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Journal of Substance Use

A review of the factors affecting the course and outcome of the treatment of substance use disorders.

Katerina Flora

Abstract

This article presents the findings from a systematic review of the literature on the factors that contribute to the treatment efficacy of substance use disorders. The introduction includes a clarifications of the terms *factors, mediators* and *predictors*, which are the most commonly used ones in research studies, as well as a description of the challenges faced in the context of this review. With regard to methodology, factors affecting addiction treatment have been looked for in the PsycInfo and MedInfo databases. The results suggested a variety of studies, which have been classified according to their focus on studies that put an emphasis on: a) treatment (psychological, personal) factors, b) factors related to the treatment process, c) various treatment methods, d) other factors, e.g. social factors and e) factors related to the system level (e.g. health care system). The results are discussed based on the combination of these factors with each other and clinical experience.

Keywords: review, factors, substance use treatment

Introduction

One of the most important questions in the field of substance use disorders is which are those factors that positively or negatively affect the development and outcome of the treatment. By substance use disorders, we mean the substance related disorders as they are described by DSM V.

Given the fact that there are various kinds of treatment, this question becomes even more complicated in the sense that it becomes even harder to find these factors. The continuation of the research to this direction is important because this way an improvement of the treatment programs as well as their philosophy and techniques, which follow, could be achieved.

One of the obstacles faced in search of these factors is that of the terms. Lots of them are referred to as factors, mediators or predictors. Thus, the question raised is how these elements

are to be defined and if when referring to them, we all refer to the same meaning. Another obstacle is that a term in each case may refer to the client mediator, the therapist mediator or the therapy mediator itself. Consequently, a differentiation among the various kinds of factors is really important.

A second point to be taken into consideration is that the factors should be assessed not only within the studies but also across the studies, as mentioned in a recent article (Apodaca & Longabaugh, 2009).A further point that needs to be clarified in each research and mentioned specifically is what is to be defined as treatment efficacy. Thus, based on each research, staying in a treatment program, completing it, abstaining from substances abuse or reducing the psychiatric symptoms may be considered an efficacy indicator. To this direction, the importance of maximizing the internal validity of randomized clinical trials (RCTs) as well as enhancing the external validity has been noted, will have as a consequence advancing theory and by extension improving clinical practice (Del Boca & Darkes, 2007).

Furthermore, it should be mentioned that the concepts usually studied (e.g. motivation for change, coping skills) are complex and, although they have been studied thoroughly and measured with self-report measures, these psychological processes may not be part of conscious awareness. Additionally, it is doubtful whether they are indeed related to the underlying pathology of addiction (Naqvi & Morgenstern, 2015).

The main objective of this study is a systematic review of the factors that contribute to the treatment efficacy of substance use disorders.

The basic research question is: Which are the factors (individual, treatment and system factors) affecting the course and the outcome of the treatment of substance use disorders?

Method

The specific review of factors important for the treatment looked for factors in the PsycInfo and MedInfo databases, entering as search words for the factors the words mediators, factors, predictors of efficacy and for rehabilitation the words or the combination of the words addiction / substance abuse treatment/recovery. The data was

collected during 2016, from January to August. The dates of the papers were restricted from 2000 onwards. There were no main restrictions to the languages of the papers we were searching.

42 articles were found and 35 of them were included in the review. The criteria by which the specific articles were included in the review were that they clearly referred to the factors or mediators affecting treatment of substance abuse (either treatment interventions, treatment efficacy, treatment process or treatment systems). The excluded articles were referred indirectly to treatment.

Regarding the type of articles, 25 of them are research articles and 10 review articles. From the research studies, 21 are correlational quantitative studies, 2 quasi-experimental studies and 2 of them follow qualitative designs. Concerning the participants, 20 of the studies were taken place in residential treatment programs, 3 in community-based treatment programs and 9 in outpatient settings. The sample size ranges from 21 to 2796 participants according to the type and the range of research project.

Taking into consideration the theoretical concerns and issues mentioned in the introduction part and the steady need to improve the problematic parts, a search and finding of results from research studies of clinical samples was conducted. Given the dissimilarity of the research studies found, the data were analyzed using the content analysis and they were systematized in different categories according to the point on which each research focuses.

