

RISK FACTORS OF POLYSUBSTANCE USE DISORDER AND EFFICACY OF HARM REDUCTION AMONG ADULTS IN STREET SITUATIONS IN SELECTED CITIES IN NIGERIA

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ABSTRACT

This study investigated the risk factors and associated consequences of polysubstance drug use disorders among adults in street situations in selected cities in Nigeria and knowledge of psychological intervention of harm reduction among them. There is a dearth of empirical studies among this population as results of previous studies concentrated on inpatient and outpatient populations that are easily accessible to researchers and clinicians, therefore, exploring the lived experience of polysubstance use and knowledge of harm reduction among this population. Direct Field Observation, Focus Group Discussion (FGD), and In-depth Interview (IDI) were used to elicit information from male and female participants aged 25 to 65 years with over 10 years active use of polysubstance drugs. The Global Assessment of Relational Functioning (GARF) Scale was used to measure the overall level of functioning on problem-solving, organisation, and emotional climate. Heavy use of drugs among this population stimulated different behaviours such as intoxication and harm, risky sexual behavior, morbidity and mortality, and increased loss or unstable source of livelihood. Extensive use of different drugs simultaneously and concurrently over a long period of years increased the difficulty of seeking treatment and health-compromising behaviors. This also has great implications for harm reduction and policy that could integrate adults in street situations into treatment modalities.

Keywords: Harm reduction, Poly-substance use, Adults in street situations, Life skills training

INTRODUCTION

This study investigated the risk factors and associated consequences of polysubstance drug use disorders among adults in street situations in selected cities in Nigeria and how to

facilitate the efficacy of psychological intervention of harm reduction among them which will, in turn, guide policy formation and advocacy. There is a dearth of empirical studies among adults in street situations because most of the previous studies concentrated on inpatients (Hunt, Malhi, Cleary, Lai, &

Sitharthan, 2016; Timko, Ilgen, Haverfield, Shelley, & Breland, 2017) and outpatient populations (Bonfiglio, Portoghese, Renati, Mascia, & Penna, 2022; Woodward, Wilens, Glantz, Rao, Burke, & Yule, 2023) and undergraduates (Musyoka, Mbwana, Donovan, & Mathai, 2020) that are easily accessible to researchers and clinicians. Therefore, this study looked at risk factors of heavy polysubstance use disorders among adults in a street situation, examined the common consequences of heavy polysubstance use disorders among adults in street situation and explored the possibility of harm reduction and its efficacy among adults in street situation. What are the risk factors of heavy polysubstance use disorders among adults in street situations? What are the common consequences of heavy polysubstance use disorders among adults in street situations? Would harm reduction be efficacious among adults in street situations?

Adults in street situations have their day-to-day existence in the city in some metropolitan slum areas. They were living in an extreme poverty condition that was characterised by inadequate and contaminated shelters with a lack of potable water. They generally hang out for economic gain through what they call hustling for daily survival (Olley, 2006; Whitbeck & Hoyt, 1999), and have a history of different classes of substances used over a long period over ten years. Reported reasons for substance abuse have been for having synergistic effects of combining different psychoactive substances and counteracting the potency of other

substances. Polysubstance has also been used as self-medication for prolonged or chronic physical or mental conditions (Valente et al., 2020). A systematic review that covered a period of 12 years - 2010 to 2021 - documented that polysubstance use is motivated by expectation and experience of substance effects; to alleviate withdrawal symptoms; to prolong the effects and potency of a substance; to reduce the effects of another substance; to mimic the effects of expensive or unavailable substances or for self-medications of pre-existing physical or and mental health conditions (Boileau-Falardeau, Contreras, Gariépy & Laprise, 2022).

There is an intersection between experiencing street life and substance misuse (Nicholls & Urada, 2021). Adults living in street situations suffer several issues and difficulties in accessing and practising harm reduction therapies, among people on the street situation in the United States of America, evidence of an increase in substance use and opioid overdoses has been established (Nicholls & Urada, 2021). Some of the common challenges faced by adults in street situations in harm reduction are issues with a circle of friends and network of support, access to institutional-based formal treatment facilities, and challenges associated with living in street situations, adults living in the street situation are hard to reach for research and those with substance misuse are even more difficult to get to either for research or for or for harm reduction (Nicholls & Urada, 2021). Some of the identified direct costs of polysubstance to society and government are the cost of

treatment, cost of medical care, and cost of mental health care, while the indirect costs are lost productivity as a result of premature mortality, underemployment, unemployment, and high rate of labour turn over, absenteeism, presenteeism, disability and incarceration also opioid-induced labour market exits have reduced state and federal tax revenues (Segel et al., 2019).

