Male Patient Drop-Out from Addiction Inpatient Treatment in the Czech Republic:
A Study Protocol

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BACKGROUND: The dropout rate from the treatment of patients with substance use disorders (SUD) negatively affects overall treatment outcomes. Little is known about the specific role of various psychiatric and psychosocial factors in the individual patients. Limited data is available in regards to mindset and addiction treatment, giving the opportunity of testing such interventions in the future. **AIM:** To identify the key psychological, psychosocial, and other treatment related factors in the patients from the inpatient substance use treatment with addiction who have dropped out of the program based on correlations with the patients' mindset. **SETTING:** Men's ward for treatment of SUD at the Department of Addictology, General University Hospital in Prague, the Czech Republic. **SAMPLE:** 120 male patients aged between 18 and 70 years sampled by convenience sampling in the Department of Addictology at the General University Hospital in Prague, Czech Republic. **METHODS:** The prospective study with the follow-up will be based on correlation analysis of self-reports questionnaires which are completed on the first week and the last week of the treatment, followed up by a short phone interview 6 months after the beginning of the treatment for the patients that have completed the treatment. The following is a protocol for the study that began in 2020 and will end at the end of 2023. Data will be stored according to the guidelines and treatment confidentially. **DISCUSSION:** Findings will be disseminated in peer reviewed scientific journals, national and international conferences, and in briefings to inform clinical decision making. It will provide information which will help to personalize treatment to meet unique needs of each patient and serve as dropout prevention.

1 INTRODUCTION

Substance use disorders (SUD) account for a variety of health problems, morbidity and mortality (Rehm et al., 2019). The overall mortality associated with substance use decreased in the World Health Organization (WHO) European Region between 2010 and 2016 but still remains relatively high. SUD was responsible for about 2,1 million deaths in the WHO European Region in 2016. The Czech Republic has one of the highest rates of substance-attributed mortality, years of life lost and burden of disease attributable to tobacco, alcohol and illicit drug use in the European Region (Rehm et al., 2019).

The treatment of SUD differs in terms of length, settings (i.e., inpatient and outpatient, group or individual) as well as providers (health care services, social services, etc.). Inpatient treatment is beneficial especially for patients who have more severe manifestations of SUD (Rychtarik et al., 2000). The research suggests that longer duration of treatment is associated with better health outcomes (Moos & Moos, 2003; Zhang et al., 2003) and treatment completion is associated with lower probability of relapse (Gossop et al., 2002). The dropout rate in different inpatient facilities varies from 17–57% (Deane et al., 2012; Samuel et al., 2011). The main risk factors for dropout are cognitive deficits, low treatment alliance, personality disorders, and young age (Brorson et al., 2013). Other risk factors include comorbidities of substance abuse and mental health problems, especially when it is not addressed during the addiction treatment process (Schulte et al., 2010). Patients with alcohol use disorder and comorbid anxiety disorders have a higher rate of relapse (Schellekens et al., 2015). Higher therapeutic involvement, lower psychopathology and social support are predictors of prolonged abstinence post-treatment (de Moura et al., 2021). Early dropout from treatment is often connected with the severity of the substance abuse, it is especially associated with heavy illicit drug use. Interestingly, alcohol use severity seems to have the opposite effect (Syan et al., 2020).

Motivation is an important factor for treatment and its outcomes in patients with SUD (DiClemente et al., 1999). It is affected also by factors such as social support from the family, harm avoidance, craving, the effect of substance use on an individual's life, and one's history of treatment (Kizilkurt & Gıynaş, 2020). Another factor influencing motivation is the growth mindset (Rhew et al., 2018; Sridharan et al., 2019). Mindset as defined by Dweck (2008) can be divided into two subtypes - the growth mindset (the belief, that our abilities can be developed, for example, through effort, monitoring, and support from others) and the fixed mindset (the belief that our abilities cannot be developed). Initially, mindset research was focused primarily on intelligence in school children and academic success rates, but later moved to other areas such as prejudice, social qualities, and stress (Dweck & Yeager, 2019). Currently, there are limited amounts of studies on the impact of mindset in addiction and addiction treatment. These studies indicate that growth mindset might help people with the addiction-related problems to seek treatment (Burnette et al., 2019) and is associated with increased smoking cessation efforts (Sridharan et al., 2019). Growth mindset has also been associated with reduction of alcohol consumption over time for individuals with a stronger drinking identity (e.g., associations between self-perception and drinking; Lindgren et al., 2020).

1.1 Objectives

The main objective is to study the role of psychopathological symptoms, motivation, approaches toward treatment, social background, mindset, and subjective satisfaction with the mid-term (approximately three months long) treatment program in patients of the inpatient substance use treatment facility. In addition, we will observe the length of treatment, including reasons for drop-out, and the patient status three months after the treatment.

