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Abstract

Impulse-control disorders such as pathological gambling, sexual addiction, and compulsive shopping cause enormous suffering in people's lives. The feeling-state theory of impulse-control disorders postulates that these disorders are created when intense positive feelings become linked with specific behaviors. The effect of this linkage is that, to generate the same feeling, the person compulsively reenacts the behavior related to that original positive-feeling event, even if detrimental to his or her own well-being. This reenactment creates the impulse-control disorder. The therapy described in this article is the Impulse-Control Disorder Protocol (ICDP), which uses a modified form of eye movement desensitization and reprocessing (EMDR) to address these fixations. A case study of an individual with pathological gambling illustrates the application of ICDP.

Keywords

impulse-control disorders, EMDR, compulsion, gambling, sexual addiction

Impulse-control disorders (ICDs) are defined by the American Psychiatric Association (2000) as "the failure to resist an impulse, drive, or temptation to perform an act that is harmful to the person or to others." Typically the "individual feels an increasing sense of tension or arousal before committing the act, and then experiences pleasure, gratification, or relief at the time of committing the act" (p. 609). ICDs include kleptomania, pyromania, pathological gambling, and trichotillomania (American Psychiatric Association, 2000) as well as "sexual addiction" (Allen & Hollander, 2006). A diagnosis of ICD is not given when an individual has been diagnosed with another disorder, and the impulsive behavior is seen as a symptom of that other disorder (e.g., attention deficit hyperactivity disorder, borderline personality disorder, pedophilia, substance abuse/dependency, etc.). The significant consequences of ICDs range from debt, bankruptcy, broken relationships, and illegal behavior to suicide (Dittmar, 2004; Petry, 2004; Schneider, 2004).

Prevalence

The prevalence rate of pathological gambling in North America has been estimated at a lifetime rate of 1.6% and past-year rate of 1.14% (Shaffer, Hall, & Vander Bilt, 1999). No population studies exist of either compulsive buying or sexual addiction. Estimates of the rate of compulsive buying in the general population range from a low of 2% to as high as 16% (Dittmar, 2005). Sexual addiction was estimated by Carnes (Schneider, 2004) to have a prevalence rate of 6%.

Treatment

Cognitive–behavioral therapy approaches have primarily been used in the treatment of pathological gambling and sexual addiction (Petry, 2004; Schneider, 2004). In a randomized clinical trial with 230 pathological gamblers, Petry, Stinson, and Grant (2004) found a significant reduction in gambling behavior after eight cognitive–behavioral therapy sessions that reinforced nongambling, with effects maintained at 1-year follow-up. Although no randomized controlled studies of sexual addiction treatment have been conducted, anecdotal reports suggest good outcomes following a cognitive–behavioral approach combined with 12-step work (Schneider, 2004). A case study described the successful application of eye movement desensitization and reprocessing (EMDR) in treating sexual addiction by targeting traumatic experiences and relapse prevention (Cox & Howard, 2007).

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Etiology

Explanations for the etiology of ICDs range from the biological (Blum et al., 2000; Eisen et al., 1998) to the psychological (Cox & Howard, 2007; Petry, 2004). Scherrer et al. (2007) found that the number of traumatic events increased the risk for a gambling disorder and that serious childhood neglect was positively correlated with pathological gambling. Carnes (1991) noted that inpatients in a sexual addiction program reported histories of sexual, physical, and emotional abuse.

Schmitz (2005) proposed a biologically based theory of the etiology of ICDs or what he calls "behavioral addictions." Behavioral addictions are hypothesized as using the same neurological reward/pleasure pathways as do substance-related disorders. These specific neurocircuits have been identified as part of the reward/pleasure pathways involved in the reinforcing properties of drugs of abuse and drug craving. The neurotransmitters dopamine, opioid peptides, glutamate, and gamma-aminobutyric acid (GABA) are integral parts of the reward pathways (Koob, 1992). Substances such as cocaine and alcohol stimulate the neurotransmitters in these pathways so that the individual experiences intense reward/pleasure. In the case of addictive behaviors, the reward-based behaviors have evolved to states of dyscontrol (Schmidt, 2005).

The reward deficiency hypothesis (Becker, 1999; Comings & Blum, 2000) posits that individuals with malfunctions in the reward/pleasure neurocircuits are not satisfied with natural rewards such as food and sex. Rather, they seek unnatural rewards such as illicit drugs and thrill-seeking to overcome the neurocircuit deficiencies. ICDs such as gambling are understood to stimulate the same neurocircuits that illicit drugs and alcohol stimulate. For example, Schmitz (2005) stated that the ICD kleptomania is similar to substance-related disorders in that the irresistible urge to steal resembles the cravings associated with chemical dependency. In addition, he noted the thrill of stealing has been reported to be similar to the high of drugs and alcohol. Other ICDs that are also hypothesized as having their basis in the reward pathways are pyromania, compulsive buying, unmanageable Internet use, trichotillomania, binge-eating disorder, and sexual compulsions (Schmitz, 2005). For treatment using this biological-based model, cognitive–behavioral therapy, 12-step support groups, medication, and even psychosurgeries are suggested.