Findings

Thus, the categories emerged are a) the studies in relation to treatment (more “psychological” factors), b) the studies about factors related to the treatment process, c) the studies related to new treatment methods or/and techniques or a comparison of treatment methods, d) the studies that suggest new factors affecting treatment, e.g. social factors and e) the studies that focus on treatment on a system level. It should be mentioned that in the first 3 categories there were frequent associations with demographic data of the participants as well as with the user profile, e.g. chronic abuser, higher problem severity.

It would be useful for a better understanding of the categories, to distinguish the basic terms listed below.

Treatment refers to the content of treatment, the overall treatment, including factors related more directly with psychological therapy, the therapeutic factors. Treatment methods refer to

the therapeutic approaches or the specific techniques used in therapy. Treatment process was defined as the process of treatment, that whatever happens during treatment such sessions, groups, the involvement of the patients, parents. These processes include, also, procedures relating to staff, including training and supervision.

A) There are various studies whose subject is the treatment, psychological – personal factors that affect the treatment outcome. An initially paradox finding is that most psychiatric symptoms, the more severe substance use disorder, the more prior arrests and a stronger belief in Alcoholics Anonymous philosophy predicted significant improvement at 4-year outcome (Laffaye, McKellar, Ilgen & Moos, 2008). Another study (Zhuo, Bradizza & Maisto, 2014) confirms the finding that the severity of psychiatric symptoms did not predict later aggression.

Severity is measured via DSM 5 eleven criteria for substance abuse disorder. A minimum of 6 c criteria is required for a severe substance use disorder diagnosis (American Psychiatric Association, 2013).

A series of variables that have been studied concern cognitive and emotional mechanisms that affect treatment. Thus, the association between trait mindfulness and craving is partially mediated by negative affect. Dispositionally, mindful individuals tend to report lower levels of negative emotions and superior ability to regulate emotional distress. To this effect, mindfulness is positively associated with the process of cognitive reappraisal (Garland, Roberts-Lewis, Kelley, Tronnier & Hanley, 2014). Cognitive reappraisal is a form of cognitive change in the emotional impact of a situation (Gross & John, 2003). Other studies too (Bertrand, Brunelle, Richer, Beaudoin, Lemieux, Ménard, 2013; Flora & Stalikas, 2012; Flora & Stalikas, 2015) have indicated the inhibiting role of negative emotions and the clinical picture (anxiety, depression) in treatment process and outcome as well as the beneficial role of positive emotions in treatment.

In a review of the change factors, the known positive effect of variables has been mentioned, such as self-efficacy, motivation to change and social support. However, the methodological weakness of research studies based on self-report is highlighted as well as

the need to use correct measurement tools for the psychological processes (Naqvi & Morgenstern, 2015).

As is the case in every psychological treatment, in addiction treatment too, the clinician-caregiver-patient relationship and the relevant factors affect the treatment development and outcome. A study in respect to the therapeutic alliance correlates it negatively with relapse. The users with a more severe substance abuse developed a better therapeutic alliance. The therapeutic alliance proved important, especially at the beginning of the treatment (Bertrandet al, 2013).

A psycho-social variable that seems to affect addiction treatment is the retrieval of the old one or the development of a new identity that includes studying, work, and family. This process is important exactly because of the loss of the positive identity during substance use (Dingle, Cruwys & Frings, 2015).

The concept of spirituality, though difficult to be adequately defined, plays a role in the treatment process. Practices such as religiosity, transcendence and meditation that are characterized as ethical and conscious, may bring about a cognitive change, lead to the sense of a positive self and, therefore, affect recovery (Sussman, Milam, Arpawong, Tsai, Black & Wills, 2013;Katsogianni & Kleftaras, 2015).

The concept of a social network development and social support in general has been extensively studied in addiction treatment (e.g. Dubey, 1993; Majer, Jason, Ferrari, Venable & Olson, 2002; Davis & Jason, 2005). However, no study confirms the positive effect of this factor, as the social network is not positively correlated with a greater involvement in self-help treatment (Kelly, Stout, Greene & Slaymaker, 2014).

