

GAMBLING FROM SEVEN PERSPECTIVES

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SUMMARY

In recent decades, it has been recognized that certain behaviors resemble addictions to alcohol and other psychoactive substances (PAS). Based on the results of research for such behaviors, many authors have found that it is justified to consider them addictions not related to PAS or "behavioral" addictions and that in the classifications of mental disorders should be in the same group with addictions related to PAS. Compulsive activities that may include gambling, Internet use, playing video games, sex, eating, and shopping based on epidemiological and neurobiological characteristics have similarities to PAS addictions. Recognition of clinical and neurobiological similarities between the described behaviors and behaviors related to PAS use resulted in the inclusion of gambling disorders in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), and online gaming disorders are classified as conditions for further research. In the 11th revision of the International Classification of Diseases, gambling and gaming disorders are involved in behavioral addictions. Authors presented problem of gambling through seven perspectives.

Key words: gambling - behavioral addictions - seven perspectives

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INTRODUCTION

In the last few decades, it has been recognized that certain behaviors resemble alcohol and other psychoactive substances (PAS) addictions. Based on the behaviors research results many authors have concluded that these addictions should be considered separate from PAS, i.e. as 'behavioral' addictions (Potenza 2006, Holden 2010, Karim & Chaudhri 2012), and be classified in the same group of mental disorders as addiction disorders related to PAS. Karim & Chaudhri (2012) state that compulsive activities, which may include gambling, Internet use, playing video games, sex, eating, and shopping disorders, resemble PAS addictions according to their epidemiological and neurobiological characteristics. Recognition of the clinical and neurobiological resemblance between the described behaviors and the PAS abuse-related behaviors has resulted in the inclusion of the gambling disorders in the category of the disorders related to psychoactive substances and addiction disorders in the fifth edition of the Diagnostic and statistical manual of mental disorders (DSM-5) of the American psychiatry association, while the Internet gaming disorder has been added to the list of conditions for further research (APA 2013). In the 11th revision of the International classification of diseases gambling and gaming disorders have been included as behavioral addictions (ICD-11) (WHO 2018).

BEHAVIORAL ADDICTION CHARACTERISTICS

According to DSM-5, addiction or PAS abuse disorder is a pathological pattern of behavior related to a

psychoactive substance and characterized by three groups of symptoms: cognitive, behavioral, and physiological. Behavioral addictions are defined as addictions not related to a psychoactive substance, but similar in some characteristics such as genetic and neurobiological basis, symptoms (yearning, loss of control), disease development, as well as treatment possibilities and prevention efforts. To this group of disorders belong gambling, gaming and internet addiction, overeating, exercise, sex, and shopping addiction. In DSM-5 classification only gambling addiction has been included in this group of disorders since there are enough data for this disorder only. Addiction behavior recognition, as well as the development of certain diagnostic criteria, is important in order to increase the disorder awareness and to enable further development of the treatment and prevention strategies. For most people gambling is just a leisure and rare activity that cannot bring their life into danger. However, the lifetime prevalence rate of gambling addiction is approximately 0.4-1% in the general population, amongst men around 0.6%, and amongst women 0.2%. Gambling experience can lead to numerous financial, legal, health problems, which makes it a significant public health issue. Gambling addiction can appear during adolescence or young adulthood, but also in middle age or even during old age. Gambling which begins during childhood or early adolescence is related to an increased rate of gambling addiction. It seems that gambling addiction appears in comorbidity with anti-social personality disorder, depression, and bipolar disorder, as well as psychoactive substance, especially alcohol, abuse disorder. Gambling addiction can be more frequent in some families, which is probably related to genetic factors as well as environmental

influence. Members of specific cultures participate more often in some types of gambling activities more than others. Gambling addiction is more common with men than with women. Persons with gambling addiction have an increased rate of comorbidity with other mental disorders such as psychoactive substance abuse, depression, anxiety disorder, and personality disorder. Moreover, some specific diagnoses such as tachycardia and angina pectoris are more common with persons with gambling addiction than in the general population.