The risk factors implicated in heavy polysubstance use disorder are poverty, inadequate habitation, existing mental health conditions, trauma, social network, inconsistent social support, availability, and access to diverse substances due to the street drug market dynamic (Boileau-Falardeau, et al, 2022). Consequences of heavy polysubstance use disorders are multidimensional in their effects on personal, interpersonal, and occupational levels of functioning. Impairment in the level of relationship functioning or dysfunctional relationship with significant others. Occupational functioning is also impaired or distorted. A maladaptive defence mechanism is employed for both internal and external stressors (APA, 2000). Absence of fundamental abilities could prompt trouble in getting work and ensuing joblessness might prompt dissatisfaction and outrage which may thus prompt maladjustment and substance misuse (Spooner & Hetherington, 2004; APA, 2013). Adults in the street situation are presented

with substances (for example liquor, weed/cannabis, Non-prescription medications, and native psychoactive substance) at an extremely young age (NDLEA, 1997; Odejide, 1993; Oshodi, & Ikeji, et al. 2009; Valente, et al. 2020; Boileau-Falardeau, et al. 2022). Substance abuse gets to the stage where an individual keeps on utilising substances no matter what the impedance to other parts of their lives, in terms of physical; mental; social; monetary status, others, and climate (APA, 2000, APA, 2013).

Harm reduction is aimed at reducing the consequences of heavy polysubstance use over some time without insisting on total abstinence. Different forms of harm reduction have been shown to be efficacious among different populations in different settings (Botvin et al., 2000), but some of the challenges among adults in street situations in implementing harm reduction intervention are because they are hard to reach populations; they displayed a high level of resistance to change, they are difficult to engage. Also, the transient nature and mobility of adults in street situations, cooccurring mental disorders, and deficiency in life skills have made the efficacy of harm reduction a tall task to attain (Timko et al., 2017; Valente et al., 2020). By utilising two qualitative approaches—focus group discussions and in-depth interviews—this study aimed to fill the void in the literature by addressing these three questions with street-based polysubstance users.

METHODS

Direct Field Observation, Focus Group Discussion (FGD), and In-depth Interview (IDI) were used to elicit information from male and female participants aged 25 to 65 years with more than 10 years of active use of polysubstance drugs. The Global Assessment of Relational Functioning (GARF) Scale was used to measure the overall level of functioning on problem-solving, organisation, and emotional climate; the Social and Occupational Functioning Assessment Scale (SOFAS) was used to measure social and occupational functioning; while Defensive Functioning Scale was used to assess their coping style.

Study Site, Participants, and Interview

This study was conducted among hard-to-reach adults in street situations in selected high-density areas where adults in street situations gathered in Ikeja, Lagos State; Ibadan, Oyo State and Abuja, Federal Capital City, Nigeria. Twenty-seven (27) adults in street situations participated, while others were observed directly while interacting with the "Seeds" of the respondent-driven sampling techniques. Three Focus Group Discussions (FGDs) were conducted with 20 males and 2 females (ages 25-65), the willing participants were hustlers (engaging in any form of transactions that could generate money); the first FGD had seven (7) participants, the second FGD had nine (9) participants while the third had six (6) participants respectively. In-depth Interviews (IDI) had five (5) different

individuals at the selected locations, one (1) at Abuja, two (2) at Ikeja, and two (2) at Ibadan.

This study included twenty-two participants for the FGD and five participants for the IDI, those observed, were willing adults in street situations and they were very careful and reluctant to participate due to the law prohibiting the use of those substances that they engaged in until they were convinced that this was purely research-based activity. These participants met the following conditions for inclusion: they had used multiple substances for over ten years and were adults between the ages of 25 and 65 years. This study obtained approval (IRB number UI/EC/20/0498) and (UI/SSHEC/2021/0007), and participants filled out and signed the informed consent. Audio recordings of the FDGs and IDIs were made with participants' consent. Participants were anonymised with the use of alphabet codes instead of names.

