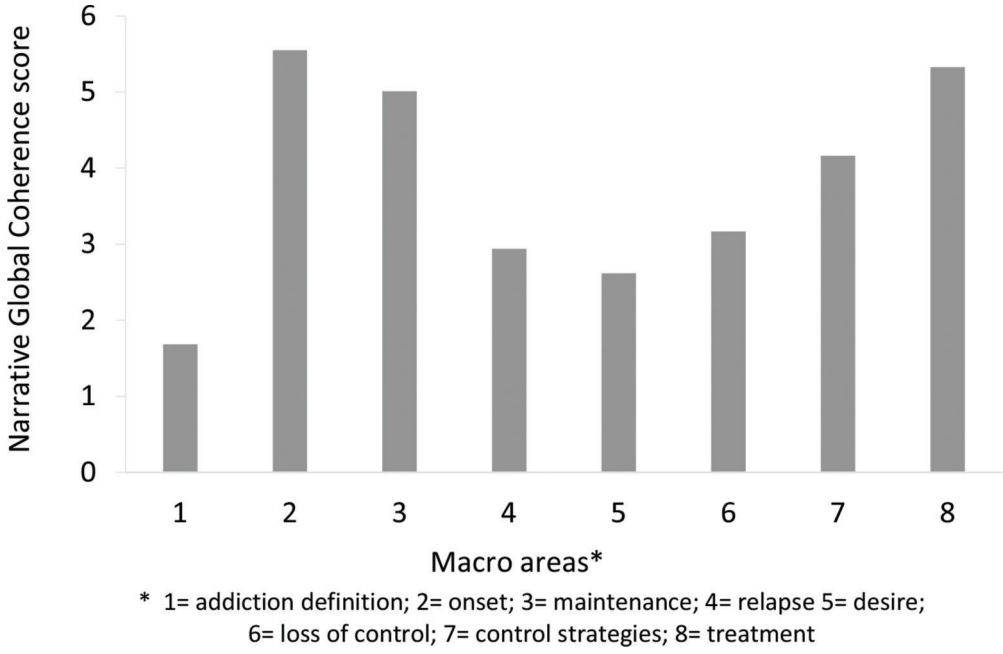
An interaction effect Group *per* macro area [$F(7,322)=3.87$; $p = .001$] was found: the GD group presented a higher passivity in the narration of definition of addiction and loss of control compared to the narration of the onset, maintenance, relapse, control strategies and treatment in the SUD group (Figure 3).

Differences in the global narrative coherence and self-future projection

Two-way ANOVAs Group *per* macro area on each narrative variable showed a main effect of macro area on global narrative coherence [$F(7,322)=31.13$ $p = .001$]: in both groups, it was higher during the narration of the addiction onset than in the narration of relapse ($p = .001$), desire ($p = .001$), loss of control ($p = .001$) and control strategies ($p = .001$); moreover, global narrative coherence was significantly higher during the narration of maintenance compared to the narration of the relapse ($p = .001$), desire ($p = .001$), and loss of control ($p = .001$); on the contrary, it was lower during the definition of the addiction than in the narration of onset ($p = .001$), maintenance ($p = .001$), relapse ($p = .028$), loss of control ($p = .001$), control strategies ($p = .001$) and treatment ($p = .001$). Moreover, global narrative coherence was significantly lower in the narration of the relapse with respect to the control strategies ($p = .002$) and treatment ($p = .001$); it was also lower during the narration of the desire than the narration of the control strategies ($p = .001$) and treatment ($p = .001$); it was lower during the narration of the loss of control than control

Figure 4

Overall analysis of narrative global coherence obtained summing up scores reported by Gambling Disorder group and Substance Use Disorder group. Figure shows significant differences between the eight macro -areas: addiction definition, onset, maintenance, relapse, desire, 6loss of control, control strategies, treatment on global narrative coherence. The most interesting effect showed a significant lower global narrative coherence during the narration of the desire than other phases.



strategies (p = .008) and treatment (p = .001); finally, the global coherence was significantly lower during the narration of the control strategies than in the treatment narrative (p = .002) (Figure 4).

The ANOVA on the self-future projection variable resulted with absent variance because of the very low percentage of utterances, almost absent, that referred to self-projection.