Margaron (2004) argued that the biologically based explanations are too reductionistic and that pleasure should be understood as the result of complex mental processes involving the interaction of the body with the environment rather than a fixed biological predisposition. For example, if a person is tired, rest is pleasure; if one is hungry, food is a pleasure. In addictive behaviors, pleasure includes the thrill of the search for prohibited substance and the sharing of emotional experiences with others. Addiction is considered the result of the interaction of the emotional context of the addictive behavior with the effects of the addictive substance itself. Relapse is caused by the memories of the addictive experience being activated by either internal or external conditions. Preventing relapse involves helping people integrate socially into a drug-free environment.

Whereas Margaron (2004) proposed a wide range of pleasurable memories that could compose the memory of addiction, Boening (2001) narrowed this range of memories down to a memory of loss of control and a drug-specific memory of the substance's effects. This particular memory is called the addiction memory (AM). It is postulated to be an episodic type of memory, similar to that which Van der Kolk, Burbridge, and Suzuki (1997) describe as central to posttraumatic stress disorder (PTSD). The activation of the AM is thought to lead to drug-taking behavior.

EMDR treatment of the addiction memory was investigated in a randomized clinical trial with 30 patients addicted to alcohol (Hase, Schallmayer, & Sack, 2008). Treatment as usual (TAU) was compared with TAU plus 2 sessions of EMDR. The specific EMDR targets were the memories of relapse or memories of intense cravings as they are likely to be events that were activated by an AM. Alcohol dependency was measured by the Munchner-Alkoholismus Test (Feuerlein, Ringer, Kufner, & Antons, 1979) and the Mini-DIPS (Diagnostisches Kurz-Interview bei psychischen Störungen; Margraf, 1994). Alcohol craving was assessed with the OCDS (Obsessive Compulsive Drinking Scale; Mann & Ackermann, 2000). At posttreatment and 1-month follow-up, TAU plus EMDR resulted in significantly greater declines in craving and relapse.

The focus of the Margaron (2004), Boening (2001), and Hase et al. (2008) studies is on the association between memory, pleasure, and substance addiction. Margaron discussed how different behaviors can create pleasure whereas Boening and Hase et al. considered the AM to be like an episodic memory resembling the episodic memory of trauma. These theories of addictive behaviors propose that performance of the compulsive behavior will trigger cravings and urges to overindulge in that activity. Thus, managing and controlling behavior is the goal of treatment, with abstinence viewed as essential.

The Feeling-State Theory of Impulse-Control Disorders

The feeling-state theory (FST) of ICDs was developed by this author. The theory postulates that ICDs are created when positive feelings, linked with specific objects or behavior, form a state-dependent memory. This state-dependent memory, composed of feelings and the event, form a unit called a "feeling-state" (FS). The FS is hypothesized to be the cause of ICDs.

The term *feelings* used in this article refers not only to emotions such as joy or anger but also to the total complex of sensations, emotions, and thoughts. For example, when a person says, "I feel strong" there is a complex of physiological sensations as well as emotions that are linked to this thought. So for the purpose of this article, the term *feelings* is used to indicate

the totality of sensations, emotions, and thoughts related to a particular event.

The creation of a FS is proposed to be similar to the way in which traumatic memories are fixated. Because of the intense psychophysiological arousal that occurs during traumatic events, memories of events can be created that are not altered or processed as normal memories are. This fixation of feeling is a central part of the traumatic process (van der Kolk, 1996). "This capacity [of long term potentiation of memory traces] helps organisms evaluate the importance of sensory input in proportion to how strongly the associated memory traces are laid down" (van der Kolk, 1996, p. 291). Although van der Kolk is referring to sensory input from traumatic experiences, it is logical to assume that intensely pleasurable experiences would also be evaluated in proportion to their intensity level. In other words, it is not the positive or negative quality of the feelings that is important in creating a state-dependent memory but the intensity of the feelings.

Support for broadening the state-dependent fixation theory of memory to include memories and feelings, other than those associated with trauma, is given in a variety of studies. These studies include the state-dependent effects on memory in relationship to alcohol (Goodwin, Powell, Bremer, Hoine, & Stern, 1969; Weingartner & Faillace, 1971), mood (Kenealy, 1997), and fear (Lang, Craske, Brown, & Ghaneian, 2001). The existence of state-dependent memory in other psychophysiological states means that trauma is not the only experience that can induce state-dependent memories. This being true, it is logical and reasonable to expect that the psychophysiological states induced by feelings such as excitement, joy, and wholeness, could also produce state-dependent memories.

