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Using Humor in Treatment of Substance Use Disorders: Worthy of Further Investigation

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Abstract: Throughout the literature, humor has demonstrated positive effects on memory and learning, as well as physiological and psychological well being. Research has described improvements in communication and trust through the use of humor in the nurse-patient relationship. The utilization of humor with certain populations, including those with anxiety disorders, cancer patients and mood disorders has also been widely described in the literature but little research has been conducted with humor use in patients' recovery from substance use disorders. This population might benefit from the thoughtful applications of humor to promote laughter and mirth as well as learning recovery principles. A review of the humor theories, theoretical processes and humor styles are discussed for their use in individuals with substance use disorders, in particularly for early recovery engagement in 12 step programs and other recover support social networks. The application of humor in efforts to support recovery with substance use disorder patients is worth investigating further.

Keywords: Addiction, humor, humor styles, humor theories, recovery, substance use disorders.

INTRODUCTION

Over seventeen million Americans (6.8 percent of the population) are dependent on alcohol or have problems related to their use and another 4.5 million are dependent or have problems with other substances including illicit drugs and prescribed medications [1]. Recent estimates indicate alcohol consumption is responsible for about 88,000 deaths each year with healthcare costs of $25 billion and overall cost of approximately $223.5 billion in the United States (includes costs related to crime and work productivity) [2]. Illicit drug use and/or abused prescribed medications cost another $11 billion and $193 billion respectively with almost 43,982 overdose deaths [3, 4].

Substance Use Disorders as a Brain Disease

As the American Society of Addiction Medicine (ASAM) past President Michael Miller, MD, puts it, "At its core, addiction isn't just a social problem or a moral problem or a criminal problem. It's a brain problem whose behaviors manifest in all these other areas [5]. The brain disease model depicts addiction as a disease of neuroplasticity with changes in structures and functions of the brain. Addiction is viewed as a primary, progressive, chronic disease involving surges in the mesolimbic dopamine system activating motivation, memory, pleasure and reward circuits located in the nucleus accumbens and amygdala [6]. As the ability of different drugs to mimic or block the delivery of chemical messages by neurotransmitters to specific neural receptor sites became directly observable through experimental techniques such as ligand PET scanning, the disruptions caused by addictive drugs to molecular processes of transmission in the brain started to be mapped in ever greater detail.

Disrupted neuro-chemical transmission and lasting neuro-adaptation in these circuits leads to biological, psychological, behavioral and social manifestations. Initially, substance use is a voluntary behavior. With genetic and biological factors accompanied by prolonged use, many individuals move into a state of addiction, characterized by

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obsessive thoughts and compulsive use of substances in spite of adverse consequences [7]. The orbitofrontal cortex is involved with drive and compulsive repetitive behaviors. The abnormal activation in the orbitofrontal cortex in the addicted person could explain why compulsive drug self-administration occurs even with tolerance to the pleasurable drug effects (reward) and in the presence of adverse reactions [8]. Brain dysfunctions may explain both conscious (craving, loss of control, drug preoccupation) and unconscious processes (conditioned expectation, compulsivity, impulsivity, obsessiveness). Similar neurobiological changes occur with certain addictive behaviors such as gambling, gaming, shopping, exercise, sex, *etc*., and acceptable substance use such as caffeine, chocolate and carbohydrates as well as widely accepted treatments such as selective serotonin reuptake inhibitors, stimulants, and neuroleptic medications [9]. Health consequences and harm reduction drive current attitudes and interventions of the brain disease paradigm of addiction. Without treatment or engagement in recovery activities, addiction is progressive and can result is disability or premature death [10].

Denial is cited as the primary reason individuals with substance use disorders fail to seek help and most clinicians report they do not know how best to confront denial [11]. The insidious nature of addiction not only involves seeking pleasure and reward as it progresses, but also less obvious motives can involve the staving off of withdrawal symptoms, which are quite uncomfortable and lead to a cycle of continued use [12]. The addicted person experiences some relief of these uncomfortable withdrawal symptoms (*e.g*. anxiety, cravings) through relapse with substances, perpetuating biological and social impairment. These victims of addiction, as it progresses, correlate substance use as the cure rather than the cause of their dysphoria.

