



**EFFICACY OF AN EMPOWERMENT EDUCATION INTERVENTION ON
SUBSTANCE USE AMONG ADOLESCENTS LIVING IN PERI-URBAN
COMMUNITIES IN ABUJA, NIGERIA**

By

SHUAIBU HASSANA OJONUBA

**Thesis Submitted to the School of Graduate Studies, Universiti Putra
Malaysia, in Fulfilment of the Requirements for the Degree of
Doctor of Philosophy**

July 2023

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfillment of the requirement for the degree of Doctor of Philosophy

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July 2023

Chairman : Associate Professor Haliza Abdul Rahman, PhD
Institute : Social Science Studies

Adolescence has been reported to be a critical risk period for initiating the use of substances which is the consumption of licit substances like alcohol and cigarette and illicit substances like marijuana and drugs. In Nigeria, research has shown a high prevalence of substance use among adolescents, however only a few intervention studies, mostly health education interventions, have been implemented in Nigeria to curb the issue. Empowerment education interventions have the potential to reduce adolescent substance use, but the few studies applying this have been in developed countries. This study was conducted to determine the effect of an empowerment education intervention on substance use and its risk and protective factors among adolescents living in peri-urban communities in Nigeria. An empowerment education intervention curriculum was developed based on Freire's listen-dialogue-action framework, and then subjected to focus group discussions and expert reviews for review and validation. The final curriculum was tested using a quasi-experimental design conducted among 300 in-school adolescents from peri-urban communities in Abuja. Baseline, two weeks, and three months follow-up data on the effect of the intervention on substance use and its risk and protective factors (delinquency, self-esteem, self-efficacy, attitude to substance use, peer support, and depression), as identified by the problem behaviour theory, was collected. Chi-square test, independent t-test and ANOVA were conducted to determine the intervention's effects on the study outcomes. Qualitative data was collected two weeks post-intervention to gain the participant's perspectives.

A 12-session intervention curriculum called "Teen Heroes Curriculum" was developed and tested. Quantitative data showed no effect of the intervention on substance use at two weeks follow up, however at three months follow up, the prevalence of substance use, and number of substances used among the

intervention group was significantly lower than the control group. Among the intervention group, peer support at two-week follow up, delinquency and self-esteem at three months follow up were significantly different than the control group. Higher intervention attendance was associated with better attitude towards substance use and lower depression among the intervention group. Qualitative data showed that participants generally enjoyed the program, with many of them reporting gaining new knowledge, learning to work in teams, making new friends, and becoming more confident to share their views, and stopping substance use. Overall, the intervention showed potential to reduce substance use among adolescents, as well as influence its risk and protective factors, however it would probably have been more effective if it addressed familial factors. This study is the first to test the efficacy of an empowerment education intervention in Nigeria, therefore its findings provide valuable insight on its applicability among adolescents in low resource settings in Nigeria, and to practitioners on addressing substance use among adolescents in peri-urban communities.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**KEBERKESANAN PEMERKASAAN INTERVENSI PENDIDIKAN
TERHADAP PENGGUNAAN BAHAN TERLARANG DALAM KALANGAN REMAJA YANG TINGGAL DI
KOMUNITI PINGGIR BANDAR DI ABUJA, NIGERIA**