Feeling-States

In the FST, the term *feeling-state* (FS) refers to the entire psycho-physiological arousal of the body and its connection with the memory of a specific behavior. In other words, the feeling-state is a unit that is composed of the feelings (sensations, emotions, and thoughts as described above) associated with the behavior plus the memory of the behavior itself. FST proposes that the FS unit composed of feelings and memory of the behavior leads to the impulse-control problems. For example, an FS composed of the complex of sensations, emotions, and thoughts of the feeling "I'm a winner" and the memory of gambling could create a gambling compulsion.

The postulate that FSs are created through the interaction between a person's psychological state and an event has several important consequences for the composition of FSs. One consequence is that any feeling can be connected with any behavior. There is no specific relationship necessary between any particular feeling and any specific behavior. For example, an FS related to gambling might contain the feeling of "I'm a winner." On the other hand, the FS might contain a totally different feeling such as "Daddy is proud of me." This means that one type of behavior, for example, gambling, can be the result of many different FSs. Another consequence of how FSs are created is that any behavior can become an ICD. Normal behaviors such as eating ice cream, shopping, playing video games, or virtually any behavior at all can be incorporated into an FS that causes an ICD. Still another consequence is that, once created, the FS continues to exist, with the same feelings and behavior as when the FS was originally formed. Thus, a 40-year-old person whose FS involves feeling like the "Big man on campus" when he spends money will still be acting like the adolescent he was when the FS was created whenever the FS is activated.

Although it may seem counterintuitive that a positive feeling can be linked with an apparently negative behavior, it is important to understand that the behavior only becomes negative because of this fixated connection. For example, shopping is not a negative behavior. However, an FS composed of the feeling "I'm high status" with the behavior of shopping may well create a "shopping monster." This fixated linkage between a positive feeling and a behavior can turn the most innocent of behaviors into an out-of-control behavior.

Risk Factors for Developing an Impulse-Control Disorder

FST postulates that a person's psychological history has an important influence on the formation of ICDs. Although ICDs are thought to be created from positive events, they require an underlying negative belief for the creation of the ICD. For example, a person who believes he is a loser may have a very intense reaction to the experience of winning a large amount of money at poker. It is this intensified reaction that creates the FS that links the feeling of winning with the experiences of playing poker. So FST hypothesizes that the more a person desires a particular feeling, the more at risk he or she is to having an ICD. In other words, a person's psychological background provides the reason and the energy to create an FS that results in an ICD. The FST is illustrated in Figure 1.

Once an FS is created, it can be activated by either internal or external factors. The sight of a poker table or a need to belong, for example, can trigger the urge to gamble (see Figure 2).

Beliefs and the Impulse-Control Disorder

The FST hypothesizes that there are three sets of beliefs associated with ICDs. The first set is the preexisting negative beliefs that laid the foundation for the creation of the FS—for example, "I'm a loser." These negative beliefs may be difficult to identify before the FS is processed because they may be covered up by the positive feelings generated by the FS. The second set of beliefs is the apparently positive beliefs that are created during the positive events. For example, a gambler may form the belief "I'm a winner" from a large win. This positive belief is then embedded in the FS that causes the compulsive behavior.

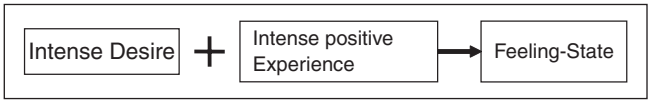

Figure 1. Creation of a feeling-state

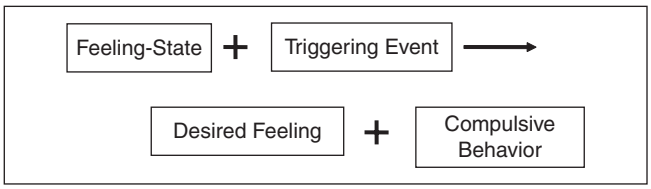

Figure 2. Activation of the compulsive behavior

A third set of beliefs are the negative beliefs created from the out-of-control behavior itself. For example, a person may develop the belief "I mess up everything" because of the problems his compulsive gambling creates.

Effect of Resolving a Feeling-State

It is proposed that when treatment resolves the FS, the compulsive urge will be eliminated. The goal of treatment is not abstinence but normal healthy behavior. Clinical experiences suggest that when treatment eliminates the ICD and related compulsive urges, the individual can then engage in the behavior without it triggering the compulsion. For example, a previously compulsive shopper could shop without activating the urge to shop compulsively. These changes occur in both the cognitive and behavioral dimensions.