B) A second category of factors is related to treatment process factors. A study related to treatment development and mortality (Scott, Dennis, Laudet, Funk & Simeone, 2011) correlates long use abstinence, and re-admission (after a relapse) in the first 6 months with a reduced death risk, whereas with an increased one after these 6 months. Treatment timing plays an important role, as indicated by the study.

The importance of a narrow monitoring of the treatment is indicated by a study among dual diagnosis patients (Zhuo, Bradizza & Maisto, 2014) that associates the treatment greater involvement with reduced substance use and, therefore, with lower levels of aggression. These findings suggest that targeting substance use reduction in treatment may have the additional benefit of reducing the risk of later aggression among dual diagnosis patients.

The participation of parents in the treatment of addicted adolescents may be important as indicated by a study on the role of Family Therapy (Henderson, Rowe, Dakof, Hawes & Liddle, 2009). Treatment seems to improve parent monitoring and generally the positive family practices that contribute to the treatment of adolescents.

An indispensable part of addiction treatment is the treatment staff and a study stresses the treatment facilitating factors as referred to by staff members (Amodeo, Lundgren, Beltrame, Chassler, Cohen & D'Ippolito, 2013). Training, supervision, openness to evidence-based practices, group meetings, administrative support, cooperation with the community, the experience of the staff in evidence-based practices, funding and a good team spirit are the key factors (related to the addiction treatment staff members) to an efficient function of the treatment.

C) The third category of factors refers to specific treatment methods or/and sub-techniques. As mentioned earlier in category A, in the context of change cognitive mechanisms, a study stresses the importance of ways to deal with substance abuse-associated memories (Torregrossa & Taylor, 2013). Based on studies for Post Traumatic Syndrome Disorder (PTSD), researchers suggest that hindering reconsolidation of memories could be an efficient method in addiction treatment. The combination of memory retrieval and extinction of learning may be an efficient non-pharmaceutical treatment, weakening the strength of memories for use so that relapse is prevented.

Participation in 12-step self-help groups (Alcoholics Anonymous-AA, Narcotics Anonymous- NA) has repeatedly been associated with better treatment outcomes, whether it has to do with monitoring the teams as a main treatment choice or complementarily as

part of a greater and more systematic treatment program (e.g. Laffaye, McKellar, Ilgen & Moos, 2008; Naqvi & Morgenstern, 2015; Kelly, Stout, Greene & Slaymaker, 2014).

The Family Therapy efficiency in addiction treatment is confirmed by a study related to Multidimensional Family Therapy among adolescents, which draws the conclusion that this therapy improves parenting practices and specifically the Therapy parental monitoring (Henderson, Rowe, Dakof, Hawes & Liddle, 2009).

Group cognitive behavioral therapy (CBT) is included in various treatment programs with usually positive outcomes in improving substance-abuse associated thoughts and behaviors. A study has indicated that group CBT appears efficient in dealing with depressive symptoms in the context of addiction treatment too, but less helpful among members of ethnic and racial minority groups (Hunter, Paddock, Zhou, Watkins & Hepner, 2013).

Short psychosocial interventions include the Motivational Interviewing (MI) treatment technique that is very efficient in addiction treatment. Findings, which, however, are not cohesive, indicate its positive contribution to recovery motivation (Naqvi & Morgenstern, 2015; Barnett, Apodaca, Magill, Colby, Gwaltney, Rohsenow & Monti, 2010)

A review on computer-based treatments indicates that it is compatible with therapist-based interventions. These treatments seem to be very efficient in enhancing motivation, in engagement as well as in treatment of drug-dependent interventions itself (Bickel, Christensen & Marsch, 2011). Furthermore, apart from being cost-effective, they are also compatible with proposed biological mechanisms (Bickel, Christensen & Marsch, 2011).

Cognitive neuroscience with its various research studies in the field of addiction suggests that it may help make up for deficiencies in psychosocial treatments. Having gained a better understanding of the function of specific parts of the brain, it suggests that efficient treatment among alcohol users may increase the prefrontal cortex function and decrease the function of the ventral striatum reward systems. The question is if this is true in the case of other kind of addictions too (Naqvi & Morgenstern, 2015;

Torregrossa & Taylor, 2013; Burdick & Adinoff, 2013). However, the combination treatment (medication + behavioral intervention) does not seem to be more efficient than single alcohol addiction treatments according to a study (Subbaraman, Lendle, vander Laan, Kaskutas & Ahern, 2013).