Participants were recruited after contacts were made with an informant who served as one of the "seeds" The respondent-driven sampling technique (Crawford, 2016; Heckathorn, 2011; Heckathorn, 1997) was used to recruit other participants using coupons given to the "seeds", proper briefing was done for the participants before data was collected. Using an interview guide, the recorded FGD lasted about 75 minutes, (1) What are the risks that you can associate with your heavy use of different substances over this period of use? (2) in your view, what are the common consequences of heavy polysubstance use that you have experienced? What do

you think could be done for you to reduce the frequency of use? What do you think could be done for you to reduce the quantity that you normally use? Do you think you can reduce the use of multiple substances together? By (Pietkiewicz and Smith, 2014) additional probing was done on some of the questions asked.

Data Analysis

Verbatim transcribing was done on the recorded interviews and notes. The shared themes and subthemes were outlined with the Interpretative Phenomenological Analysis (IPA) method to generate a comprehensive narrative of themes and subthemes (Smith, 1999; 2011, Pietkiewicz and Smith, 2014). To improve the reliability of the data method, transcripts were coded, reviewed, and recorded. Data triangulation was carried out using FGDs and IDIs with various participants at various times. Additionally, some of the "seeds" participated in member checks by the researchers, offering comments and explanations. The selected quotations aim to convey the opinions of most adults in urban settings.

Results

Very high usage of drugs among this population appears to have stimulated different behaviors such as aggressive behavior, extortion, disability in the level of physical and psychological functioning, and increased loss or unstable source of livelihood. Heavy use of different drugs simultaneously and concurrently over a long period of years

increased the difficulty of seeking treatment. This also has great implications for the efficacy of harm reduction and policy that will integrate adults in street situations into treatment modalities. Some of the substances used concurrently or simultaneously are alcohol, Colorado, cigarettes, codeine, Rohypnol, cannabis/marijuana and its variants, valium, tramadol, dried pawpaw leaf, loud, crack cocaine, ice, and other local concoction mixed with herbs and substances. Key themes that emerged: Toxicity, risky sexual behavior, High employment turnover and underemployment, morbidity and mortality, and lack of knowledge of harm reduction and rehabilitation.

Toxicity

Among the hazardous ways of life exhibited by these participants are combinations of up to five different substances over more than ten years. This injurious practice tends to impact their functioning in several ways, both physically and mentally, at the same time:

Participant A, age 33, Male, FGD:

"When I take different substances and plenty of them, I feel restless with different forms of body pains and headache and difficulty in sleeping".

Participant C, age 30, Male, FGD::

"I will be very hungry whenever I take Colorado and can eat anything".

Participant K, age 33, Male, IDI:

"There is no day that goes by without having access to substances. Even if I do not have money my friend will buy for me".

Participant F, age 36, Male, FGD:

" I r e m a i n a w a k e whenever I take tramadol tablets...I will not be able to sleep".

The psychological trauma theory gives insights into this harm as a coping mechanism among adults in street situations whose childhood and adult lived experiences show traces of severe and chronic trauma (abuse; violence; homelessness; poverty and social exclusion). This harmful and dangerous pattern had different forms of effects on the physiology and psychology of adults in street situations. Various ways in which this harmful pattern manifests among this population are (i) acute toxicity which manifests as immediate and severe adverse effects such as distress, dry mouth, excessive thirst or hunger, and respiratory distress; (ii) chronic toxicity manifested as a long-term impairment to organs and overall quality of health; (iii) organ-specific toxicity such as the liver which was implicated for conditions such as cirrhosis and (iv) psychological toxicity which was implicated for mental health as manifested in depression and suicidality.

Risky sexual behavior

The desire to satisfy sexual urges is being filled partly by patronizing commercial

sex workers.

Participant B, age 33, Male, FGD:

"When I need a woman, I go to where I will see them and I pay for sex".

Participant K, age 36, Male, FGD:

"When I get to arouse sexually, I might not be able to make use of the condom because ..., and due to substances used for sex enhancement performance .. the extended duration of sexual activity, the condom may come off".

The health belief model of Irwin Rosenstock and Gordon Hochbaum explained the reasons why adults in street situations do not adhere to safe sex practice, a health-promoting behavior that determines individuals' decisions and actions. They usually patronise commercial sexual workers and pay for sex which is also subject to the amount available to such individuals at the particular time. They also stated that whenever they do not have money they simply endure the urge for sexual intercourse. However, the cost of sexual intercourse with commercial sex workers varies due to several factors.