2 METHODS

2.1 Treatment interventions

The current treatment in our facility evolved from the "Apolinar Addiction Treatment Model" which dates back to 1948 and has an historical basis in first three facilities specialized to treatment of alcohol dependency in the Czech territory (Sejvl et al., 2019).

The common length of hospitalization is 13 weeks for the first treatment and seven weeks for patients who successfully completed the treatment in our facility and have a relapse. The capacity of the department is 25 men, there is also a room for family members and other people close to the patients (they can spend one week in the treatment with the patient to understand addiction and the treatment process). The ward is for patients with various addictions, but the most common is alcohol dependence. Treatment is based on a community setting with a stable daily schedule, a strict point system, and various therapeutic activities. The activities include relaxation, work therapy, group psychotherapy, the possibility of individual consulting (psychological, social), techniques, community meetings, art-therapy, and leisure activities such as sports. Treatment is fully covered by a public health insurance which is based on obligatory participation of the insured person.

The community offers a drug-free environment where the patients live together and accept organization and structure in order to promote change (Vanderplasschen et al., 2014). Our approach is based on the notion that drug dependence and abuse is seen as a disorder of the whole person which means that change has to be multidimensional. The goals of treatment are defined as global changes in lifestyle and identity. The effectiveness of the treatment depends upon the patient and his engagement in the treatment regimen and multiple interventions which are used in a community setting (Leon, 1995).

2.2 Participants

Participation in the study is voluntary and based on convenience sampling at the clinic. The nomination technique is be used for recruitment of the patients. The opportunity to partake in the study is given to all patients in the first week of treatment, to those who are eligible to participate. In total, 120 patients are included who will partake in the first testing. The age range of participants is 18 to 70. The treatment process

in our department is highly demanding, every patient is subjected to a motivational interview before being admitted to the treatment to assess if he will benefit from it. Exclusion criteria: Patients with intellectual disabilities, serious health problems which require special daily care that are sent to another facility.

2.3 Procedure

The assessment is based on self-reports questionnaires which are completed on the first week and the last week of the treatment. There also will be a short phone interview six months after the beginning of the treatment with the goal to assess the functioning of the patient in normal everyday life. The completion of the questionnaires lasts approximately 45 minutes in week 1 and 7 or 13 and the phone interview and the completion of the Addiction Mindset questionnaire is administered six months after the treatment takes approximately 5 minutes.

2.4 Instrumentation

SCL-90: The Symptom Checklist-90 (SCL-90) is a self-report scale oriented on actual psychopathological symptomatology and psychological distress. It is comprised of 90 items rated on a 5-point Likert scale of distress divided into nine dimensions - somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism (Derogatis et al., 1973). This scale was translated to more than 20 languages and it is also used as an indicator of change in symptoms (e.g., Prinz et al., 2013).

TCU CEST: The Texas Christian University (TCU) Client Evaluation of Self and Treatment (CEST; Joe et al., 2002) includes Treatment Motivation Scales (desire for help, treatment readiness, treatment needs, pressures for treatment Index), Psychological Functioning Scales (Self Esteem, Depression, Anxiety, Decision Making, Self-Efficacy), Social Functioning Scales (Hostility, Risk Taking, Social Consciousness), and Therapeutic Engagement Domains (Treatment Satisfaction, Counseling Rapport, Treatment Participation, Peer Support, Social Support). TCUI is an intake version which also includes Problem Recognition, Childhood Problems scales and does not include scales for treatment process and services. The scale is used for monitoring therapeutic goals (Joe et al., 2002) and for research (e.g., de Moura et al., 2021).

AMS: The Addiction Mindset Scale (AMS; Sridharan et al., 2019) consist of six statements which are measuring the belief that addiction is permanent. The patient is deciding how much he agrees with the statement on a 5-point Likert scale. This scale was developed to assess addiction mindset of patients with nicotine addiction, but authors are suggesting its usefulness also for other types of addiction.

Elements of treatment: In the elements of treatment, the patients are asked to rate on a 5-point Likert scale what they think will be beneficial for them in the treatment (week 1) and what is actually beneficial for them once they started it (week 7 or 13). As important elements we included stable daily regime, work

therapy, relaxation, techniques (i.e., various therapeutic activities), group therapy, community meetings, sport, point system, leaving treatment for a weekend (after six weeks of treatment, every patient has the options to leave for the weekend every two weeks), Nordic walking, lectures about addiction, going to the museum or other cultural facility, special role in community (e.g., chairman, reporter for culture, work, sport, purchaser), writing of diary, organization of leisure time, individual psychological consulting, individual consulting with social worker, and being a part of a community.