Substance Use Disorders with Environmental Influences

Substance use prevention and treatments have traditionally focused on changing individual behaviors; however social and cultural environments must be addressed since they influence attitudes and subsequent treatment approaches regarding addiction. Social-network factors have been implicated in the initiation, use, misuse, cessation, relapse and recovery of substance use disorders [13]. Social Identity Theory looks at motivations [14] and an extension of this theory, Self-categorization Theory, examines cognitions [15]. Although having different emphases on aspects of self, these theories consistently describe a continuum reflecting individual self and their sense of themselves as a group member. The individual tends to be motivated to accentuate similarities between themselves and other group members (the in-group), while at the same time accentuating the differences between themselves and non-group members (the out-group). Social identification can be influential in both substance use and addiction recovery networks [13]. Any strategy that encourages problem recognition and behavior change should be based on the assumption that the individual may struggle with continued biological cravings and dysfunctional social networks.

HUMOR

Humor can be defined as a quality that makes something laughable, amusing or funny [16]. Humor appreciation rests in the ability to perceive, enjoy or express what is amusing, comical, incongruous or absurd [17]. Humorous expression includes laughter, smiling and mirth at the recognition and expression of incongruities or peculiarities present in a situation or character [18]. It is a common belief that a good sense of humor leads to good physical health [19]. The beneficial results of humor are thought to rest in stress buffering effects [20]. Much of the theorizing and work on the role of humor in social interactions and interpersonal relationships has rested on the implicit assumption that humor is primarily a positive attribute [21]. As such, this work has often focused on the beneficial contributions made by humor's involvement in social domains leading to the more general notion that humor provides a social facilitative effect. This effect is undoubtedly a very important function of humor use in both social interactions and interpersonal relationships. However, other contemporary research suggests that it is equally important to consider the possible detrimental impacts of humor [22].

THEORETICAL PERSPECTIVES ON HUMOR

Laughter, wit and humor are instinctive coping mechanisms that can help people with the disappointments and struggles of life. Three theories of humor were found in the literature serving as a basis for humor's possible application for treatment of substance use disorders and further research. The three main theories used to explain the functions of humor include arousal or relief theory, incongruity theory, and superiority theory [23] (See Table **1**).

Arousal Theory

Arousal or relief theories explain laughter and humor as a means for releasing tension and energy particularly during

social interactions. The facilitative effects of humor can discharge pent up emotions reducing interpersonal tensions and conflicts, improving mood, decreasing anxiety and enhancing both emotional and physical health [24]. Several studies were done to investigate sense of humor as a moderator of life stress [25]. Researchers found that, as stressful life events increased, individuals with higher scores on humor measures showed an attenuated increase in depressed mood. Stresses are reduced when people experience humor and engage in laughter [25]. This cognitive perspective of humor explains that responding to stress in a humorous manner, people may be less likely to appraise their environment as threatening and experience less stress. Relief Theory may explain cognitive benefits and may contribute to humor's enhancing effects on learning.

By finding humor in stressful situations, those recovering from substance use disorders can replace negative with positive affect enabling them to learn sober living principles to maintain abstinence and their recovery. Positive reframing through enjoyable emotional responses such as laughter allows them to learn healthy ways of living and consider changing behaviors in a manner that is attractive. People with substance use problems and in early recovery used the consumption of intoxicants to cope with stress. Presenting cognitive behavioral insights may be better received through humor rather than rules, warnings and scare tactics and warrants further investigation. Finding humorous perspectives to their situations might be helpful to feel good about themselves and their recovery and learn to have fun without the use of substances.

Incongruity Theory

Incongruity Theory suggests people laugh at things that violate acceptable patterns to resolve conflicts. The focus of the theory is on cognitions involving the contradictions between expectations and experiences. A joke, or being able to see the irony in a situation, requires mental flexibility and can lead to a change in affect. Individuals rationally come to understand typical patterns of reality before they can notice differences. Incongruity looks at situations that make sense and do not make sense at the same time. Researchers reported significant relationships between humor appreciation and creative problem solving [19]. Cognitive surprise of resolving contradictions between expectations and experience incongruities form the basis of this perspective of humor. The humor is achieved in finally resolving the discrepancy. Amusement, according to this understanding of humor, is akin to puzzle-solving. People with substance use disorders experience the stress of various negative consequences of their behaviors as well as biological and psychological processes that have become dependent on continuing substance use. They might gain new perspectives through humor by identifying with some of the contradictions in their thoughts and behaviors and reconsider alternatives such as accepting disease and recovery concepts. Finding humor in incongruity resolution can lighten the seriousness of situations and enhance coping with tension and improve hope creative problem solving [24].

