

# FACTORS CONTRIBUTING TO RELAPSE OF MENTAL HEALTH CARE USERS TREATED FOR SUBSTANCE-INDUCED PSYCHOTIC DISORDER IN A PSYCHIATRIC HOSPITAL IN GAUTENG, SOUTH AFRICA

**S. Thothela**, M Cur graduate  
University of Pretoria

**A.E. van der Wath**, PhD  
University of Pretoria  
Department of Nursing Science  
Corresponding author: email: [annatjie.vanderwath@up.ac.za](mailto:annatjie.vanderwath@up.ac.za)

**E.S. Janse van Rensburg**, D Cur  
University of South Africa  
Department of Health Studies

## ABSTRACT

This study explored the factors contributing to relapse of mental health care users (MHCUs) treated for substance-induced psychotic disorder in a public psychiatric hospital in Gauteng, South Africa. A qualitative, explorative, descriptive and contextual research design was followed. The study was conducted at the outpatient department of the hospital. Participants were selected purposefully from MHCUs visiting the outpatient department for follow-up. Ten semi-structured interviews were used to collect data until data saturation occurred. The transcribed interviews and field notes were analysed using Tesch's method of qualitative data analysis. The researcher and an independent coder reached consensus on the categories, sub-categories and themes. Trustworthiness was ensured through application of the strategies of dependability, transferability, conformability, credibility and authenticity.

The findings explicated the factors contributing to relapse of MHCUs treated for substance-induced psychotic disorder in a psychiatric hospital. These factors included psychological, physical and social factors. Recommendations were provided for psychiatric nurses in terms of therapeutic programme planning and involvement of the community and family in the management of MHCUs treated for substance-induced psychotic disorder.

**KEYWORDS:** mental health care users relapse, substance-induced psychotic disorder, mental health services in South Africa

## **INTRODUCTION AND BACKGROUND INFORMATION**

Worldwide, around one in 20 people aged 15–64 years has used illicit drugs during the previous year. The most widely used drug, cannabis, is associated with psychosis and other mental disorders, especially during young adulthood (Degenhardt & Hall, 2012:58–65).

The adverse health effects of substance misuse on young people are either related to intoxication, dependence or chronic use and include overdoses, accidental injuries and violence; bacterial and viral infections; chronic disease; and mental disorders (Degenhardt & Hall, 2012:60). Substance misuse is associated with high rates of co-morbid psychiatric disorders such as mood, anxiety and psychotic disorders (Weich, 2007:295–296). Substance-induced psychotic disorder, characterised by psychosis during or within one month of substance intoxication or withdrawal (American Psychiatric Association, 2013:488–489), affects a person's affective responses and cognitive processes and results in an impaired ability to recognise reality (Sadock & Sadock, 2007:281).

Substance dependence is mostly treated at drug rehabilitation centres, but patients with substance-induced psychotic disorder require integrated treatment in which the psychiatric disorder and the addiction can be managed at the same facility. Comprehensive management includes: psychiatric assessment; psychiatric hospitalisation when the person poses a threat to him or herself; anti-psychotic medication; and individual, group and family psychotherapy (Sadock & Sadock, 2007:389, 521; Burnett, Porter & Stallings, 2011:856).

## **STATEMENT OF THE RESEARCH PROBLEM**

The researcher, working as a psychiatric nurse in the public psychiatric hospital in Gauteng where this research was conducted, observed that MHCUs aged 18 to 35 were often re-admitted with substance-induced psychotic disorders after relapse. This tendency was confirmed by the unpublished statistics of the hospital, which showed an increase in young people admitted and readmitted with substance-induced psychotic disorders during 2008 and 2009.

Weich (2007:296–298) states that MHCUs who misuse substances might need more than one intervention before they reach long-term recovery. The higher relapse rates associated with substance-induced psychiatric disorders contribute to higher treatment costs, impairments, unemployment and interpersonal problems (Weich & Pienaar, 2009:214). Factors contributing to relapse include availability of substances, interpersonal and psychological problems and social stressors, but more research is required to understand these factors and prevent relapse in MHCUs with substance-

induced disorders (Dingwall, Maruff, Clough & Cairney, 2012:44; Drake, Wallach & McGovern, 2005:1297–1301).

The research question was: What factors contribute to the relapse of MHCUs treated for substance-induced psychotic disorder in a public psychiatric hospital in Gauteng?