DISEASE PERSPECTIVE

The disease perspective starts from the assumption that the mental disorder has been caused by the structural and/or functional changes that primarily occur in the central nervous system. Such a perspective is based on neuroscientific research of mental disorders, and it searches for the biological markers of the disorder. The disease concept has its history in modern medicine and the function of the way of the condition classification and its study. According to McHugh & Slavney (1988), the disease concept has certain advantages and disadvantages. The advantages include the possibility of the ontological approach (clinical syndrome – pathological process- etiology); production of the test model in terms of research direction and creating new knowledge; enhancement of research and multidisciplinary approach, as well as doctors and base scientists cooperation. The disease perspective has an impact on practice, which is that the disease should be prevented or cured (Jakovljević et al. 2012).

Behavioral addictions from this perspective could be observed as disease, illness, and sickness. Behavioral addictions such as gambling and gaming disorder are defined as mental disorders which are results of brain function and structure. The absence of praise theory tries to explain addiction-prone cases by damaged function of the brain areas which control impulsive decision making. Hypoactive praise systems in the striatum and medial prefrontal cortex (PFC) demand stronger stimuli such as PAS or gambling to be activated. Zois et al. (2017) find that the persons with gambling disorder, even without comorbidity with other addictions, have specific deficits in the frontal cortex, while Joutsa et al. (2011) have noted diffusely lower integrity of the white matter in several brain regions, which resembled earlier results with the persons addicted to PAS. Quintero Garzola (2019) in a well laid out study finds that several brain regions are included in gambling disorder: orbital frontal cortex, hippocampus/para-hippocampus, insular cortex, infra- limbic area, prefrontal cortex, prefrontal – subcortical net and striatum. In addition, he states that several neurotransmitters and receptors are involved, but finds that dopamine and glutamate are relevant for this disorder.

There is more and more evidence that there is a genetic predisposition to behavioral addictions. This theory is based on the fact that the individuals with the predisposition do not have an adequate number of dopamine receptors, or the dopamine /serotonin activity has been decreased in their case so that they have difficulty to achieve a certain level of pleasure. In order to achieve satisfactory pleasure sensation, they need engaged behaviors that stimulate dopamine release, thus giving them the requested pleasure, but also rendering them at greater risk of addiction behavior development. Brain does not seem to differentiate between dopamine release as a consequence of psychoactive substance abuse or certain experience. Any pleasant experience is related to increased dopamine release into the nucleus accumbens and ventral tegmental area. If a medicine or certain pathological behavior repeatedly hyperstimulate dopamine release, it leads to neuroadaptation in order to decrease the level of dopamine receptors and sustain homeostasis in the situations when dopamine release is too high. Neuroadaptation leads to long term changes which become addiction feature. For a certain part of the population, some pathological behaviors can lead to the same dopamine release as in cases of psychoactive substance abuse, which causes changes in brain areas linked with the prize system, emotions and decision making, and addiction behavior development. Gambling studies suggest that increased excitement and risky behavior can be linked to the noradrenergic system, i.e. increased level of norepinephrine metabolites. Taking into consideration all the above, pharmacological therapy of pathological gambling includes opiate antagonists, mood stabilizers, and selective inhibitors of serotonin re-deposit.

COGNITIVE –AXIOLOGICAL PERSPECTIVE

This perspective is directed towards what one thinks, perceives, and learns or estimates as valuable, i.e. which ideas and values in life should be followed. All that we are is the result of our thoughts and knowledge about us and the world. What we think of ourselves is what determines or directs our destiny, thus all psychological stressors are cognitively mediated. (Jakovljević et al. 2012). Gambling behavior is the result of various motivations that the person gambling is led by. These persons feature special motivational profiles, and the gambling motivations are linked to the cognitive distortions development. These motivations force the individuals to practice and repeat the gambling experience, which can lead to cognitive distortions development, thus enlarging the gambling problem. In gambling motivation, there are individual differences, depending on the intensity and seriousness of the gambling practice. Gambling motivations are an important predictor of cognitive distortions. This

connection renders a hypothesis that persons who have more gambling motivations are more likely to develop and sustain cognitive distortions during gambling (Mathieu et al. 2018).

The persons who gamble show the tendency to support many wrong or irrational convictions which contribute to risky decision making and excessive gambling. They develop subjective interpretations and understanding of how gambling works out with the existing tendency to adapt to personal schemes, experience, and gambling motivations. They often do not consider or do not want to consider the truthfulness of the convictions because they often use them as their gambling excuse. Educating the persons who gamble about their decision-making, as well as encouraging them to think analytically could help to weaken the strength with which they support their wrong gambling convictions (Amstrong et al. 2020). Several studies have shown that less analytical and more intuitive thinking is linked to the wrong gambling convictions and problems.