Superiority Theory

Superiority Theory focuses on a sense of supremacy over others by criticizing the opposition or unifying a group. The focus is on people's need to feel better or superior to others or past selves. An individual laughs or jokes at the expense of another (butt of the joke) and subsequently feels superior. Through criticizing others and putting down the opposition, the effect can even unify a group through a shared sense of superiority. Sometimes humor is disguised in such a way that only those familiar with the group's culture understands it. At other times, the joke is obvious and easily comprehended by everyone. Sometimes the joke is used to demean another group member, as if jockeying status within the group and other times the humor makes the victim feel more a part of the group, as recognition or as an initiation. Aggressive uses can be viewed as a negative form of humor and is a means to express hostility, anger, assertiveness or sexual drives in a socially acceptable manner. The superiority perspective suggests at least two possible functions of humor in relationships with others: humor used at the expense of another to express hostility in an acceptable manner and humor to assert one's wishes within that relationship with others. Those with substance use disorders could benefit from this perspective through feeling superior to their past, intoxicated selves through identification with the similarities of others' lives that elicit much laughter in recovery support meetings. Inside jokes, those that only recovering substance users understand can strengthen group identification and cohesion. Great risks could involve feelings of ridicule or embarrassment that could alienate new members in addiction recovery networks through aggressive forms of humor.

HUMOR STYLES

In reviewing the social psychological aspects of humor, researchers have pointed out humor is fundamentally a social phenomenon that is involved in numerous aspects of interpersonal communication [25]. These functions include

using humor to decrease shame and relieve tensions in potentially embarrassing situations, as well as the use of humor to self-disclose and determine the beliefs and attitudes of others. Humor can also be used by high status individuals to maintain dominance over others and by low-status individuals to gain the approval of those persons thought to be important [20]. In a group context, humor can be used to highlight and enhance group identity and cohesion; manage discourse by shifting conversations away from threatening to more light-hearted topics [26]. Interpersonally, humor is rated as being among the most important personal characteristics we seek in others; with this desire for humor evident in many different types of relationships, including dating, marriage, and friendships [20].

In a personality-based approach to humor, two adaptive styles are affiliative and self-enhancing humor; whereas the two maladaptive styles are aggressive and self-defeating humor [19]. Affiliative humor involves funny, non-hostile jokes and spontaneous witty banter to amuse others in a respectful way. It is aimed at others and used in an adaptive manner to facilitate relationships and reduce interpersonal conflict. Aggressive humor, on the other hand, is intended to put others down by using sarcasm, teasing and ridicule. As such, the use of this maladaptive humor style may hurt or alienate others. Self-enhancing humor is often used as an adaptive coping mechanism, allowing individuals to adopt humorous outlooks on life and maintain realistic perspectives in stressful situations. Finally, self-defeating humor is considered maladaptive and involves self-disparagement and allowing oneself to be the butt of the joke, in order to gain the approval of others.

Benefits of Humor

There are many acknowledged physiological and psychological benefits to mirth and laughter. Literature review suggested improved immune response, stimulation of circulation and improved cardiovascular and respiratory function, reduced stress hormones, elevated pain threshold and tolerance and release of endorphins, serotonin and dopamine enhancing mental and emotional functioning [27]. Cognitive benefits include enhanced learning and memory for humorous materials, as well as improved problem solving ability [28 - 30]. Humor strength (how funny), as well as message relatedness, are important factors in learning and creativity [31, 32].

Table 1. Summary of humor theories.

Theory	Concept	Outcome
Relief	• Release of tension • Arousal	• Environment less threatening • Positive reappraisals of situations
Incongruity	• Resolving contradictions	- Cognitive surprise - Expectations *versus* experience
Superiority	• Critical of opposition Butt of joke	- Sense of supremacy - Unifying group

Humor has demonstrated increased ability to cope with stress and anxiety by providing an alternative, less serious perspective on one's problems [33]. People's mood can be improved with laughter and mirth, elevating self-esteem, resilience and feelings of well-being and reducing negative thinking and depression [34]. An improved sense of humor is related to feelings of hope, optimism, energy and vigor.