## **PURPOSE OF THE STUDY**

The purpose of the research was to explore and describe the factors contributing to relapse in MHCUs treated for substance-induced psychotic disorder in a public psychiatric hospital in Gauteng.

### **Definition of concepts**

**Substance-induced psychotic disorder** refers to a reversible substance-specific syndrome, characterised by psychosis, due to recent ingestion of or exposure to a psychoactive substance. Psychosis is characterised by perceptual disturbances (delusions and hallucinations) and disorganised speech and behaviour (American Psychiatric Association, 2013:87–88; Sadock & Sadock, 2007:87).

**Relapse** refers to an MHCU diagnosed with substance-induced psychotic disorder that presented with a return of the signs and symptoms related to the repeated use or abuse of substances after discharge, leading to readmission to a specific psychiatric hospital (Kneisl & Trigoboff, 2013:325).

**Mental health care user (MHCU)** is a person receiving care, treatment and rehabilitation services at a health establishment aimed at enhancing his/her mental health status (Mental Health Care Act no 17 of 2002). In this article, an MHCU refers to a person aged 18 to 35 who, after having been hospitalised for substance-induced psychotic disorder, was discharged, but then relapsed and had to be readmitted to the same psychiatric hospital.

## **RESEARCH METHODOLOGY**

The research design was explorative, qualitative, descriptive and contextual in nature (Polit & Beck, 2012:17).

### **Population and sampling**

The population consisted of all outpatient MHCUs between the ages of 18 and 35 who were part of the follow-up programme after they had been treated for relapse of substance-induced psychotic disorder at a psychiatric hospital in Gauteng.

Purposive sampling (Polit & Beck, 2012:291) was used to select the participants. A sample of 10 MHCUs was selected based on data saturation (Polit & Beck, 2012:62). Participants were selected using the following sampling criteria: aged between 18 and 35 years; diagnosed with and treated for substance-induced psychotic disorder in the public psychiatric hospital for two years or less prior to commencement of the research; a history of relapse related to the use or misuse of substances; and willingness to participate and give informed consent for participation.

### **Data collection**

The data sources included interviews and field notes. The researcher bracketed preconceived ideas regarding the research phenomenon. This was obtained through monthly contact sessions during which the researcher, in collaboration with the supervisors, explored any possible viewpoints that could lead to bias during the interviews to enhance the neutrality of data collection. A pre-test interview, excluded from the data analysis, was conducted to refine the data collection methods and questioning technique. The researcher used semi-structured interviews and asked open-ended questions after written informed consent had been obtained from participants. The interviews were conducted from June 2011 to January 2012 in a private office in the outpatient department of the psychiatric hospital where the MHCUs usually attended the follow-up programme. The researcher asked participants to describe factors that contributed to their relapse after discharge from the psychiatric hospital. Field notes, which included observational, methodological, theoretical and personal notes, served as an additional data collection source (Polit & Beck, 2012:548–550).

### **Data analysis**

Tesch's method of open coding (in Creswell, 2009:125) was used to analyse data after verbatim transcriptions of the individual interviews were made. Content analysis was applied to classify the data into themes and categories. The coding process entailed the reading of all transcripts to get a sense of the whole. Transcripts were read several times and clustered together according to similar topics. The topics were translated into codes and related into themes and categories.

The transcripts were analysed individually by the researcher and an independent coder, to compare and discuss themes and decide on the final categorisation of the data during a consensus meeting. The findings obtained were verified with the applicable and available literature to place the findings within the context of current research on the topic. Recommendations to psychiatric nurses were formulated on the basis of the findings.

## **TRUSTWORTHINESS**

Lincoln and Guba's framework (in Polit & Beck, 2012:584–595) for enhancing trustworthiness was applied in this study. Dependability and confirmability were ensured through using an independent coder to analyse the data. Credibility was obtained by prolonged engagement – data were collected over a period of six months. The researcher reflected on and recorded her assumptions regarding the study phenomenon to avoid personal bias. To ensure authenticity, the multiple realities experienced by participants were reflected through their direct quotations in the findings. To help determine transferability of the findings, a detailed and in-depth description of the research processes and a literature control, comparing the study findings with similar studies, were carried out.