High employment turnover and underemployment

A number of them attempted to pick up menial jobs to make ends meet.

Participant J, age 33, Male, IDI:

"I do go out to hustle in town for money".

Participant G, age 40, Male, FGD:

"I do CC that is Charge and collect (some adults in street situations ask traders that are around their hangout for money which they use for drugs or to buy food).

Participant M, age 38, Male, FGD:

"I do gambling every weekend and also hustle on the street to get money".

Participant K, age 33, Male, IDI:

"I used to work before... whenever I received my salary, I would be absent at my place of work until I spent all my money...I lost the job".

Among adults in street situations, learning difficulty and low self-efficacy can explain their lack of ability to acquire the required skill sets needed to hold on to a job. Also, the inability to delay gratification and negative peer influence of herd mentality of going with the group. Since money is the means of exchange, they have to look for it in several ways. Among their means is picking up low-defining menial jobs that require the use of power, and brute energy without any skill. Those who pick up wage-based jobs, usually could not hold up on the job for a long period which is usually due to low emotional intelligence.

Morbidity and mortality

Some physical and mental impairments

arose due to the excessive use of substances among this study population:

Participant "O", age 48, Female, FGD: "There was this day that I too mixtures of some Opioid and alcohol, as a result, my body system was not comfortable, and I just could not explain the adverse effect had on my system".

Participant L, age 33, Male, FGD:

"At times I do not know or understand the kind of feelings in my body".

Participant P, age 37, Male, FGD:

"One of my buddies used a lot of tramadol; he would take roughly 1500g in the morning and another 500–1000g at dusk. He took another dose early the next morning, which caused his heart failure".

This statement above usually refers to physical ailment or infirmity which are associated with the abuse of substance. The display of abnormal psychology is also visible based on clinical judgment under observation. Biopsychosocial theory explains the combinations of factors such as biological, psychological, and social that are associated with morbidity and mortality.

Lack of knowledge about harm reduction or rehabilitation

The participants demonstrated a lack of knowledge about harm reduction or rehabilitation facilities for the treatment of substance misuse disorder.

Participant M, age 38, Male, FGD

"That one will not be easy for me because of my friends that we engage in this together".

Participant N, age 27, Male, FGD

"You mean that there is a section in the Hospital where they could help me on the polysubstance use?"

Lack or low health-seeking behaviour accounted for their lack of knowledge of harm reduction techniques. Heavy abuse of different drugs simultaneously and concurrently over a long period of years increased the difficulty of seeking treatment and health-compromising behaviours. At the point of this study, adult in-street participants had not and were not participating in any drug treatment or rehabilitation programme. They even lacked knowledge of such formal institutions. They also expressed likely challenges that they would encounter in going through such programmes which include the environment where they hang out to carry out their daily activities and the lack of social support to engage in such pathways to recovery from substance misuse disorder.

Observation and clinical assessment

i) The Global Assessment of Relational Functioning (GARF) Scale, a continuum spanning from competent, ideal relational functioning to a disrupted, dysfunctional relationship, the scale represents the overall assessment of

the functioning. According to the assessment of adults living on the streets, their rates ranged from 40 to 20 on the GARF scale: A 40 suggests that there are times when relationships are clearly and severely dysfunctional, and there are huge problems that go unsolved during rare, satisfactory periods of interaction. To maintain continuity of touch and attachment, the rate of 20 specified relationship units has become too dysfunctional. There will be little effective communication among family members if they do not know where each other is. There is a generalised sense of cynicism and despair, little regard for other people's emotional needs, and hardly any dedication to one another's well-being.

ii) Social and Occupational Functioning Assessment Scale (SOFAS) It is not immediately impacted by the total intensity of the person's psychological symptoms; instead, it just concentrates on the person's degree of social and professional functioning. According to SOFAS, social and occupational functioning ranges from very well to severely handicapped. For an impairment to be taken into account, it must be a direct result of mental and physical health issues; lack of opportunity and other environmental constraints are not acceptable reasons. According to data, the majority of adults living on the streets had a code between 49 and 31: 49, which denoted a major impairment in social, occupational, or academic functioning as well as the inability to maintain employment. On

the other hand, those with the code of 31 indicated significance in several areas, including job, school, and family relationships, which might show up as defiance, incapacity to work, or neglect of family.

iii) Defensive Functioning Scale

Defense mechanisms (or coping styles) are psychological mechanisms that operate automatically to shield a person from anxiety and the knowledge of stressors or hazards, whether they are internal or external. People frequently don't realise how these procedures work. The way a person responds to emotional problems and both internal and external pressures is mediated by defense systems. The term "defense levels" refers to the conceptual and empirical division of the various defense mechanisms into related categories.