Discussion

The present study aimed to investigate through the multidimensional analysis of narratives about one's addictive condition, certain personality aspects, global narrative coherence, and self-projection in the future in subjects with GD and SUD.

As regards the personality aspects, in both groups the narration of the control strategies was characterized by the greater agency than definition and maintenance of the addiction. Consistently with the addiction condition, both groups showed a greater passivity in the narration of the definition of addiction and the loss of control. These results suggest that in all phases of addiction, except the definition

and the phase of loss of control in which the addiction seems to be defined concerning habituation and automatic processes, the subject believed himself or herself to be an agent of the described actions. This result is particularly relevant as it appears at odds with the biomedical hypothesis that defines addicted subjects as passive in the face of the object of their addiction from the first phases (Keane, 2002).

However, in both groups, we found a greater external locus in the narration of the onset phase and a greater external motivation in the narrative of desire. This suggests that, although in certain specific phases addicted subjects narrate themselves as agents, the subjects' actions seem to be mainly related to an external locus of control; that is, although they felt to be agents of their actions, they tended to attribute responsibility for their behaviour to external forces, such as people or other events. This discrepancy and this inclination to blame others for their own faults could be interpreted as a symptom of dissociative processes tied to poor self-integration, which according to several studies characterizes addictive disorders (Keane, 2002; Reith & Dobbie, 2012) and GD (Altavilla et al., 2020; Imperatori et al., 2017; Rogier et al., 2019; Schluter & Hodgins, 2019). In this regard, intervention protocols that, through narration, aim to increase the subjects' awareness of their self-efficacy in being able to control impulses could promote self-control and emotional regulation skills to favour integration processes of dissociated aspects of experience, as motivations and actions (Liotti & Farina, 2011).

Another interesting result worth to be highlighted concerns the greater external motivation found in the narration of control strategies; in line with the above, this finding opens the way to potential intervention protocols that could focus on soliciting internal motivations to help the subjects to regain control of their life. The elicitation of internal motivations, which encourage them to act based on their internal provisions and not to obtain external recognition, could favour the use of more effective control strategies as the subjects could feel stimulated and gratified by their self-efficacy (Bandura, 2000). To this aim, for example, the use of Motivational Interviewing designed for eliciting a person's own motivation and commitment to change has shown effectiveness in problem gambling treatment (e.g., Miller, 2014; Miller & Rollnick, 2013; Oei et al., 2010).

Moreover, the results showed group differences: the GD group presented a higher sense of agency, passivity, external locus of control and external motivation compared to the SUD group. This finding could be linked to a greater dissociation between cognition, emotions, motivations, and actions in behavioural addiction (compared to substance addiction) in which subjects struggle to recognize themselves as "addicts" for fear of social stigma. The fact that gamblers narrate themselves at the same time as agent and passive towards gambling and refer to external locus and motivations seems to indicate their intention to take greater distance from their condition compared to what happens in the SUD group. On the other side, this result could also be explained in the light of recent findings that show potential high heterogeneity between different GD categories regarding impulsivity, quality of

decision-making, perseveration and cognitive flexibility (Lorains et al., 2014; Sharman et al., 2019).

Concerning the narrative variables, the main results showed in both groups a low global narrative coherence in the narrative of the desire phase and the absence of self-projection into the future. The low global coherence score observed in the desire phase might suggest that in the craving process addicted subjects have more difficulty to represent and tell their own experience. This result could be linked to emotion dysregulation: subjects appeared to be unable to conceptualize their desire and the events linked to the relapse. In support of this interpretation, several studies (Rogier et al., 2020; Velotti, & Rogier, 2020) have shown that GDs are characterized by abnormal responses to pleasant stimuli: their propensity to act rashly in response to positive emotions statistically predict the severity of GD. This result seems to highlight a difficulty in managing positive emotions and impairments in the ability to self-control.

Moreover, several investigations employing different methods such as self-report and brain activation measures have highlighted that dysfunctional emotional regulation strategies have a key role in the clinical characterization of GD (e.g., Chu, 2015; Lobo et al., 2014; Navas et al., 2017; Suomi et al., 2014; Williams et al., 2012).