## **ETHICAL CONSIDERATIONS**

Approval to conduct the study was granted by the Research Ethics Committee of the Faculty of Health Sciences of the University of Pretoria and the psychiatric hospital where the study was conducted. Respect for human dignity was adhered to by obtaining informed consent from every participant after the procedures, possible risks and benefits of the research had been explained to them. Participants were assured that they could withdraw from the research at any time without incurring any negative consequences.

Data collected from the participants were treated confidentially and anonymity was protected by identifying participants with a research number only.

## **RESEARCH FINDINGS**

### **Participants' demographic profile**

The participants' ages ranged between 18 and 35 years. Ten African adult males participated in the study. All participants had a dual diagnosis of substance abuse and psychosis, and had received treatment for more than one psychotic episode after relapse.

### **Themes and categories**

Table 1 outlines the themes and categories discussed in this article.

**Table 1: Factors contributing to relapse of mental health care users treated for substance-induced psychotic disorder**

THEMES	CATEGORIES
Psychological factors contributing to relapse	Emotional upheaval Psychological dependence Spiritual discontent
Physical factors contributing to relapse	Insomnia Physical dependence
Social factors contributing to relapse	Family relationship problems Unhealthy peer relationships Co-dependent relationship with drug dealers Lack of self-reliance Social tolerance for substance abuse Ready availability of substances Lack of stimulation and structure

**Psychological factors contributing to relapse**

The psychological factors contributing to relapse were classified into three categories: emotional upheaval, psychological dependence, and spiritual discontent.

Emotional upheaval referred to a painful emotional state such as feelings of sadness and helplessness. Participants verbalised that they yearned for relief of these painful emotions and for the positive emotional state associated with substance use:

*“... it’s like each and everyone has his or her own problem, you smoke because you’ve got your own problems that you want to feel free or less stressed of”.*

*“A kick means you get the feeling that you’ve been longing for, you feel so high in your own world.”*

One participant explained how the loss of a significant family member contributed to painful emotions and subsequent relapse:

*“I felt heartbroken and helpless because the person who was taking care of me died; I had no one to pay for my school.”*

Participants experienced the psychological dependence on substances as an urge to re-use substances:

*“... I agree with the saying from rehab that once you use drugs you are hooked up for life .... I am willing to quit but they say that feeling and memory will always haunt you.”*

Cravings were associated with the psychological dependence:

*“It has a negative effect because it has its own way of craving .... I had a serious urge to get drugs so intense that my mind could not concentrate on the things around me.”*

Spiritual discontent was presented by participants as a sense of worthlessness. Participants expressed feelings of inferiority, self-neglect and a life without a purpose:

*“I felt like I am a failure in life. Boys of my age are now doing Grade 12 ...”*

*“... we end up behaving very strange, neglecting our health, roaming around with no aim and sometimes talking and laughing alone”.*

### **Physical factors contributing to relapse**

The physical factors contributing to relapse presented as participants' need to relieve insomnia and symptoms of physical dependence.

While some of the participants had a problem with insomnia even before they started to use substances, others verbalised that they used substances to help them sleep. However, sometimes the substances did not have the desired relaxing effect:

*“I usually struggle to get my sleep, I can be in bed for 2 to 3 hours struggling to sleep .... I have to take few puffs [smoking marijuana] and I sleep very well.”*

*“Dagga helps me to sleep well and forget about everything. I can sleep from 9 to 9 ....”*

Physical dependence refers to tolerance and withdrawal. Participants verbalised that they started smoking tobacco or marijuana to relieve withdrawal symptoms, resulting in an escalation to the use of more potent substances:

*“There is a demanding feeling; mostly I will shake extremely.”*

*“... drugs are very dangerous and addictive and you might not get the kick that you want, then you will start using more dangerous drugs which has a negative effect ... and are more addictive than others”.*

## **Social factors contributing to relapse**

The participants pointed out the following social factors that contributed to relapse: family relationship problems, unhealthy peer relationships, co-dependent relationships with drug dealers, lack of self-reliance, social tolerance for substance use, readily availability of substances and a lack of stimulation and structure.