Cognitive change. Clinical experience indicates that one of the consequences of a successful treatment is that the rationalizations and distorted thinking that people have used to justify their out-of-control behavior begin to disappear. It is hypothesized that once the fixated FS is reprocessed, the need for these thought patterns no longer exists. The previously resistant-to-change cognitive distortions appeared to be easily discarded once they are no longer needed to justify the compulsive behavior.

Behavioral change. An important characteristic associated with ICDs is the destructive nature of the behaviors. Once the FS is processed, clinical experience indicates that these destructive behaviors usually disappear without further clinical attention and that the person automatically begins to seek more appropriate ways to obtain the desired feeling. For example, a person whose feeling of belonging is associated with the behavior of buying expensive clothes may seek out more appropriate relationships to satisfy this need when the FS is eliminated. The focus of therapy may then shift to learning new social skills or developing life-enhancing behaviors. FST further proposes that after resolution of the FS, abstinence is neither necessary nor desired.

Additional Treatment Targets

Clinical experience indicates that resolving the ICD will often uncover other psychological dynamics that gave rise to the ICD in the first place. These psychological dynamics then become the focus of therapy. There is always the possibility of another ICD being created if the reprocessing of other past events that may have contributed to the etiology of this disorder is not completed. The standard EMDR treatment protocol or other therapies can be used as appropriate throughout the course of treatment. Other treatment targets may include the psychological dynamics that may have been covered up by the compulsive behavior. For example, resolving the ICD will not alter an individual's avoidance or defensive dynamics. A person who has a bad day at work may have also used gambling to avoid feelings of anxiety—feelings that may have been covered up by the FS related to gambling. In this case, even after resolving the ICD, treatment would still be needed to assist the individual in developing more adaptive strategies to tolerate or reduce anxiety.

Impulse-Control Disorder Protocol

FST was used to develop a new treatment for ICDs, called the Impulse-Control Disorder Protocol (ICDP), using a modified form of EMDR. EMDR has been shown to be effective in the treatment of PTSD and other trauma-based disorders (Bisson et al., 2007)). EMDR treatment involves identifying the traumatic image, identifying the negative feelings and beliefs associated with the image, and the use of the Subjective Units of Disturbance Scale (SUDS), which identifies the intensity of the feeling on a range from 0 to 10. Eye movements are then used to process the image and feelings and install positive beliefs and feelings.

Just as EMDR can process traumas, clinical experience suggests that a modified form of EMDR can also be used in a brief treatment approach for ICDs. The FS is the target for therapy in the ICDP. Composed of the desired positive feelings and the memory of that behavior that is fixated with the feeling, the FS is processed through the use of eye movements. The most important modification of the EMDR protocol is the approach used in the processing of the beliefs related to the ICD. This change and its rationale will be explained later in this article.

As stated earlier, the FS that causes the ICD can be composed of any feeling and any behavior. Therefore, precisely identifying the exact behavior and the exact positive feelings embedded in the FS for any particular client is the key element of the ICDP therapeutic process. Identifying the exact behavior can be difficult because any behavior, for example, playing poker, consists of many different sub-behaviors such as putting the money on the table, making a bet, drawing cards, or winning a hand. The appropriate aspect of the target behavior to be processed is the one that generates the most intense positive feeling.

Table 1. Outline of the Steps of Impulse-Control Therapy

First session
1. Obtain history, frequency, and context of compulsive behavior.
2. Identify the specific aspect of the compulsive behavior that has the most emotional intensity associated with it.
3. Identify the specific positive feeling linked with the compulsive behavior, along with its rating on the PFS.
4. Locate and identify any physical sensations created by the positive feelings.
5. The client combines an image of performing the (a) compulsive behavior, (b) the positive feeling, and (c) physical sensations.
6. Eye movement sets are performed while the client focuses on material (e.g., memory, feeling, image, sensation, thought) that was elicited during the prior set.
7. When the PFS is ≤1, identify the related NC and use the PC, SUDS, emotions, VOC, and body location according to the standard EMDR protocol (unlike the standard protocol, no specific memory is identified and no visual image is used).
Homework
8. Between sessions, homework is given to evaluate the progress of therapy and to elicit any other positive feelings related to the compulsive behavior.
Second session
9. In the second session, the compulsive behavior is reevaluated for both the feeling identified in the first session as well as identifying other positive feelings related to the ICD.
10. If necessary, Steps 2 to 8 are performed again.
11. Continue the reevaluation and processing in further sessions until the person's drive toward the compulsive behavior has been eliminated and the behavior has changed.
12. When it appears that all the FSs have been processed, the negative belief that was created as a result of the compulsive behavior is determined. Use the standard EMDR protocol for processing.

Note: PFS = Positive Feelings Scale; NC = negative cognition; PC = positive cognition; SUDS = Subjective Units of Disturbance Scale; VOC = Validity of Cognition Scale; EMDR = eye movement desensitization and reprocessing; ICD = impulsive-control disorder; FS = feeling-state.