Humor, laughter and sense of mirth are also essential components of human happiness and the absence of humor is related to maladaptive dysfunctional behaviors [35]. The social benefits of laughter, humor and mirth have also been explored. Having a sense of humor has been shown to increase attractiveness and bonding to others, including potential mates, and can be related to closer relationships and happier marriages [36]. Humor can reinforce group identity, cohesiveness, and altruism, however also has the potential to alienate members that could be made fun of or are offended by the expressed style of humor [37].

Recovery

More than a third of U.S. adults who were dependent on alcohol are now in full recovery [38]. Similar recovery rates were found in those with substance use problems involved in 12-step recovery programs [39]. The World Health Organization's [40] report on alcohol use revealed 13% of the European population and almost 20% of the Americas are former drinkers and abstained from use for at least 12 months, while over 22% of the population in each of these two regions are heavy episodic drinkers.

Even after people with substance use disorders cease using substances, many show continued impairment of

cognitive functioning on both intelligence and neuropsychological tests, with deficits being apparent in visual perception, learning, memory, and the use of problem-solving strategies [8]. Cognitive impairments in people with substance use disorders do improve dramatically after substance use cessation and slowly over time as they continue in their sobriety [41]. Strategies to educate and promote behavior change in this population may best be presented in this early stage of recovery. Significant client improvements were found on behavioral criteria and psychosocial functioning during the first three months of treatment [42]. Session attendance was positively related to favorable behavioral changes as well as to positive perceptions by clients and counselors of their therapeutic interactions [43].

Denial of the severity of the problem tends to be the primary defense mechanism that keeps people from seeking help for their substance use disorders and entering recovery [11]. Twelve-step recovery programs incorporate processes of admitting and accepting one's chronic condition as a basis to work a recovery program [44]. An important component to recovery involves changing lifestyles, which includes having associations with recovering individuals and avoiding people who drink and use drugs.

NURSING IMPLICATIONS

In reviewing the nursing literature there are several articles summarizing various applications of humor in the nursing profession with generally positive results [45 - 48]. Finding new ways to improve education and health promotion in this population could have significant implications and humor could play a powerful role.

In 1905, Sigmund Freud described humor as one of the strongest defense mechanisms that enables the patient to face problems and avoid negative emotions [49]. The negative consequences of substance use behaviors usually include a variety of physical, mental and social dysfunction. Laughter feels good and may facilitate feelings of well being without using substances. The nurse may feel more confident in communicating with patients as a result of shared humor. Therapeutic humor can take almost any form including jokes, riddles, puns, spoonerisms (errors in speech or deliberate play on words), humorous absurdities, illogical reasoning, self-enhancing and self-deprecating remarks and cartoons leading to improvements in behaviors [50]. Having a good sense of humor can be an important communication skill, both eliciting laughter from patients as well as appreciating and honestly enjoying patients' use of expressing humor, thereby enhancing nurse-patient relationships. Inherent risks with humor include negative uses such as disparagement, ridicule and avoidance of problems [27]. The most efficient way to reduce risky behaviors in a population may be to find methods for people to learn healthy behaviors and attitudes [51]. Numerous studies have shown memory and learning advantages for humorous material in educational settings [52 - 54].

CONCLUSION

Humor's positive effect on physical and mental health has been well established in the literature. The ways to incorporate humor into substance use disorder treatment can be explored with the goal of improving ways to promote behavior changes with this challenging population. People with substance use disorders tend to reject rules, laws and warnings as evidenced by the continued use of substances in spite of adverse legal, social, financial and health related consequences [55]. Efforts to reach this population may be improved through humor, by presenting consequences of addictive behaviors and avenues to recovery in ways that are amusing and more readily retained. Those already in 12-step programs could reinforce their own recovery through humorous sharing of experiences to newcomers. Nurses could use humor in conjunction with Cognitive Behavior Therapy, show comical videos and recovery related cartoons to reach this population. In 12-step recovery meetings, jokes that are particular to that population, could reinforce identification and promote newcomer inclusion and sense of belonging.

Human behaviors are a product of multiple influences including interactions within their social circles. Social Cognitive Theory explains behaviors in terms of a dynamic interplay of personal behavior and the environment [56].

Those with substance use disorders that are in treatment and recovery can learn to accept responsibility for their own recovery. The interactions between those with substance use disorders and their environment, including humor, can reinforce healthy behaviors and warrants further study.

CONFLICT OF INTEREST

The author confirms that this article content has no conflict of interest.

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