Most participants blamed themselves for the disruptions in their family relationships and lived with guilt for causing distress in their families. Others related the family challenges to a lack of support and understanding from the family. The following quotations illustrate these findings:

*“I can’t keep any relationship except the people I am doing drugs with ....”*

*“I don’t know how I will forgive myself on this one because they [parents] look disappointed as well. I can see it on [in] their eyes they don’t look at it [substance abuse] as a mistake. They think it was intentionally.”*

The participants shared with the researcher that unhealthy peer relationships contributed to their involvement in substance misuse and maintained the habit of substance misuse. One confirmed that, after hospitalisation, they did not change these unhealthy relationships by stating:

*“I used drugs again because I did not change my playground. I hanged out with the same group of people.”*

Peer pressure caused participants to give in to the demands of their friends to start using substances again as this participant described:

*“Every day at school, they will tell girls that I am a fool .... They were calling me names seeing that I am resistant to drug use.”*

A co-dependent relationship with drug dealers refers to participants being controlled or manipulated by drug dealers. Some participants felt like victims in the co-dependent relationship and verbalised that the drug dealers contributed to their relapse:

*“They [drug dealers] actually don’t help. Instead they destroy us because even if you don’t have money to buy or you don’t want the stuff that day he will want you to come and get credit for the stuff ... for the police not to get evidence.”*

Participants verbalised that unemployment, financial dependence and reliance on others led to feelings of anger, frustration and hopelessness:

*“I was angry ... I re-used the drugs then to try and forget about school and who will finance me if I passed.”*

*“It makes me feel bad, because I can’t provide for myself, I can’t do anything for myself, even if I die no one will understand because currently there is no one involved in my life.”*

Despite the social and legal sanctions on substance misuse, participants experienced tolerance and acceptance of substance misuse in the communities where they stayed:

*“Environmental factors because youth in my area get easily influenced by just seeing people doing drugs ...”*

*“It’s the environment that I was staying in ... people in that place take drugs as an activity to have fun.”*

Participants mentioned that they felt tempted to use and misuse substances again because it seemed to be easily accessible and readily available within the communities:

*“I was using marijuana because it is easily found and cheaper ... sometimes when I met these friends of mine we will take nyaope [a mixture of marijuana and heroin].”*

Participants complained that a lack of stimulating activities and personal structure in their lives contributed to their continuing to use substances. They seemed to find it difficult to spend their time in a meaningful way:

*“I used to go to the gym but then I stopped going there ... it kept me busy for a while but it also cost me some money because I felt lazy to walk, so I would rather keep money to buy weed [marijuana].”*

*“I was just roaming around, having plenty of time at home not doing anything.”*

## **DISCUSSION**

The research indicated that psychological, physical and social factors contributed to relapse of MHCUs treated for substance-induced psychotic disorder. Psychological factors, which contributed to relapse were described as emotional upheaval, psychological dependence and spiritual discontent. Similarly Dingwall, Maruff, Clough and Cairney (2012:44) suggested a correlation between psychological factors such as emotional distress and substance abuse relapse.

Participants described their struggle with both physical and psychological dependence. A systematic review by Smith et al. (2013) indicated that “psychological dependence” as conceptualised in the literature is associated with cravings, loss of control and compulsions, which may refer to substance seeking behavior. The phenomenon of substance misuse to alter mood is also described as a form of psychological dependence. Physical dependence refers to the tolerance and withdrawal symptoms that develop

after long-term use of substances. Tolerance indicates that the person requires more of the substance to experience the same effects and to avoid withdrawal symptoms such as tremors, diarrhoea, sweating, nausea and insomnia (Nutt, King, Saulsbury & Blakemore, 2007:1048; Newlin, 2011:967).

Research findings vary about the duration, nature of cravings and the role it plays in substance misuse relapse. Preuss, Watzke, Zimmermann, Wong and Schmidt (2010:136) indicate that 41% of marijuana users experienced elevated levels of cravings during periods of abstinence. Metamphetamine users reported a decrease in cravings that ended in two to three months of remaining abstinent (Galloway, Singleton, Buscemi, Baggott, Dickerhoof & Mendelson 2010:512). Cocaine abstinence has been connected to symptoms of anxiety and depression (García-Fuster, Flagel, Mahmood, Watson & Akil, 2012:1). A study by Preston and Epstein (2011: 33) indicated that stress and negative emotions were associated with cravings for substances. Although cravings are believed to play a definite role as a motivator for substance misuse and relapse, a study by Newton, De La Garza, Kalechstein, Tziortzis and Jacobsen (2009:298) found that only 36% of users believed that craving contributed to their relapse. The participants indicated “pleasure seeking” and “pain avoidance” as important motivators for substance misuse.