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Zaman remaja telah dilaporkan sebagai tempoh risiko kritikal untuk memulakan penggunaan bahan terlarang, iaitu penggunaan bahan-bahan yang sah seperti alkohol dan rokok dan bahan-bahan haram kike ganja dan dadah. Di Nigeria, penyelidikan telah menunjukkan kelaziman penggunaan bahan terlarang yang tinggi dalam kalangan remaja, namun hanya beberapa kajian intervensi, kebanyakannya intervensi pendidikan kesihatan, telah dilaksanakan untuk membendung isu tersebut. Hakikatnya, intervensi pemeraksanaan pendidikan berpotensi untuk mengurangkan penggunaan bahan terlarang kalangan remaja, namun hanya beberapa kajian berkaitan telah dibangunkan di negara maju. Kajian ini dijalankan untuk menentukan kesan intervensi pemeraksanaan pendidikan terhadap penggunaan bahan terlarang dan faktor risiko dan perlindungannya dalam kalangan remaja yang tinggal di komuniti pinggir bandar di Nigeria. Kurikulum intervensi pemeraksanaan pendidikan telah dibangunkan berdasarkan rangka kerja *Freire's* listen-dialogue-action, dan tertakluk kepada perbincangan kumpulan fokus dan ulasan pakar untuk semakan dan pengesahan. Kurikulum akhir telah diuji menggunakan reka bentuk kuasi eksperimen yang dijalankan kalangan 300 remaja sekolah dari komuniti pinggir bandar di Abuja. Data asas untuk tempoh dua minggu dan tiga bulan tentang kesan intervensi terhadap penggunaan bahan dan faktor risiko dan perlindungannya (delinkuen, harga diri, keberkesanan diri, sikap terhadap penggunaan bahan, sokongan rakan sebaya dan kemurungan), seperti yang dikenal pasti oleh teori tingkah laku masalah, telah dikumpulkan. Ujian khi kuasa dua, ujian-t bebas dan ANOVA telah dijalankan untuk menentukan kesan intervensi terhadap hasil kajian. Selanjutnya, data kualitatif telah dikumpul dua minggu selepas intervensi untuk mendapatkan perspektif dari peserta.

Kurikulum intervensi 12 sesi yang dipanggil “Kurikulum Wira Remaja” telah dibangunkan dan diuji. Data kuantitatif menunjukkan tiada kesan intervensi terhadap penggunaan bahan terlarang pada dua minggu tempoh susulan, namun pada tempoh tiga bulan susulan, kelaziman penggunaan bahan, terlarang dan bilangan bahan yang digunakan dalam kalangan kumpulan intervensi adalah jauh lebih rendah daripada kumpulan kawalan. Kalangan kumpulan intervensi, sokongan rakan sebaya pada tempoh susulan dua minggu, delikueni dan harga diri pada susulan tempoh tiga bulan adalah berbeza dengan ketara daripada kumpulan kawalan. Kehadiran intervensi yang lebih tinggi dikaitkan dengan sikap yang lebih baik terhadap penggunaan bahan terlarang dan kemurungan yang lebih rendah dalam kalangan kumpulan intervensi. Data kualitatif menunjukkan bahawa peserta secara amnya menghayati program ini, dengan kebanyakan mereka melaporkan memperoleh pengetahuan baharu, belajar bekerja dalam pasukan, mendapat kawan baharu, dan menjadi lebih yakin untuk berkongsi pandangan mereka, dan menghentikan penggunaan bahan terlarang. Secara keseluruhan, intervensi menunjukkan potensi untuk mengurangkan penggunaan bahan terlarang dalam kalangan remaja, termasuk dalam mempengaruhi faktor risiko dan perlindungannya. Namun, ia berkemungkinan akan lebih berkesan jika mengambilkira faktor keluarga. Ini adalah kajian rintis yang pertama kali diadakan untuk menguji keberkesanan intervensi pemeraksanaan pendidikan di Nigeria, justeru, kajian ini menyumbang dapatan yang berguna berkaitan kebolehgunaannya dalam kalangan remaja dalam persekitaran sumber yang rendah di Nigeria, termasuk juga para pengamal dalam menangani penggunaan bahan terlarang dalam kalangan remaja komuniti pinggir bandar.

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LIST OF ABBREVIATIONS

ACE	Assisting, Caring and Empowering
ANOVA	Analysis of Variance
ASAP	Alcohol Substance Abuse Programme
DV	Dependent Variable
FGD	Focus Group Discussion
IV	Independent Variable
JKE-UPM	Jawatankuasa Etika Universiti Penyelidikan Melibatkan Manusia
M	Mean
NDCMP	National Drug Control Master Plan
NGO	Non-Governmental Organization
OR	Odds Ratio
P	p-value
QOP	Quantum Opportunities Program
SE	Standard Error
SD	Standard Deviation
SPSS	Statistical Packages for Social Sciences
UNODP	United Nations Office on Drugs and Crime
USAID	United States Agency for International Development
WHO	World Health Organization
X^2	Chi Square
YES	Youth Empowerment Solutions

CHAPTER 1

INTRODUCTION

1.1 Background

Adolescence, which is the phase between adulthood and childhood, and the ages of 10 and 19, is a period of developmental struggles with biological, cognitive and emotional changes (Ciranka & van den Bos, 2019). Adolescents are more likely to make decisions independently, be influenced by their peers and develop a tendency to care what their friends and peers think. They also undergo neurological changes that affect their decision making and behaviour (Pei et al., 2020). These changes increase their vulnerability to the adoption of risky behaviours such as substance use. Hence, adolescence has been reported to be a critical risk period for initiating the use of substances (United Nations, 2018).