After the aspect of the target behavior that generates the most positive feeling has been identified, the precise feelings related to that behavior can then be identified. Examples of positive feelings include "I'm a winner," "I feel safe," and "I feel powerful." The FST presumes that this positive feeling, not the apparent object or behavior, is the real goal of the impulsive behavior. The feelings of excitement or pleasure that often arise when someone imagines doing the compulsive behavior are usually the result of the anticipation of doing the behavior but are not necessarily part of the FS itself. The feelings embedded in the FS are always normal, healthy feelings that everyone desires to feel. Identifying those feelings is a crucial element of the ICDP process. The complete protocol is given in Table 1.

Urges and cravings are usually associated with impulse-control problems. FST, however, considers urges and cravings to be sensations that are created after the FS is activated and are not part of the FS. Therefore, because urges and cravings are the result of the activation of the FS, they are not an appropriate target for the ICDP. Clinical experiences suggest that urges and cravings will disappear when the FS has been processed.

Modification of the EMDR Protocol

Modification of the EMDR protocol in the ICDP is necessary because traumatic events typically targeted with EMDR are different from the positive events that generate the FSs associated with ICDs. Traumatic events involve shock and fear, and the events themselves can create negative beliefs. No prior negative beliefs are necessary. On the other hand, ICDs are thought to be created from positive events and require an underlying negative belief for the ICD to be created. So ICDs require the processing of three sets of beliefs in contrast to the one negative set of beliefs created by the trauma.

Another modification of the EMDR protocol is the use of the Positive Feeling Scale (PFS) instead of the Subjective Units of Disturbance Scale (SUDS). The PFS scale is used because the feelings linked with the behavior are positive feelings, not disturbing feelings. The PFS scale is a 0 to 10 scale with 10 being the most intense positive feeling. Table 1 gives an outline of the steps of impulse-control therapy.

A Case Study

The following case study illustrates the application of the ICDP. The participant described in this case study came to therapy specifically for his compulsive behavior problems. "John" was not interested in resolving issues concerning trauma or difficulties from his childhood or even current events. Even when these issues arose during the course of treatment, he did not wish to pursue treatment for them. This particular case was chosen as an example precisely because it illustrates the effectiveness of ICDP uncontaminated with treatment on any other aspect of his life or any other treatment modality.

John's Story

John was a 35-year-old successful broker with a long history of gambling problems. Over the course of 10 years, John had

lost more than $1,000,000 playing poker. In and out of Gamblers Anonymous and different rehab centers, he had been unable to stop gambling. He was deep in debt, had lost his marriage because of his gambling, and had intense episodes of depression.

When John played poker, he would often play well for a few hours. He would make appropriate bets and not chase a losing hand. Then something would happen and, suddenly, he could not stop himself from playing losing hands. His betting would go out of control. After losing all his cash, he would go to the ATM for more money and lose that as well. If he won, John continued to play until he had lost all he had won and more. He would often play poker all night. At the beginning of treatment, John was still gambling.

Case Conceptualization

During the first session, John identified two different FSs. When asked to imagine playing poker, John stated that his first feeling was excitement. When the therapist asked what he was excited about, he said, "winning." He then recounted a time when he had won $16,000 with three queens. The memory was so powerful that his face became flushed. From his reaction, it became clear that his excitement was the excitement of winning. The PFS level was a 10. Because John remembered the exact event that created the FS, that specific memory and the winning feeling were used as the target.

Identifying the event that created the FS is not necessary. What is necessary is that the person connects the feeling embedded in the FS with the compulsive behavior. Whether the visualized event is the first experience or the one most easily experienced, is not important. In this case, John visualized himself playing poker and experienced that "winning" feeling while performing eye movements. After three sets of eye movements, the PFS level dropped to 2. At the end of this process, when asked how he felt, John said that he didn't feel any different; he just wasn't as excited about gambling. He wasn't even sure that anything had really changed—a common reaction after the first session.

After each session using the ICDP, homework is given with the purpose of triggering the compulsive urge. Activation of the FS is necessary to evaluate what needs to be processed. John's homework was to continue to play poker and note any changes both in behavior and feelings.

In the second session, 1 week later, John reported that he was gambling fewer hours but still had a strong urge to play poker. He felt something had changed because leaving the table was easier. John was again asked to imagine playing poker and to identify how he felt. He rated the excitement of winning with a PFS level of 5. Three sets of eye movements reduced the PFS level to 0. At this point, the focus of treatment shifted to identifying the negative beliefs associated with his "winning" FS. When John was asked why winning was so important to him, he disclosed that whenever his father was mad at him, he had called him a loser. He described the negative belief underlying the "winning" FS as "I'm a loser." The emotion was shame. A SUDS rating indicated distress of 9. After processing, the SUDS decreased to 1. The positive belief installed was "I can succeed." (VOC [Validity of Cognition Scale] increased from 2 to 7). Once again, the assigned homework was to play poker and note his behavior and feelings.