The cognitive-axiological perspective of behavioral addiction has its footing in positive results of the treatment using cognitive-behavioral therapy (KBT). Metanalysis of the behavioral approach to the gambling disorder treatment shows that the use of these methods could result in significant improvements (Petry, Ginley & Rash 2017). Positive effects could be maintained during long-term observation. Cognitive treatments focus on modification of the dysfunctional thoughts which sustain the desire to gamble in persons with the gambling problem (Pallesen et al. 2005).

SPIRITUAL PERSPECTIVE

Spirituality has wide and various definitions and interpretations. It is the term that relates to existential and transcendental aspects of life which contribute to the sense of hope, purpose and meaning, coherence and connection with the others (Spaniol 2001). The spiritual dimension is the source of hope, unconditional love, inner peace, power, purpose and meaning, and connecting and establishing a new identity (Jakovljević 2014). Spaniol (2001) states that spirituality includes relationship, relationship with somebody or something outside ourselves, somebody or something that sustains and comforts us, leading our decision making, forgiving our imperfections, and celebrating our life journey. That somebody or something can be another person, spiritual leader, faith in human kindness, or faith in God. Spirituality can contribute to the healing of human experience and serve as a motivation for attitudes and behaviors. Studies show that gambling gives hope and opportunity for a better life, which is one of the reasons for the continued gambling (Clarke et al. 2006). This dimension of gambling is important from the aspect of treatment and recovery from gambling. Spirituality

represents 'profound personal experience' which is often connected with a personal search for rediscovery of one's own essence or self. This search Grof (2000) describes a holotropic state, i.e. spiritual life-changing event which is related to the person's reconnecting with the creative principle. Gambling experience can also be described as a holotropic state. According to some authors, gambling has deep roots in a religious ritual and is weaved in basic forms of spirituality (Grunfeld, Zangehen & Diakouloukas 2008). Gambling renders a fantasy of possibility to control and predict events, victory, feeling of power, and controlling other persons. Moreover, gambling is described as a way of releasing accumulated guilt, as punishment for a certain behavior, fear of feeling of pleasure, a fanatic belief in winning as continuance of early omnipotence. Gambling can serve as religion replacement. Some studies show that there is a correlation between the delusion of gambling and religiousness (Kim et al. 2018). Mystic dimension of gambling includes changed states of consciousness and dissociation, which are stated to come from intensive gambling, especially when playing very repeated games like on amusement arcade machines (Binde 2007). Several studies show that persons doing pathological gambling experience dissociate states, changed consciousness experiences such as 'reality escape', trance-like states, or states of ecstasy (Ticker, Rock & Clark 2016, Schluet & Hodgins 2019). It is considered that gambling affects the dimensions of an individual's spiritual and religious functioning. Kim et al. (2018) find that there is a complex relationship between gambling and spirituality, i.e. religion. This relationship is mostly observed through the protective aspect of the dimensions of spirituality and religion. Gambling can be related to spiritual and religious conflicts such as moral conflict, interpersonal, conflict linked with the ultimate purpose, and doubt. Many religions consider gambling through the aspect of morality as well as something negative, with the tendency to avoid those who gamble. Thus, persons with a gambling problem can get into conflict with their religion and spirituality, which can lead to further distress (Grant & Grubbs 2019).

BEHAVIORAL PERSPECTIVE

The behavioral perspective focuses on what, how, and with what purpose a person does (Jakovljević, 2014). Higgins, Heil & Lussier (2004) state that reinforcement plays an important role in development, maintaining, and recovery from the addiction disorder. Addiction related to PAS is considered a behavioral disorder that begins when substance amplifiers take over control of a significant amount of an individual's behavior. It is a form of excessive behavior that occurs when certain other activities are also expected. Gambling can be observed as disproportional and excessive behavior which is caused by some addiction.