Adolescents from peri-urban communities, also known as inner cities or slums, however face an additional and unique set of circumstances and challenges that negatively affect their health and life outcomes (Wado et al., 2020). They are often exposed to a combination of stressful factors including poverty, substandard housing, and poor quality of education (Zerbo et al., 2020). Their lower socio-economic class predisposes them to less economic opportunities when compared to their peers from higher economic classes, which further predisposes them to crime, gangsterism and delinquent behaviours (Rigg et al., 2019). They are exposed to a culture of violence (Raufu & Mendie, 2021) - violence in these communities can even be a form of self-defence and self-preservation, as it can prevent them from being targets of violence themselves (Hausmann-Stabile et al., 2016). This predisposes them to mental health issues such as anxiety and PTSD (Rigg et al., 2019). In addition, adolescents from these communities are more vulnerable to outcomes such as early pregnancy, sexually transmitted infections, early childbearing, and poor maternal health outcomes (Wado et al., 2020), which could lead to poor academic outcomes, further perpetuating the cycle of poverty.

Adolescents in peri-urban communities are also highly vulnerable to substance use. This phenomenon has been reported to be associated with social disadvantage, low socioeconomic class, low maternal education, and low median community income; all of which are highly prevalent in peri-urban communities (Aschengrau et al., 2021). The poor quality of education, the lack of productive recreational activities and extracurricular activities in schools and in the communities can leave the children bored, and in recreational spots reserved for adults, where they are exposed to and encouraged to take up substance use (Puljević & Learmonth, 2014). Substance use also serves as a mechanism to cope with the extreme financial and mental strain they face (Ati et al., 2017). Some of the adolescents are forced to financially support their families through hawking and other street work, exposing them to the vices easily

accessible on the streets (Ikoh et al., 2019). The combination of these socio-economic factors and stressful conditions makes peri-urban communities a fertile ground for substance use among adolescents (Ati et al. 2017).

Adolescent substance use refers to the use of licit substances like alcohol and cigarettes, as well as illicit substances like cocaine, codeine, marijuana, inhalants, solvents and prescription drugs among adolescents. It is a complex, multifaceted and important problem among adolescents (Jumbe et al., 2021). It can have both drastic and far-reaching consequences, as this behaviour can be sustained into adulthood, and become a significant predictor for health in later life (Patton et al., 2016; Viner et al., 2015). The effects of substance use have long been documented. Generally, substance use disorders have been associated with mental health disorders, anxiety and depression, and psychopathology (Hamidullah et al., 2020). Other effects of substance use among adolescents are truancy, violent behaviour, vandalism, crime, poor academic performance, risky sexual behaviour, and life-long addiction (Nath et al., 2022). Specifically, alcohol consumption has been associated with alcohol dependence, accidents, diabetes, liver disease, and cancers (World Health Organization, 2022). Tobacco consumption has been associated with tobacco dependence, lung, liver and cardiovascular diseases, insomnia, inflammatory conditions, poor oral health, and mental health disorders (Afolalu et al., 2021). Cannabis has been associated with poor cardiovascular effects, respiratory diseases, and testicular cancer (Page et al., 2020)., and codeine has been associated with dependency, poor physical health, and overdose (Hall et al., 2016).

Despite these documented negative effects, about 25 million and 13 million adolescents aged 13 to 15 years around the world use cigarettes and smokeless tobacco respectively (Drope et al., 2018). Globally, there are an estimated 209 million cannabis users, 61 million opioid users, 34 million amphetamine users, 21 million people cocaine users, and 20 million people MDMA users (United Nations Office on Drugs and Crime, 2022).