Two weeks later in the third session, John reported that for the first week he did not even go to the card club and only thought occasionally of playing poker. The second week, however, he started really missing going to the club and being with the guys. He would go to the club for four hours each night but this time his focus was more on the people rather than winning at poker. The feeling he identified was a sense of belonging, associated with the camaraderie of being with other men. So this FS was composed of the behavior of playing poker and the feeling of belonging. The PFS level was rated at 7. Four sets of eye movements later, the PFS level dropped to 1. The homework was to play poker and note any changes in behavior and feelings.

Two weeks later in the fourth session, John reported that he had played poker twice, winning one night and losing the other. "Whether I won or lost, I still got up from the table and went home. No more chasing the money for me." The PFS level of the desire for camaraderie had stayed at 1. Then John articulated the negative belief underlying the desire for camaraderie as "No one wants me." The emotion was fear (SUDS decreased from 9 to 0). The positive belief that was installed was "I'm likeable" (VOC increased from 3 to 7).

The fifth session took place 4 weeks later. John reported that he was playing poker only once or twice a week and while he continued to enjoy playing poker, he no longer felt the strong urges he previously had. In this session, the therapist asked John about his negative beliefs about himself that had developed as a result of his compulsive gambling. He identified two beliefs: "I'm no good," with an emotion of shame (SUDS decreased from 9 to 1) and "Nothing I do works out," with an emotion of despair (SUDS decreased from 7 to 0). The positive beliefs installed were "I'm really okay" (VOC increased from 2 to 7) and "I'm successful" (VOC increased from 3 to 7).

Because John was gambling during treatment, the effect of the treatment was easy to perceive. The number of hours he played poker went from 40 or more per week to less than 8. John no longer chased losing hands and was able to leave the table after a set number of hours whether he had won or lost. If he lost the money he had started with, he left the game rather than get more money from the ATM. What surprised John the most was that he discovered he really enjoyed playing poker and that he was a good poker player.

Follow-up

A follow-up interview was conducted by telephone call 3 months later. John reported that his poker compulsion had

not returned. He stated that he felt that his life was in pretty good balance, enjoying his twice a week poker nights but also doing well with both his job and his marriage.

Discussion

John's case study illustrates how FSs and therefore compulsive behavior can be created. The use of the ICDP resolved John's gambling behavior in five sessions. After the treatment, John reported that he could gamble without being triggered into his previous compulsive behavior. Even though traumas and other psychological problems surfaced during the therapy, John did not want to work through them. Nevertheless, his pathological gambling behavior had not returned at the 3-month follow-up.

A fundamental difference between ICDP and cognitive–behavioral therapy is that the ICDP focuses directly on a different source of the compulsive behavior, the positive FS versus a negative affect. Cognitive–behavioral techniques can be used to manage or control the compulsive behavior but leave the underlying state-dependent memory unprocessed. The consequence of these approaches is that the compulsive behavior may become out of control again. John's case study illustrates a different approach.

A fundamental difference between ICDP and standard EMDR is that although both approaches target the fixation of feeling and cognitions related to intense events, EMDR focuses on traumatic events and feelings whereas ICDP focuses on positive events and feelings. EMDR targets events and feelings that people want to forget; ICDP focuses on events and feelings that people like to remember and feel. This means that the processing of ICDs with ICDP is easier to process than traumatic events because clients have less resistance to remembering positive events and feelings. Clinical experience suggests that psychological dynamics such as dissociation and splitting are not factors in the processing of the ICD.

One of the strengths of the ICDP approach is that, because clients are not asked to control their behavior, client retention may be easier. There are no manuals to work through and no affirmations to write. The approach works with the clients' needs for quick results with minimal effort. Consequently, even people who are less motivated can receive help.

As noted in the literature review, there is a strong correlation between ICDs and past traumatic experiences. Research indicates that the more traumas and neglect a person experiences in his life, the higher the risk for pathological gambling disorders and sexual addiction (Carnes, 1991; Petry & Steinberg, 2005; Scherrer et al., 2007). The FST proposes that trauma and neglect contribute to the formation of ICDs because they create negative beliefs and feelings (Shapiro, 2001). Negative beliefs such as "I am powerless," "I'm a loser," and "Nothing I do makes a difference" provide the intense desire for the opposite/positive feeling that is the basis of an FS. Clearly, a person who has more intense negative feelings may feel the opposite/positive feeling more intensely when an event occurs that fulfills that need. These more intense positive feelings may then compose the FS that creates the ICD. The FST of ICDs, therefore, supports the existing research that indicates that both trauma and neglect are risk factors for the development of ICDs.