Certain substances can aid the onset of sleep. Insomnia can result in substance misuse and may result in adolescents experimenting with marijuana (Mednick, Christakis & Fowler, 2010:7).

Social factors contributing to relapse include problematic family and peer relationships, co-dependent relationships with drug dealers, lack of self-reliance, social tolerance of substance misuse, ready availability of substances and a lack of stimulation and structure. Research findings confirm similar social factors contributing to relapse, but also indicate that social factors can play a positive role in recovery.

While a lack of family support may play a role in substance misuse (Staring, Van der Graag, Koopmans, Selten, Van Beveren, Hengeveld, Loonen & Mulder, 2010:453), the burden experienced by the family members of a person with substance misuse has an impact on the functioning of the family (Mattoo, Nebhinani, Kumar, Basu & Kulhara, 2013:708). Family therapy is crucial to the family’s transition (Langfield, MacIntyre & Turner 2010:3) to become a functional, balanced system contributing to the substance user’s recovery.

Young people who misuse substances in their peer group have easier access to substances and may perceive substance misuse as socially acceptable and legitimate. On the other hand, peer support (Shekhtmeyster, Sharkey & You, 2011:398–399) can play an important role in the recovery process. Polcin, Mulia and Jones (2012:150) indicated the effectiveness of recovered substance users confronting their peers misusing substances.

A study conducted in the United States of America (Sun, 2007:14) indicated the central role of drug dealers in relapse, as dealers increase the availability and access to drugs. Having a mental health problem can expose substance users to being targeted and exploited by drug dealers (Clutterbuck, Tobin, Orford, Copello, Preece, Birchwood, Day, Graham, Griffith & McGovern, 2009:320). According to a Canadian study (Firestone & Fischer 2008:1), substance use preferences and behaviours are influenced by the availability of drugs. The ready availability of substances, as indicated by participants in the study, contributed to their relapse. Ogilvie, Gruer and Haw (2008:395) found that young people in the United Kingdom reported little difficulty in obtaining illegal substances, alcohol and tobacco through a range of social and illegal sources.

A study reviewing leisure time and the relationship with substance misuse among adolescents in eight African countries revealed that five hours or more spent sitting in a day were “highly associated with all substance use variables” (Peltzer, 2010:275). Although participants in this research mentioned the availability of sporting facilities as a means to combat the lack of stimulation and structure, there is little evidence that sporting schemes alone are effective in reducing substance misuse among male adolescents (Sekulic, Ostojic, Ostojic, Hajdarevic & Ostojic, 2012:11). The temptation to use drugs seems to be difficult to resist for persons diagnosed with co-occurring mental illness and substance misuse, as they often struggle to avoid boredom and find satisfying activities, relationships and social roles. Preston and Epstein (2011:35) indicated that stress increases cravings for substances and may trigger the temptation to use substances.

## **CONCLUSION**

The findings in this study indicated physical, psychological and social factors that contribute to relapse in substance-induced psychotic disorder.

It seems as if the MHCUs with a dual diagnosis of substance misuse and psychosis find it difficult to resist the cravings associated with substance misuse. Psychological dependence, especially the use of substances to cope with emotional upheaval, contributes to relapse. Participants use substances to cope with physical discomfort, painful emotions during stressful times and feelings of worthlessness. Their apparent lack of coping skills, their inability to structure their lives and an environment lacking stimulation, make it challenging for them to resist the availability of substances in the community, peer pressure and pressure from drug dealers. While family relationships play a vital role in substance dependence recovery, some participants experienced a lack of family support. They seemed to realise that their substance misuse and related behaviour contributed to problematic family relationships.

## RECOMMENDATIONS

Awareness of the factors contributing to relapse can help health care providers to structure rehabilitation programmes. Psychiatric nurses can play a vital role in combating the psychological factors contributing to relapse by restructuring the current inpatient and outpatient therapeutic programme employed at the psychiatric hospital for MHCUs with substance-induced psychotic disorder. For example, coping skills and assertiveness training, time management and spiritual growth groups could be included in the therapeutic programme. The focus should be on helping MHCUs find meaning and purpose in life. With regard to the social factors influencing relapse, psychiatric nurses should advocate for family and community involvement in the treatment and rehabilitation of MHCUs with substance-induced psychotic disorders.