Interestingly, the global narrative coherence also in the narration of the control strategies resulted lower than of the narrative of the onset, maintenance/ chronicization and treatment phases. This result could be explained by the fact that, in the case of the narration of the onset and chronic phases, the subjects had time to elaborate more effective stories because they were linked to factual events (episodes, environments, etc., and therefore relatively easier to tell). For the control strategies, the processing, learning, familiarization, assimilation phases during the treatment are often uncertain and unsuccessful, and therefore the coherent structuring of the related story could be lower than those experienced in the long onset and chronicity phases. In this regard, further studies might focus analysis to investigate as this aspect could be influenced by the duration of treatment.

As mentioned in Introduction, narrative has been claimed to reveal aspects of the processes involved in the integration of events of the personal experiences in a coherent representation (Habermas & Bluck, 2000; Habermas & de Silveira, 2008; Herman, 2013; Köber & Habermas, 2017; Köber et al., 2019). From this point of view, narrative difficulties may result from problems in the cognitive organization of experience, as highlighted by psychopathological literature on clinical populations such as autism spectrum disorders (e.g., Ferretti et al., 2018; Jolliffe & Baron-Cohen, 2000) and schizophrenia (e.g., Adornetti & Ferretti, 2021). To this extent, our results concerning the narration of desire might suggest difficulties in the cognitive elaboration of the desiring dynamics for both groups of participants. Considering that cognitive and linguistic processes play a role in emotional and impulses regulation, as confirmed by numerous neuroimaging studies (e.g., Lieberman et al., 2007; Miller et al., 2008), our data highlight the importance of enhancing narrative

skills, particularly in the description of the desiring dynamics to encourage processes of emotional regulation and integration of craving experiences.

The second main result of the narrative analysis was the absence of self-projections into the future. It is important to highlight that the self-projection abilities (i.e., MTT) of the sample were not directly measured in the present research and only a couple of questions of the interview were designed to elicit future-oriented contents. Notwithstanding, it is a fact that the narrations produced by the subjects contained a low percentage of utterances that referred to self-projections into the future. Since certain investigations have reported difficulty in future-oriented mental time travel abilities of GD patients, resulting in a lack of consideration for the consequences of their own actions (e.g., Noël et al., 2013; Noël, Jaafari et al., 2017; Noël, Saeremans et al., 2017), the absence of temporal projections in our study may suggest that the subjects remained stuck into their condition of addiction by failing to organize their experiences in view of a future goal displaced by the here and now. This interpretation would be in line with a recent study, which suggested a reduced ability of MTT in addicted subjects and showed that this reduction is an important predictor of gambling severity (Nigro et al., 2019).

Additionally, a further aspect tied to the temporal representation of the self is related to self-control. Specifically, the absence of self-projection in time could be associated with the higher temporal discounting of the future (Ainslie, 1975, 2005; Strotz, 1956)—particularly the discounting of delayed gratification—and the high impulsivity of dependent subjects and addicted gamblers, who tend to prefer immediate rewards, albeit small, to the detriment of greater rewards, but postponed over time (Andrade & Petry, 2012, Bickel et al., 2012; Reynolds, 2006; Smith et al., 2014). The temporal discount and self-control seem to be tightly associated: certain studies showed that a greater ability to overcome the temporal discount favours greater self-control (Ainslie, 1992; Duckworth & Kern, 2011; Rachlin, 1974). In fact, the representation of the future in the psychological horizon of an individual is one of the most important elements in the processes of self-control and in the non-impulsive intertemporal choices in which the highest rewards are chosen even if postponed (Brocas & Carrillo, 2018; McCarroll, 2019). Consistently, self-projection into the future might be a key factor in preventing relapses and consequently in rehabilitation, as several investigations have highlighted (Athamneh et al., 2019; Bickel et al. 2017).

The possible limitations of the present study include the absence of data related to psychological assessment through standardized tests to evaluate the severity of the disorder and the association with psychological dimensions (e.g., alexithymia, attachment). The low number of the sample, especially the SUD sample, did not allow the correlational analysis to be carried out between personality aspects and narrative variables, similarly, the unbalanced gender composition of the sample did not allow to investigate gender differences in addicted subjects. In a future study, it could be useful to extend the sample to run further analyses. It should be also noted that we did not calculate the inter-rater reliability between evaluators for narrative

variables since discrepancies were resolved by discussion. This represents a further limitation of the present study. Furthermore, considering the use of a not validated semi-structured interview, interpretation of results should be considered with caution.