Anamnestic data: These data provide information about the patient and his experience with various substances and treatment options, including detoxification unit, outpatient treatment, individual therapy and so on. Another sociodemographic data (population of the area of living, relationship and children, living situation, educational, and occupational situation) will be retrieved from the hospital database.

2.5 Research design and setting

The present study will be a 39-month prospective follow-up study, which will be carried out from October 2020 to December 2023. The study will be carried at the in-patient men's ward, with voluntary hospitalization, for the treatment of facility of Department of Addictology, General University Hospital in Prague, the Czech Republic. The design of the study is based on the biopsychosocial model of substance use. This model suggests that all types of addiction seem to have many commonalities which are influenced by interaction of biological, psychological and social factors (Engel, 1977). This may reflect a common etiology of addictive behaviors (Griffiths, 2005) and follow informal observation from our department. The design incorporates a pilot testing which will include 30 patients and is estimated to last six months (October 2020 to March 2021).

The primary outcome measure is dropout from the treatment which is measured by counting the days spent in treatment. Additionally, the secondary outcome is the satisfaction with the treatment and its outcome (measured via the elements of treatment questionnaire). The potential prognostic factors (see Instrumentation) of treatment dropout and satisfaction will be assessed at baseline (i.e., week 1) and prospectively (i.e., week 13, for first-time patients, and week 7, for patients who relapsed after the first treatment). This study employs a correlational design, wherein treatment dropout is to be considered the outcome variable and the aforementioned prognostic factors as predictor variables.

2.5 Data analysis

Statistical analyses will be performed on SPSS (version 24) and Stata packages (version 14.2). The Shapiro-Wilk test will be used to assess the normal distribution of the variables. We will present categorical variables through frequencies and percentages, whereas continuous ones through measures of central tendency (e.g., M and Mdn) and dispersion (e.g., SD). Depending

on parametricity and comparisons to be made, group comparisons will be assessed via Student t-test, Mann-Whitney U test, and ANOVAs. To individuate possible predictors of treatment dropout, the prognostic factors (i.e., SCL-90, TCU CEST, AMS, elements of treatment, and anamnestic data) will be specified as predictor variables in a multiple regression analysis, using the variable days in treatment as the outcome variable. Statistical significance will be determined by a p value < .05 (two-tailed).

2.6 Data management

Original data will be checked for consistency, and series of automatic range checks will be performed until the database is considered clean; all data procedures in this phase will be tracked. A data backup will be performed periodically during the study. Only designated investigators will be allowed access to data.

2.7 Ethics

The study was approved by the Institutional Review Board of the General University Hospital in Prague (82/20 Grant VFN IGP). The anonymity of the participants will be maintained. Participants will be asked to provide a written informed consent to taking part in the study and made aware of the data protection rules and option to back out of the study any time.

⬡ 3 DISCUSSION

3.1 Strengths and limitations

Substance use disorder is connected with health problems and increased mortality. Nowadays, there are many types of treatment. Unfortunately, the dropout rate from the treatment is relatively high. Our aim is to understand what is impacting the dropout rate in our facility. We are assessing psychopathological symptoms, motivation, approaches toward treatment, social background, mindset, and subjective satisfaction with the treatment program in the first week of the treatment and last week of the treatment. We will monitor the patients' life situation by short phone interview six month after the start of the treatment. We hope that the outcome of this study will provide a new understanding of the factors influencing the dropout which will help to optimize the individual planning and provide the best opportunity to maintain in the treatment for the patients.

Our study is taking to account the mindset of the patients towards the treatment. This is an innovative approach to study the motivation towards the treatment. To our knowledge, this is the first study to investigate the connection between the mindset and dropout from inpatient treatment.

The study is based on questionnaires, so respondents may try to present themselves in a favorable manner due to the social desirability bias. Their responses may be negatively influenced by a limited ability of introspection, though this will be lowered by the exclusion of strong mental disabilities in the protocol. Certain limitations to the study are the inability to get explicit reasons for the drop out. We are relying primarily on the correlation of the self-assessment scales and subscales with the days patients spend in the treatment. One limitation that can be taken into account for later studies of the drop out phenomena in treatment are individual differences that can be assessed via personality testing. However, this would make the assessment process very lengthy.

3.2 Implications for interventions and future policy

Physicians and other health care workers provide within the health care system need updated and latest evidence-based knowledge regarding the lowering dropout rates from the treatment. The project will provide invaluable information, not only in the respective countries, but internationally. Furthermore, the study has implications on implementation of mindset based psychological treatments based on Dweck (2008) and later workbooks that patients can apply in working toward more constructive mindsets. We believe that including this aspect of psychology in treatment will serve the patients and potentially increase adherence to treatment protocols and potentially lower relapses in the patients day to day life outside of institutional care.

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