Future research topics may include the assessment and development of a comprehensive awareness and support programme for recovering MHCUs and their family members. The exploring of MHCUs' adjustment and re-integration in the community could help in evaluating and recommending appropriate and feasible interventions.

## LIMITATIONS

The research was conducted in only one psychiatric hospital in Gauteng. There is a need for further research in other psychiatric hospitals to compare the findings and to gain a more comprehensive understanding of the research phenomenon. The findings may appear one dimensional as no contrasting themes were identified in the data.

## ACKNOWLEDGEMENTS

We express our gratitude to the hospital management that granted permission for this study to be conducted and we are grateful to the MHCUs who agreed to be participants and disclosed information about factors contributing to their relapse.

## REFERENCES

- American Psychiatric Association. 2013. *Diagnostic and statistical manual of mental disorders*. 5<sup>th</sup> Edition. Washington, DC: American Psychiatric Association.
- Burnett, R., Porter, E. & Stallings, K. 2011. Treatment options for individuals with dual diagnosis. *Journal of Human Behavior in the Social Environment*, 21(7):849–857.
- Clutterbuck, R., Tobin, D., Orford, J., Copello, A., Preece, M., Birchwood, M., Day, E., Graham, H., Griffith, E. & MCGovern, D. 2009. Exploring the attitudes of staff working within mental health settings toward clients who use cannabis. *Drugs: Education, Prevention and Policy*, 16(4):311–327.

- Creswell, J.W. 2009. *Research design: qualitative, quantitative, and mixed methods approaches*. 3<sup>rd</sup> Edition. Thousand Oaks: Sage.
- Degenhardt, L. & Hall, W. 2012. Extent of illicit drug use and dependence, and their contribution to the global burden of disease. *Lancet*, 379(Addiction 1):55–70.
- Dingwall, K.M., Maruff, P., Clough, A.R. & Cairney, S. 2012. Factors associated with continued solvent use in indigenous petrol sniffers following treatment. *Drug and Alcohol Review*, 31(1):40-46.
- Drake, R.E., Wallach, M.A. & McGovern, M.P. 2005. Future directions in preventing relapse to substance abuse among clients with severe mental illnesses. *Psychiatric Services*, 56(10):1297–1302.
- Firestone, M. & Fischer, B. 2008. A qualitative exploration of prescription opioid injection among street-based drug users in Toronto: behaviours, preferences and drug availability. *Harm Reduction Journal*, 5:30.
- Galloway, G.P., Singleton, E.G., Buscemi, R., Baggott, M.J., Dickerhoof, R.M. & Mendelson, J.E. (for The Methamphetamine Treatment Project Corporate Authors). 2010. An examination of drug craving over time in abstinent methamphetamine users. *The American Journal on Addictions*, 19:510–514.
- García-Fuster, M.J., Flagel, S.B., Mahmood, S.T., Watson, S.J. & Akil, H. 2012. Cocaine withdrawal causes delayed dysregulation of stress genes in the hippocampus. *PLoS ONE*, 7(7):e42092.
- Kneisl, C.R. & Trigoboff, E. 2013. *Contemporary psychiatric-mental health nursing*. 3<sup>rd</sup> Edition. Upper Saddle River, New Jersey: Prentice Hall.
- Langfield, P.A., MacIntyre, M. & Turner, J.G. 2010. Adolescent alcohol and drug abuse. Colorado State University Extensions. Available from: [www.cyfernet.org/pagelist.php?c=1174](http://www.cyfernet.org/pagelist.php?c=1174) (Accessed 10 November 2013)
- Mattoo, S.K., Nebhinani, N., Kumar, A., Basu, D. & Kulhara, P. 2013. Family burden with substance dependence: a study from India. *Indian Journal of Medical Research*, 137(4):704–711.
- Mednick, S.C., Christakis, N.A. & Fowler, J.H. 2010. The spread of sleep loss influences drug use in adolescent. *Social Networks*. PLoS ONE 5(3):e9775.
- Newlin, D.B. 2011. Are “physiological” and “psychological” addiction really different? Well, no! ... um, er, yes? *Substance Use & Misuse*, 43:967–971.
- Newton T.F., De La Garza, R., Kalechstein A.D., Tziortzis D. & Jacobsen, C.A. 2009. Theories of addiction: methamphetamine users’ explanations for continuing drug use and relapse. *The American Journal on Addictions*, 18:294–300.
- Nutt, D., King, L.A., Saulsbury, W. & Blakemore, C. 2007. Development of a rational scale to assess the harm of drugs of potential misuse. *Lancet*, 369:1047–1053.
- Ogilvie, D., Gruer, L. & Haw, S. 2008. Young people’s access to tobacco, alcohol, and other drugs. *British Medical Journal*, 331:393–396.
- Peltzer, K. 2010. Leisure time physical activity and sedentary behavior and substance use among in-school adolescents in eight African countries. *International Journal of Behavioral Medicine*, 17(4):271–278.
- Polcin, D.L., Mulia, N. & Jones, L. 2012. Substance users’ perspectives on helpful and unhelpful confrontation: implications for recovery. *Journal of Psychoactive Drugs*, 44(2):144–152.
- Polit, D.F. & Beck, C.T. 2012. *Nursing research: generating and assessing evidence for nursing practice*. 9<sup>th</sup> Edition. Philadelphia: Lippincott Williams & Wilkins.
- Preston, K.L. & Epstein, D.H. 2011. Stress in the daily lives of cocaine and heroin users: relationship to mood, craving, relapse triggers, and cocaine use. *Psychopharmacology*, 218(1):29–37.