However, a strength of the present study is that of including participants in treatment with a diagnosis of Gambling Disorder. This strength differentiates the research from the majority of gambling studies that have used telephone and face-to-face interviews to recruit participants, as shown by a recent meta-analysis (Calado & Griffiths, 2016).

Conclusions

Through a multidimensional narrative analysis, the present study highlighted certain critical points on which to address the treatment of subjects with addiction. Specifically, the findings suggested the need to work on dissociated aspects of the self to favour the integration process of motivations and actions, increasing the awareness and sense of self-efficacy, especially with gamblers; to enhance global coherence in the narration of the craving to decrease emotional dysregulation typical of this phase; and, lastly, to improve the ability of self-projection over time. This last point could be particularly relevant in a rehabilitative intervention perspective, especially about intervention tools linked to the narrative dimension. Narrative is generally used in several psychological interventions to promote the re-elaboration of the narratives of the self and its relations with the environment. Nevertheless, the theoretical indications and results of the present study suggested a more radical approach to the role of narrative. The suggestion is to designing research-intervention protocols focused on the ability to understand, elaborate, and produce coherent stories, organized in space and time, where the roles and mental states of the different actors involved are integrated with identifiable causal factors of events. The idea is that, along with psychotherapy protocols, the development and enhancement of narrative skills could promote recovery from addiction.

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Submitted August 4, 2020; accepted February 8, 2021. This article was peer reviewed. All URLs were available at the time of submission.

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Competing interests: None reported (all authors).

Ethics approval: The Ethics Committee "Comitato Etico Unico Regionale" (CEUR) approved the study. Committee approval is in accordance with ethical guidelines detailed in the 1964 Helsinki Declaration or any of its succeeding amendments.

Acknowledgements and Funding Source(s): Funding was received from the Monitoring Centre on Addiction of Regione Friuli-Venezia Giulia–Azienda per l'Assistenza Sanitaria n.2–"Bassa Friulana–Isontina." The authors would like to thank the participants for taking part in this research. We are particularly grateful to the staffs of the public Services for Addiction involved in this research project for their generous support and collaboration.

Appendix

The Semi Structured Interview

The interviewer can make suggestions to invite the patient to reflect on specific aspects of this thematic area during his or her narration.

1. Definition of addiction
    - According to your personal experience, how would you describe the condition of addiction?
    - If you were asked to give a specific definition of addiction to someone who doesn't really know what it is, what would you say?
    - Addiction is commonly referred to as a disease. What do you think of this definition?
    - What meaning do you think the condition of addiction has had for you and your life?
2. Onset of addiction
    - What do you think are the reasons, the causes, that led to the start of your addiction problems?
3. Maintenance / chronicization of addiction
    - What would you say about the relationship between your addiction and the environment (parents, family, friends, places where you grew up and live, work environment ...)?
    - Do you think your environment has influenced your relationship with your addiction or contributed to its becoming chronic?
4. Relapses
    - Since when have you been in treatment have you had any relapse episodes or periods? If so, on what factors did it depend, what causes, what reasons do you think caused these relapses?
5. Desire/Craving
    - How was your desire for the object of addiction in your personal experience? What it was like before you started having a problem of addiction and during the problem before the treatment?

- What elements do you think were fundamental for you in the relationship you had with the object of desire? That is, was the desire linked to something particular, for example from certain situations, places, narratives? Did it depend more on internal aspects?

6. Loss of control

   - What do you feel was happening or happening immediately before playing (or using substances)? Is there some kind of decision? If so, is there any conflict between the desire to play (or to use substances) and the will not to? Or is it something automatic that starts? Something more and also different from these things?

7. Strategies of control during the treatment

   - What are the factors that you now feel are the most important and useful to maintain abstinence from your addiction?

8. Efficacy of the treatment

   - Do you think it will be logistically possible sooner or later to return to play (or drink, etc.) without also becoming addicted?