The similarity between AM and the FST is that both theories postulate that the memories of addiction are an episodic type of memory that becomes fixated in the brain. The difference between the AM and FST is that AM is postulated to be composed of only the feelings of loss of control and the memory of the drug effects. On the other hand, the FST postulates that the memory is composed of the specific desired feelings (e.g., "I'm a winner" feeling) and the behavior that occurred when that intense feeling occurred. The feelings that the AM therapy focuses on are the feelings of urges and cravings. The ICDP specifically avoids targeting the feelings of urges and cravings. Urges and cravings are considered to be only the feelings of drive caused by the feelings that underlie the urges and cravings. In ICDP, resolving an ICD requires identifying and processing the underlying positive feelings that compose the FS.

The adaptive information processing (AIP) model (Shapiro, 2001) postulates that EMDR works by integrating more adaptive or realistic information than was previously inaccessible to the client. The AIP model is also useful for understanding both the FST and ICDP. However, instead of a target related to a traumatic event, the target is associated with an intensely positive event. The hypothesis regarding ICDs is that the intensity of the experience creates a state-dependent memory that is blocked from interacting with other more adaptive information. This isolation of the memory network explains why people with impulse-control problems can understand how destructive their behavior is and yet continue the behavior. Clinical experience with the ICDP shows that clients with impulse-control problems experience the same kind of transformation as those receiving EMDR for traumas. Thus, the AIP model provides an explanation of why irrational beliefs and thought processes are automatically changed as the FS is processed.

Limitations of the Case Study

The limitations of this case study are numerous. No standardized measurement was taken, the therapist was the assessor, the case study may not generalize to other people with gambling problems or other types of impulse-control problems, no objective behavioral assessments were conducted, and a longer term follow-up is necessary to determine if the impulse-control problems return.

Recommendations

Performing research on the ICDP has the advantage, similar to EMDR's approach to trauma, that the therapy can be conducted in relatively few sessions (three to five). In addition, clinical experience indicates that there are significant changes in both feelings and behavior in compulsive gambling, sexual,

and shopping behavior, which makes evaluation of these changes easier. However, of the ICDs, only researchers in pathological gambling have developed the necessary standardized measurements such as the Addiction Severity Index Gambling Subscale or the Timeline Follow-Back (Petry, 2004) that have been used in treatment research. The studies of other ICDs such as sexual and buying compulsions are still in the beginning stages. The use of the ICDP for pathological gambling could be studied by using a subject group and a control group, using one of the standardized measurements pre- and posttreatment.

Summary

The FST proposes that the loss of control over normal behaviors is the result of a desired feeling becoming fixated with the memory of a particular behavior. This fixated linkage between feeling and behavior is referred to as an FS. An FS is composed of any desired feeling linked with any behavior. This accounts for the variety of ICDs and the difficulty in extinguishing them. The new treatment protocol, ICDP, based on a new formulation of the etiology of ICDs, offers the possibility of a significant remediation of these difficult-to-treat disorders. Because ICDP therapy usually requires only three to four sessions per FS, this approach will be easy to evaluate.

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References

Allen, A., & Hollander, E. (2006). Sexual compulsions. In E. Hollander & D. Stein (Eds.), *Clinical manual of impulse-control disorders* (pp. 256-278). Arlington, VA: American Psychiatric Association.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.

Becker, H. C. (1999). Alcohol withdrawal: Neuroadaptation and sensitization. *CNS Spectrums, 4*. 38-65.

Bisson, J., Ehlers, A., Matthews, R., Pilling, S., Richards, S., & Turner, S. (2007) Psychological treatments for chronic post-traumatic stress disorder: Systematic review and meta-analysis. *British Journal of Psychiatry, 190*, 97-104.

Blum, K., Braverman, E. R., Holder, J. M., Lubar, J. F., Monastra, V. J., Miller, D., . . . Comings, D. E.. (2000). Reward deficiency syndrome: A biogenetic model for the diagnosis and treatment of impulsive, addictive, and compulsive behaviors. *Journal of Psychoactive Drugs, 32*(Suppl.), 1-68.

Boening, J. A. L. (2001). Neurobiology of an addiction memory. *Journal of Neural Transmission, 108*, 755-765.

Carnes, P. (1991). *Don't call it love*. New York, NY: Bantam Books.

Comings, D. E., & Blum, K. (2000). Reward deficiency syndrome: Genetic aspects of behavioral disorders. *Progress in Brain Research, 126*, 325-341.

Cox, R. P., & Howard, M. D. (2007). Utilization of EMDR in the treatment of sexual addiction: A case study. *Sexual Addiction & Compulsivity, 12*, 1-20.

Dittmar, H. (2004). Understanding and diagnosing compulsive buying. In R. H. Coombs (Ed.), *Handbook of addictive disorders: A practical guide to diagnosis and treatment* (pp. 411-450). Hoboken, NJ: Wiley.