In Nigeria, research has shown a high prevalence of substance use among adolescents. There have been reports of varying rates of substance use among young people in different parts of Nigeria, with a drug use prevalence of 17.3% reported among secondary school students (Obadeji et al., 2020), a prevalence of 32.9% was reported among secondary school students (Anyanwu et al., 2016) and 49.8% among high-school adolescents in Southwest Nigeria (Opakunle et al., 2022)

About 29% of secondary school students consume alcohol, 14% smoke cigarettes, 4% use drugs in South East Nigeria (Inyang & Longinus, 2016). In South West Nigeria, 20% of adolescents consume alcohol and 14% of them use tobacco (Idowu et al., 2018). In Northern Nigeria, 20% of adolescents use either tobacco, alcohol or other psychoactive substances (Ap et al., 2017). Substances most abused by young people in Nigeria aged 15 to 19 are alcohol, tobacco and

cigarettes, cannabis, pharmaceutical opioids especially tramadol, Rohypnol, and cough syrups, and to a lesser extent, drugs like amphetamine/dexamphetamine, heroin, cocaine, tranquillisers and MDMA (Nabofa, 2021; Jatau et al., 2021; United Nations Office on Drugs and Crime Nigeria, 2021). In fact, the alarming rate of substance use in Nigeria has led experts to declare it as a public health emergency (Jatau et al., 2021; Morufu, 2019).

To address substance use, it is recommended that interventions are holistic, preventive and aim to increase its protective factors and decrease its risk factors. By increasing the protective factors, adolescents can build resilience which help them cope with life's challenges and other risk factors, and thus decrease their likelihood of using substances (Jessor, 2016; Khalil & Hamdan-Mansour, 2019). The Problem Behaviour Theory by Jessor et al (2016) states that these risk factors include availability of drugs and alcohol at home, low self-esteem, parental and peer use of substances, and attitude to substance use. Protective factors include family connectedness, school connectedness, engagement in meaningful activities, social and emotional skills, and engagement in prosocial activities (Jessor, 2016). Other authors have reported similar risk and protective factors (El Kazdoui et al., 2019; Fuentes et al., 2020; Khalil & Hamdan-Mansour, 2019; Nawi et al., 2021). It is thus important that efforts targeted towards addressing substance use, aim to reduce its risk factors and increase its protective factors among adolescents.

To address risky behaviours such as substance use among disadvantaged youths, empowerment-based approaches have been reported to be effective, because of their emphasis on highlighting their assets and protective factors, and identifying their strengths as critical thinkers and problem solvers (Wilson et al., 2008). Empowerment education intervention, a form of empowerment intervention, incorporates this approach by applying problem posing and social action to effectively engage youth in disadvantaged communities to identify root causes of the problems that affect them and empower them to address these issues. This intervention model was first applied by Wallerstein and Bernstein in their study to reduce alcohol consumption among young people (Wallerstein & Bernstein, 1988). The model was developed by Wallerstein and Bernstein (1988) based on the three-step methodology of Paulo Friere's pedagogy – listen, dialogue, and action – used to empower participants. In the listen phase, participants identify the issues that affect them and their community. In the dialogue phase, participants discuss with each other through a technique called problem posing to understand the root causes of the issue. In the action phase, participants act towards trying to solve the issues identified by carrying out a form of social action or community service. For adolescents from disadvantaged communities who have been exposed to severe environmental and social distress resulting to negative attitudes and beliefs and thus negative health behaviours like substance use, violence and delinquency, empowerment education interventions have been reported to be highly beneficial. This form of intervention helps reduce or eliminate their feelings of powerlessness and hopelessness, increases their capacity to overcome the hardships they face, leads to positive changes in their attitudes and beliefs, and leads to positive health behaviours (Wilson et al., 2008).

This study therefore aimed to develop and test the efficacy of an empowerment education intervention on substance use, and its risk and protective factors among adolescents living in peri-urban communities in Nigeria.