The common feature is that initial exposure to stimulating reinforcement (e.g. euphoria, money) is followed by progressive escalation of the behavior which has caused it. Behavior which results in the availability of these reinforcements can in the end dominate the repertoire of the behaviors simply because these stimuli act as stronger amplifiers than others available in the individual's environment (Winger et al. 2005). Behavioral explanations of the behavior related to gambling are based on the theory of instrumental conditioning. Gambling appeal is linked to an irregular schedule of reinforcements occurrence, i.e. prize-winning. Most lottery games have prizes in schedule with random proportions. It is possible to win a prize the first time or after a few attempts. Schedules of winning (positive reinforcement) are so programmed that there is a possibility of winning, but one never knows after how many attempts. This precisely is what causes a high level of behavior consistency with people, they will play despite the previous loss because there is a chance of winning. This form of reinforcement leads to behavior that is very persistent and long-lasting (Knapp 1997).

The behavioral pattern of gambling suggested by Weatherly & Dixon (2007) is an integrative behavioral-analytical pattern which is based on the idea that gambling is linked to the decision making process. Discounting of the postponed consequences affects the decision making, which can promote gambling and play a role in sustaining the risky behavior. Persons with the developed gambling addiction decrease postponed gambling consequences. Certain event postulations or operations establish an act towards the change of the consequences, thus sustaining gambling behavior. Change of the consequences within this contextual medium makes the consequence a stronger amplifier, which leads to changes in discounting. Changes in discounting could be linked to one certain gambling consequence – positive reinforcement by winning money. This pattern also includes verbal behavior which is considered as an important aspect of sustaining and controlling of the gambling behavior. Verbal rules can contribute to gambling both as discriminatory gambling stimulus or serving for event postulations or operations establishment, and leading to changes in individual discounting of the postponed consequences.

DIMENSIONAL OR PERSONAL PERSPECTIVE

Dimensional perspective relates to what or who someone is, personality, frailty and resilience, and growth and development potential. The pattern of frailty, resilience, or diathesis-stress pattern is based on the fact that some individuals are more sensitive to mental discomforts, and it includes the following

conceptual triad: potential deficit in personal functioning, distress, and maladaptive response (Jakovljević et al. 2012). Several factors that can predispose gambling addiction development are mentioned in the literature. Some of them are related to growing up, such as death of a parent, separation, divorce, being abandoned by a parent before the age of 15, or parent negligence (absence, inconsistency, or roughness), and other factors that can contribute to a person's vulnerability or resilience (Wardle et al. 2018). These factors, along with genetic, biological, and other psychosocial factors, can be the foundation of personality traits development, the way we handle stressful situations, and/or the development of certain mental health conditions.

Study results refer to the connection between certain personality traits and gambling, as well as the existence of comorbidity with different personality disorders and gambling addiction (Lorains, Cowlshaw & Thomas 201, Odlaug & Chamberlain 2014, Brown, Allen & Dowling 2015, Vaddiparti & Cottler 2017). Regarding the personality traits, studies show a high rate of impulsiveness and novelty seeking (Michalczuk et al. 2011, Hodgins & Holub 2015). Impulsiveness is linked to many mental disorders, including personality disorders, attention deficit, bipolar disorder, eating disorder, substance abuse, and gambling. In DSM-5 (2013) impulsiveness as an aspect trait of personality disorder is classed in the domain of disinhibition. It is widely defined as an affective reaction, immediate reacting without planning, and considering the result. It is a tendency to react fast in decision making or behavior with a lack of caution. Impulsiveness includes difficulty in creating and realizing plans, a sense of urgency, and self-inflicting behavior under emotional stress. Impulsiveness is excessively unfounded, risky, and inappropriate behavior which leads to negative results. Impulsiveness in persons with gambling disorder is linked to significant motor inhibition damage and attention inhibition (Ioannidis et al. 2019). Aspects of impulsiveness traits have been studied by the use of art techniques. It has been concluded that persons with a high level of impulsiveness started a new game much faster and had increased activation in the ventral striatum and amygdala after winning (Shao et al. 2013). The fact has been established that impulsiveness traits are linked to divergent coding of winning within the brain areas related to dopaminergic function and prize. Shao et al. (2013) state that personality traits, which are the base of vulnerability for the gambling problem, can communicate with the structural characteristics of the slot machines system, thus increasing the possibility of continuing the game.