- Preuss, U.W., Watzke, A.B., Zimmermann, J., Wong, J.W. & Schmidt, C.O. 2010. Cannabis withdrawal severity and short-term course among cannabis-dependent adolescent and young adult inpatients. *Drug and Alcohol Dependence*, 106(2–3):133–141.
- Sadock, B.J. & Sadock, V.A. 2007. *Kaplan & Sadock's synopsis of psychiatry: behavioral sciences/clinical psychiatry*. 10<sup>th</sup> Edition. Philadelphia: Lippincott Williams and Wilkins.
- Sekulic, D., Ostojic, M., Ostojic, Z., Hajdarevic, B. & Ostojic, L. 2012. Substance abuse prevalence and its relation to scholastic achievement and sport factors: an analysis among adolescents of the Herzegovina-Neretva Canton in Bosnia and Herzegovina. *BioMed Central Public Health*, 12:274. Available at: <http://www.biomedcentral.com/1471-2458/12/274> (Accessed 10 November 2013).
- Shekhtmeyster, Z., Sharkey, J. & You, S. 2011. The influence of multiple ecological assets on substance use patterns of diverse adolescents. *School Psychology Review*, 40(3):386–404.
- Smith, S.M., Dart, R.C., Katz, N.P., Paillard, F., Adams, E.H., Comer, S. D., Degroot, A., Edwards, R.R., Haddox, J.D., Jaffe, J.H., Jones, C.M., Kleber, H.D., Kopecky, E.A., Markman, J.D., Montoya, I.D., O'Brien, C., Roland, C.L., Stanton, M., Strain, E.C., Vorsanger, G., Wasan, A.D., Weiss, R.D., Turk, D.C. & Dworkin, R.H. 2013. Classification and definition of misuse, abuse, and related events in clinical trials: ACTTION systematic review and recommendations. *PAIN*, 154(11):2287–2296.
- South Africa. *Mental Health Care Act, no 17 of 2002*. Pretoria: Government Printers.
- Staring, A.B.P., Van der Graag, M., Koopmans, G.T., Selten, J.P., Van Beveren, J.M., Hengeveld, M.W., Loonen, A.J.M. & Mulder, C.L. 2010. Treatment adherence therapy in people with psychotic disorders: randomised controlled trial. *British Journal of Psychiatry*, 197(6):448–455.
- Sun, A. 2007. Relapse among substance-abusing women: components and processes. *Substance Use & Misuse*, 42:1–21.
- Weich, L., 2007, Alcohol and other substance-use disorders. In Bauman, S.E. (ed.), *Primary health care psychiatry*, 290–346. Kenwyn: Juta.
- Weich, L. & Pienaar, W. 2009. Occurrence of comorbid substance use disorders among acute psychiatric inpatients at Stikland Hospital in the Western Cape, South Africa. *African Journal of Psychiatry*, (12):213–217.