1.2 Study Context

Nigeria is the most populous country in Africa, with a relatively young population, and over 250 ethnic groups (World Health Organization, 2017). About 40% of Nigerians currently live below the national poverty line (World Bank, 2021). Adolescents constitute 22% of Nigeria’s population amounting to 41,050,000 adolescents (World Health Organization, 2017), with 2.8% of this population residing in Abuja, amounting to 1,108,350 adolescents (United Nations Population Fund, 2022). The country is facing several economic challenges resulting in high rates of poverty and unemployment, increasing crime rate and degeneration of the existing social infrastructure (Yusuf and Mohd 2022).

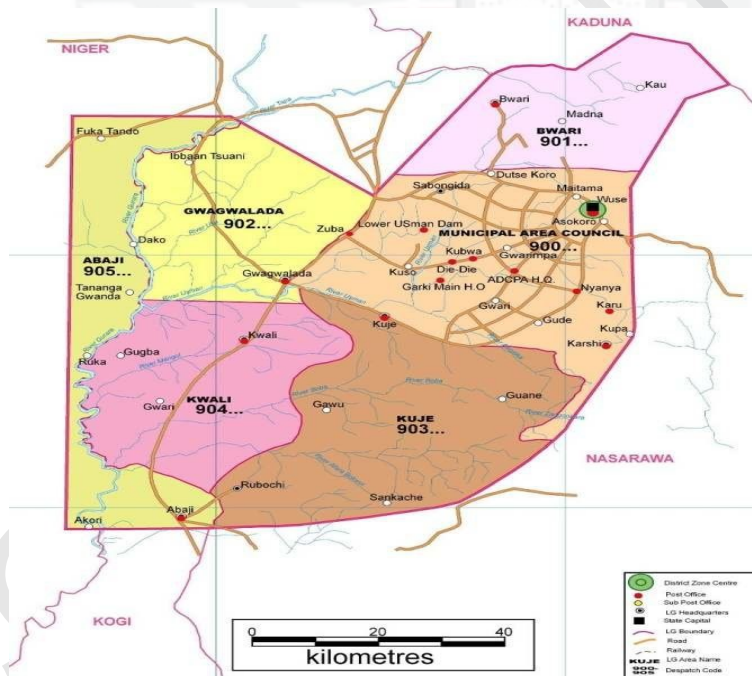


Figure 1 : A map of Abuja, Nigeria

There are several peri-urban communities in Abuja, which is located in the North central part of Nigeria. These peri-urban communities have maintained their rural characteristics, while living close to an urban city. Peri-urban communities arose due to the rapid infrastructure development which occurred in Abuja to transform it to the country’s economic and social capital. As the development occurred, a huge income gap was created. It became a city predominantly occupied by the

wealthy, as low-income earners were unable to afford the housing and other services available in the developed city. This led to the segregation of low- and high-income groups, as low-income earners were forced to settle in informal settlements and peri-urban communities (Momoh et al., 2018).

A common characteristic of these communities is poverty, accompanied by a lack of basic amenities like potable water, constant electricity, and medical facilities (Momoh et al., 2018). The schools in these communities are largely underfunded with poor infrastructure and resources, and overcrowded leading to poor quality of education and low academic performance (Rigg et al., 2019). These factors create conditions that are a breeding ground for violence, delinquency, disorderliness, and substance use which is available and common (Raufu & Mendie, 2021). As a result, adolescents living in peri-urban communities are constantly exposed to substances and are thus at risk for substance use, which could explain the growing problem of substance use in peri-urban communities in Abuja (Ukanwa, 2022).

This section highlights the significant number of adolescents in Nigeria underscoring the need for their protection and healthy development, as well as the socio-economic context of the study population; adolescents living in peri-urban communities, which predisposes them to substance use.



Figure 2 : Images of newspaper headlines showing rising drug use among teenagers

1.3 Problem Statement

Nigeria is the most populous country in Africa, with a relatively young population, and over 250 ethnic groups (World Health Organization, 2017). About 40% of Nigerians currently live below the national poverty line (World Bank, 2021). Adolescents constitute 22% of Nigeria's population amounting to 41,050,000 adolescents (World Health Organization, 2017), with 2.8% of this population residing in Abuja, amounting to 1,108,350 adolescents (United Nations Population Fund, 2022), highlighting the high number of adolescents in the state.