Savage, Slutske & Martin (2014) emphasize the connection between individual personality differences with the various gambling activities and the importance of the multivariate for the person of the directed

approach in characterizing of the personality at the gambling phenomenon development. Various gambling activities are linked to a unique configuration of the behavior control level (impulsiveness and sensation seeking), positive emotionality (interpersonal effectiveness and ambitiousness) or negative emotionality (antagonism and aggression), and magic thinking (superstition and promoting illogical convictions). Low behavior control in the context of the high negative emotionality and magic thinking has standardized extensive and versatile gamblers. Average behavior control in the context of high negative emotionality and magic thinking has standardized those who primarily gambled on non-strategic lottery games. Low behavior control in the context of high positive emotionality and low magic thinking has standardized those who primarily gambled on strategic skill games. It is only by applying the approach directed on the person and by the use of whole personality estimate that important combinations of personality traits related to heterogenic, manifold gambling phenomenon can be discovered (Savage, Slutske & Martin 2014).

Several subtypes of personality related to the gambling problem are stated in literature (Ledgerwood & Petry 2010). In the pattern given by Blaszczynski & Nower (2002), it is stated that personality subtypes that are behaviorally conditioned, emotionally vulnerable, and associated with impulsiveness predispose individuals for gambling addiction development. Emotionally vulnerable persons with a high level of self-criticism, negative way of confrontation such as avoiding, and negative emotionality could be more at risk of developing gambling disorder (Pascual-Leone et al. 2011, Afifi et al. 2010). Impulsiveness, lack of persistence could be important predictors of the seriousness of pathological gambling disorder. Dysregulation of emotions and lack of adaptable strategies of emotion regulation have partly explained such relation. Training in emotion regulation ability seems to be strategically useful in the treatment of gambling addicts with pathological personality traits.

NARRATIVE PERSPECTIVE

The narrative perspective is focused on life story which enables us to better understand the meaning of thoughts, feelings, and behavior. Our identity is formed by narratives or stories. We give our lives and world meaning based on the stories we tell ourselves or each other. We grow up on different life stories, we learn how to live and behave through stories. If someone lives a story in which helplessness dominates he will probably think of himself as a helpless person. Even if numerous events do not fit in his story in his life, those events do not have to be a part of what he thinks his life is. Since people do not just tell stories but also live them,

problematic stories make them blind to the meaning of all other contexts except the ones saturated with the problem. In other words, problems come between people and their knowledge of themselves so that they lose from sight their favorite identity traits. What stops people from achieving their goals is that they are stuck in the behavior pattern which is always repeated, during which they put more and more effort and apply the same unsuccessful solution.

Gambling experience as a disorder is not an isolated condition but a component of understanding of someone's life. According to this some of the main processes because of which this disorder is developed and sustained can arise from questioning of the life story narrative. Personal narratives are invited to create a coherent sense of self, connecting mutually different aspects of someone's life in a way that makes the whole meaning in the narrative about the self.

Narratives of gamblers and their families enable us to understand the social value of the process of 'addict's' identity internalization. Considering the gambling problem as a disease makes it possible for gambler's behavior, thoughts, and feelings to become comprehensible. Consideration of the disease as opposed to 'moral' or 'criminal' view of the gambling issue, as well as to feelings of guilt and anger. Thus the gambling issue can be interpreted, not as a trait of moral weakness and neglecting the rules and affective relationships, but as the predisposition for 'addict identity', for which people are not responsible. Narrative 'I am sick' or the role of the sick tells us that the individual must be understood and accepted in his 'human weakness', directed and taken care of. This narrative can be useful in some treatment patterns in which the individual with the gambling problem is symbolized as a vulnerable child. The narrative of the person with the gambling issue can be a narrative of an individual who is 'out of himself', for whom life has begun and ended with the thoughts directed to gambling. In this narrative gambling is only something wrong and destructive for their own identity and family life. Gambling appears as a catastrophe that hits a man out of nowhere, as something external, out of control, but capable of overpowering any aspect of someone's life. However, this narrative lacks the life story before the gambling problem appeared, as well as the psychological and sociocultural aspects of the narrative of the individual with the gambling problem (Venuleo & Marinaci 2017).

Gambling is an exciting leisure activity which offers moving away from everyday life, but also represents an illusion of change and lack of confidence of the person gambling in his own ability to be efficient in his life. Illusion of the easy win and excessive investment in gambling leads to the person's loss of awareness that he will lose. Narrative of the illusion of approaching everything all at once, the opportunity to get rich and

achieve success without any need for effort, skill, and responsibility leads to individuals' passive hopes for sudden luck mirage. Gambling renders the dream of the sudden win achievable giving the person gambling an illusion that he is very efficient.