Finally, a study of major projects has indicated that a client's matching to the treatment approach may not greatly affect the treatment outcome. What is suggested is looking for factors related to the characteristics of individuals in larger populations at the level of communities or treatment systems, where a wider range of settings and treatment interventions can be evaluated (Babor, 2008).

D) Our search suggested social factors that affect addiction treatment, whether relating to the basic subject matter of the studies and their main findings or emerging as a secondary element.

Therefore, as shown above, the positive outcomes of Group Cognitive-Behavioral Therapy are less to members of ethnic and racial minority groups (Hunter, Paddock, Zhou, Watkins & Hepner, 2013), a fact that indicates the role of social characteristics in treatment efficiency. Long-term unemployment has also been found to be positively associated with relapse (Sarkar, Nebhinani, Kaur, Kaur, Ghai & Basu, 2013). A study in relation to social disadvantage economic hardship stresses the determinant role of economic hardship and legal bars in addiction treatment, especially at the stage of rehabilitation (Wahler, 2015). These factors seem to render it even harder to build an aspirational new positive identity involving study, work, family roles, after substance use (Dingle, Cruwys & Frings, 2015).

Social factors directly affect social stress too. A study of social characteristics that cause psychological distress (Wahler & Otis, 2014) notes that being a member of an ethnic minority group is a predictor of substance use in follow-up.

On a micro-social level, social contacts seem to affect the treatment outcome. The change of peers from users to non-users improves the treatment outcome (Naqvi & Morgenstern, 2015). To this effect, fear of not being able to meet substance using friends is associated with a poorer treatment outcome (Sarkar, Nebhinani, Kaur, Kaur, Ghai & Basu, 2013). The social network itself, however, does not seem to be associated with an increased participation in treatment

(Kelly, Stout, Greene & Slaymaker, 2014) if it is not characterized by certain positive elements for the user (e.g. friends regarded as helpful, supportive).

As far as the role of social factors is concerned, it is important to be noted that some factors e.g. the socio-economic level or psychopathology may affect or intermediate the factors that affect the treatment outcome. In this light, it is suggested that substance abuse disorders are redefined, better long-term research studies are conducted, behavioral changes are better analyzed and cross-cultural changes are better investigated (Bühringer & Wittchen, 2008).

E) Addiction treatment efficacy may be assessed on a system level too, although the studies adopting such a perspective are few. According to such an approach (Babor, Stenious & Robelsjo, 2008), beyond the provision of individual services, different system designs (independent of total resources) and operational methods should influence service utilization, cost effectiveness, patient outcomes, and population rates of alcohol and drug problems. There are enormous variations in the way alcohol and drug services are organized. They vary in terms of extent of centralization, mix of services, availability and capacity of services, access or barriers to services, as well as staffing, integration, linkages, continuity, effectiveness, efficiency, economy and equity. The problem is that individual studies usually focus on specific treatment methods and neglect the impact of health systems on these methods and the patient treatment. Thus, it would be meaningful to study the relation among the policies, system characteristics, effectiveness and the population impact, as different levels of the treatment, which affect and include each other. The comparison of different systems may generate interesting results. Such a study among treatment systems for addiction in the USA and Sweden (Stenius, Witbrodt, Engdahl & Weisner, 2010) indicated that the system in Sweden had better outcomes in more marginalized and older users, whereas in the USA in more socially integrated users. Differences like these ones also reflect more broadly the social systems of both countries.

Conclusion

Trying to approach the factors that positively or negatively affect addiction treatment, we categorized them so that the ways various studies research this subject are rendered clearer, to distinguish them based on their qualitative traits and therefore better understand them.

In conclusion, it seems that the therapeutic planning and therapeutic programs today should take into account the new substances users' profiles, the important psychological factors, the new trends in treatment and research findings on the content and process of treatment as described above. An integral part of the therapeutic process are the therapists, whose education, supervision and mental health should be made a priority. In this context it is necessary to continuously interconnect and communicate with stakeholders that shape health strategy, researchers studying health systems at national and international level as well as therapeutic trends and practices in different countries.

Declaration of Interest

The author reports no conflicts of interest. The author alone is responsible for the content and writing of the article.

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