Dittmar, H. (2005). Compulsive buying—a growing concern? An examination of gender, age, and endorsement of materialistic values as predictors. *British Journal of Psychology, 96*, 467-491.

Eisen, S. A., Nong, L., Lyons, M. J., Scherrer, J. F., Griffith, K., True, W. R., . . . Tsuang, M. T. (1998). Familial influences on gambling behavior: An analysis of 3359 twin pairs. *Addiction, 93*, 1375-1384.

Feuerlein, W., Ringer, C., Kufner, H., & Antons, K. (1979). The diagnosis of alcoholism—the Munich Alcoholism Test (MALT). *International Journal of Rehabilitation Research, 2*, 533-534.

Goodwin, D. W., Powell, B., Bremer, H., Hoine, H., & Stern, J. (1969). Alcohol and recall: State dependent effects in man. *Science, 163*, 1358-1360.

Hase, M., Schallmayer, S., & Sack, M. (2008). EMDR reprocessing of and addiction memory: Pretreatment, posttreatment, and 1-month follow-up. *Journal of EMDR Practice and Research, 2*, 170-179.

Kenealy, P. M. (1997). Mood-state-dependent retrieval: The effects of inducted mood on memory reconsidered. *Quarterly Journal of Experimental Psychology, 50A*, 290-317.

Koob, G. F. (1992). Drugs of abuse: Anatomy, pharmacology and function of reward pathways. *Trends in Pharmacological Sciences, 13*, 177-184.

Lang, A. J., Craske, M. G., Brown, M., & Ghaneian, A. (2001). Fear-related state dependent memory. *Cognition & Emotion, 15*, 695-703.

Mann, K., & Ackermann, K. (2000). Die OCDS-G: Psychometrische Kennwerte der deutschen Version der Obsessive Compulsive Drinking Scale (Psychometric characteristics of the German version of the Obsessive Compulsive Drinking Scale). *Sucht, 46*, 90-100.

Margraf, J. (1994). *Diagnostisches Kurz-Inventar bei psychischen Storungen* Diagnostic Short-Interview for Mental Disorders. Berlin, Germany: Springer.

Margaron, H. (2004). Pleasure: From onthogenesis to addiction. *Substance Use & Misuse, 39*, 1423-1434.

Petry, N. M. (2004). *Pathological gambling: Etiology, comorbidity, and treatment*. Washington, DC: American Psychological Association.

Petry, N. M., & Steinberg, K. L. (2005). Childhood maltreatment in male and female treatment-seeking pathological gamblers. *Psychology of Addictive Behaviors, 19*, 226-229.

Petry, N. M., Stinson, F. S., & Grant, B. F. (2004). Comorbidity of *DSM-IV* pathological gambling and psychiatric disorders: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Clinical Psychiatry, 66*, 564-574.

Schmitz, J. M. (2005). The interface between impulse-control disorders and addictions: Are pleasure pathway responses shared neurobiological substrates? *Sexual Addiction & Compulsivity, 12*, 149-168.

Shapiro, F. (2001). *Eye movement desensitization and reprocessing (EMDR): Basic principles, protocols, and procedures* (2nd ed.). New York, NY: Guilford Press.

Shaffer, H. J., Hall, M. N., & Vander Bilt, J. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: A research synthesis. *American Journal of Public Health, 89*, 1369-1376.

Scherrer, J. F., Xian, H., Kapp, J. M. K., Waterman, M. P. H., Shah, M. H. S., Volberg, R., & Eisen, S. A. (2007). Association between exposure to childhood and lifetime traumatic events and lifetime pathological gambling in a twin cohort. *Journal of Nervous and Mental Disease, 195*, 72-78.

Schneider, J. P. (2004). Understanding and diagnosing sex addiction. In R. H. Coombs (Ed.), *Handbook of addictive disorders* (pp. 197-232). Hoboken, NJ: Wiley.

van der Kolk (1996). Trauma and memory. In B. A. van der Kolk, A. C. McFarlane, & L. Weisaeth (Eds.), *Traumatic stress: The effects of overwhelming Experience on mind, body, and society* (pp. 279-302). New York, NY: Guilford Press.

Van der Kolk, B, Burbridge, J.A., & Suzuki, J. (1997). The psychobiology of traumatic memory. Clinical implications of neuroimaging studies. In R. Yehuda & A.C. McFarlane (Eds.) *Psychobiology of posttraumatic stress disorder, Annals of the New York Academy of Sciences, 821*, 99-113. New York, NY: New York Academy of Sciences.

Weingartner, H., & Faillace, L. A. (1971). Alcohol state-dependent learning in man. *Journal of Nervous and Mental Disorders, 153*, 395-406.