The study observed the group's level of dominating defenses and prominent defenses or coping methods.

The defensive functioning scale of adults in street situation

A. Displayed prominent defenses or coping styles during this study listed in order

1. Splitting
2. Rationalisation
3. Idealisation
4. Repression
5. projection
6. Acting out

7. delusional projection

B. At the time of the study, these participants' predominant defense mechanism was suppression.

There are therapeutic ramifications for the inappropriate use of defense or coping mechanisms that are observed in people from a variety of backgrounds and experiences.

DISCUSSION

The present study adopted an exploratory qualitative study among adults in street situations at different locations in Nigeria, all participants reported long-term heavy use of polysubstance, and they used different classes of substances. The findings of this study detailed substance toxicity – the ability of these substances to cause harm - and the consequence of polysubstance misuse disorder: Consequences of polysubstance use such risky sexual behaviour, high employment turnover and underemployment, morbidity and mortality, and lack of knowledge of harm reduction or rehabilitation. The commonly used substances among this population are alcohol, Colorado, cigarettes, codeine, Rohypnol, cannabis/marijuana and its variants, valium, tramadol, dried pawpaw leaf, loud, crack cocaine, ice, and other local concoctions mixed with herbs and substances.

The consequences found in this study were in line with previous studies; this study found that polysubstance

misuse leads to serious harm among adults in street situations which could be attributed to interactions of polysubstance (Evashkevich & Fitzgerald 2016; Dumbili, Ezekwe, & Odeigah, 2020). Related to earlier studies it was found that risky sexual behaviour was exhibited under the influence of polysubstance misuse with participants having casual sexual intercourse and having multiple sexual partners with unprotected sex (Desmennu, Titiloye, & Owoaje, 2018). This study also found the lack of employment-seeking behaviour, high employment turnover, and underemployment among the adults in street situations which reflected as a hindrance factor to adherence in harm reduction therapy as reported by Kidorf, Neufeld, and Brooner, (2004). The report on morbidity and mortality also corroborates the work of Evashkevich and Fitzgerald (2016) who documented high rates of morbidity and mortality among those who engaged in polysubstance misuse. Just as this study documented that adults in the street situation had not experienced rehabilitation or harm reduction, the study of Nicholls and Urada, (2021) and Saeland et al. (2014), also documented such findings among the polysubstance misuse population that was homeless

Conclusion

This study found some of the motivation, consequences, and lack of knowledge about harm reduction or rehabilitation facilities among most of the adults in street situations. This calls for the provision of psychoeducation

that is targeted at harm reduction with a scale-up of supervised sites for harm reduction to reduce the risks and consequences of polysubstance use disorder (Nicholls & Urada, 2021; Botvin et al., 2000). To bridge the gap between the knowledge about substance abuse and the results of intervention of harm reduction, there is a need for more studies that can provide real live monitoring of the substance consumed and integrate the information into wearable devices that can facilitate harm reduction with the aid of machine learning and artificial intelligence. Contextual factors that hindered adherence to therapy can be explored in further studies among adults in street situations.

Research limitations

This present study has some limitations. (1) it used three FDGs and 5 IDIs with adults in street situations, but this was strengthened by the use of IPA (Pietkiewicz & Smith, 2014), probing further to reach a level of saturation and observing this group in their natural hideout. Therefore. More FDGs and IDIs needed to be conducted at different locations. This study thus serves merely as a forerunner to other studies to be conducted. (2) This subgroup has a dynamic way of interaction and network which might be different from other groups of adults in street situations in other climes. Given this, the present study outcome might be different from other such groups in other locations.

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The authors declare no conflict of interest.

Authors contributions

Abayomi Daramola came up with the idea for the paper while Benjamin Oladapo Olley supervised and reviewed the content of this paper.

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