SYSTEMATIC PERSPECTIVE

Gambling has numerous forms of lottery games, sport betting shops sponsored by the state, casinos with various slot machines, wheels and roulettes, and different forms of electronic gambling helped by the continuous development of technology. Along with the many gambling activities, individuals show either continuity or discreet difficulties in facing their desires to gamble. These difficulties become significant when gambling becomes the main focus of the existence of those who gamble, and when they lead to serious destructive consequences. There are numerous studies and approaches which try to explain how gambling as a game develops in some individuals into a problem with serious consequences. Most of the approaches are individualistic and consider only some aspects of this complex phenomenon, such as directing to dysfunctional aspects of cognition, deficiency of emotional signals and facing emotional difficulties, motivational dysregulation with the focus on prize, personality, impulsiveness and compulsiveness, neurobiological aspects of gambling and connected characteristics of decision making. Moreover, various patterns of understanding of gambling problem have been developed, such as mathematical pattern based on rational consideration of costs and benefits, biopsychosocial pattern which includes the interaction of biological, psychological and social factors, or wider 'pattern of roads' by Blaszczynski & Nower (2002) which assimilates predisposing factors, individual differences, social milieu, cognitive characteristics and emotional coloring of the context in explanation of impulsiveness in decision making in the context of gambling disorder (Nussbaum et al. 2011). On the other hand, sociological theories emphasize that social postulations affect not only who and on what gambles but also what excuses are used in regulation of gambling, who can offer gambling, and how acceptable it is (Sallaz 2006). In social theories based on applying system theory gambling is considered as a system that should be a part of the social system, social mechanisms are observed, as well as structures and processes which are bases of gambling (Egerer et al. 2020).

Opposed to the individualistic approach, the systematic perspective considers gambling as a complex phenomenon for whose understanding it is essential to integrate psychological, neuroscientific, genetic, anthropological, ethnographic, cultural, sociological, philosophical, religious, spiritual, and other knowledge and experience, and connect them transdisciplinary in a way which offers unique frame for more comprehensive

understanding of gambling as a game that can have destructive consequences. The systematic perspective of gambling addiction is more than system theory itself.

Connecting knowledge and experience of different disciplines and levels, integrating multiple perspectives and approaches enhances a more complete understanding of gambling and enables a more comprehensive answer to the gambling problem. Systematic perspective and transdisciplinary approach enable better understanding of etiology, extent and manifestations of the gambling disorder, more efficient ways of early recognition of the risk for gambling disorder, designing prevention activities and more efficient interventions of treatment of the persons with gambling addiction problem.

CONCLUSION

In the last few years scientific and general public pays more attention to behaviors that have characteristics of the behaviors found with addictions to psychoactive substances. Gambling and gambling addiction are identified as one of the newly risen public health problems worldwide. In the context of the growing liberalization of the gambling market and the development of electronic forms of gambling, there is an increase in the number of people with a gambling problem and wider social consequences of gambling. Gambling is a very wide phenomenon and in order to understand the problems related to gambling activities it is essential to establish transdisciplinary research studies and practices, and invest more efforts in integration of knowledge and experience of different disciplines aiming at the development of prevention interventions of gambling addiction and more efficient treatment

Contribution of individual authors:

Almerisa Tufekčić: conception and design of the manuscript, collecting data and literature searches, analyses and interpretation of literature, manuscript preparation and writing the paper; and gave final approval of the version to be submitted.

Esmina Avdibegović: made substantial contributions to conception and design, literature searches, participated in revising the manuscript and gave final approval of the version to be submitted.

Mevludin Hasanović: made substantial contributions to conception and design, literature searches, participated in revising the manuscript and gave final approval of the version to be submitted.

Izet Pajević: made substantial contributions to conception and design, and interpretation of data, participated in revising the manuscript and gave final approval of the version to be submitted.

Miro Jakovljević: made substantial contributions to conception and design, and interpretation of data, participated in revising the manuscript and gave final approval of the version to be submitted.

Acknowledgements: None.

Conflict of interest: None to declare.

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