Adolescent substance use is a public health concern that has been linked to short and long-term negative physical, mental, and social health outcomes for the individuals, families, and communities. Nigeria has one of the highest per capita usage rates of psychoactive and other substances worldwide (United Nations Office on Drugs and Crime Nigeria, 2021). About 14.3 million people use drugs in Nigeria, which is three times the global average, and 3 million Nigerian youth are estimated to have a drug use disorder (United Nations Office

on Drugs and Crime, 2022). Reports suggest that substance use is significantly more widespread among Nigeria's youth. Due to the high consumption of these substances by young Nigerians (Ajayi & Somefun, 2020) and the early age at initiation, which can be as early as the 10th birthday (Jacobs et al., 2020), there is an immediate need to address the epidemic of substance abuse among Nigeria's youth.

Studies in Nigeria have reported a high prevalence of substance use among adolescents. Previous studies conducted in several parts of the country reported a prevalence ranging from 20% to 29% (Ap et al., 2017; Idowu et al., 2018; Inyang & Longinus, 2016). A systematic review by Jatau et al. in 2021 of 23 older studies revealed a prevalence ranging between 20% to 40% (Jatau et al., 2021). In a more recent study, a prevalence as high as 64% was reported, indicating an increasing trend in adolescent substance use in the country (Omotoso et al., 2021). These studies have however been conducted in urban areas, and not among adolescents living in peri-urban communities despite evidence stating their increased vulnerability and exposure to substance use (Ati et al., 2017; Ikoh et al., 2019). In a more recent study conducted in Abuja by Ekop et al. (2019), a high prevalence of ever substance use was reported by at 72.7%, and current substance use was reported to be 24.4%.

To tackle the growing drug use pandemic, government efforts have been focused on arresting drug peddlers, preventing drug smuggling into the country, and banning the importation of opiates such as codeine (BBC, 2018). In 2021, the government launched a National Drug Control Master Plan which is reported to be a "balanced and health-centered approach to drug control" (United Nations Office on Drugs and Crime Nigeria, 2021), which involves a plan to develop a drug education curriculum to be implemented in schools. However, this curriculum has neither been developed nor implemented, therefore substance use interventions have largely been absent among Nigerian adolescents.

Non-governmental organizations (NGOs) and private organizations, through their corporate social responsibilities, have also implemented several substance use initiatives among youth in Abuja, such as drug use sensitization programs through music and dance, and one-day training sessions on the dangers of substance use in schools (Adebayo, 2019; Eweju, 2019; United Nations Office on Drugs and Crime Nigeria, 2021). However, studies have shown that this form of intervention is ineffective in tackling substance use or leading to behaviour change (Catalano et al., 2002). There is therefore currently a lack of substance use intervention curriculum being applied to curb this major public health issue among Nigerian adolescents.

For substance use interventions to be effective, they should target risk and protective factors and be guided by theories (Griffin et al., 2022). Empowerment based interventions are one of such interventions, and have been reported to be an effective strategy to improve health and wellness among adolescents (Christens, 2019). For over a decade, studies have been conducted to determine

how empowerment affects adolescent health outcomes such as substance use (Lardier et al., 2020). Christens and Peterson reported that youth with higher empowerment scores were more likely to be involved in community activities, had more social support, which has a protective effect on adolescent problem behaviour such as substance use (Christens & Peterson, 2012). Lardier et al. reported that youth empowerment through community civic engagement was effective in reducing substance use among youths from disadvantaged communities (Lardier et al., 2020). Therefore, interventions which utilise a strengths-based approach and aim to improve community connectedness through community activities can be effective in reducing substance use.

Empowerment education interventions is one of such interventions, as its use of listen-dialogue, action-reflection approach aims to improve the protective factors of its participants and involves intrinsically motivating activities like social action which enable them to create a social change in their communities. It has been applied to improve other forms of health behaviours among adolescents and young people such as delinquency (Zimmerman et al., 2018), antisocial behaviour (Thulin et al., 2022), and unhealthy eating (Emley, 2021), and has been applied in substance use prevention programs, albeit tested qualitatively (Wallerstein & Bernstein, 1988). This intervention has also been reported to improve self-esteem, critical thinking, problem solving, community connectedness, and social support of the participants (Wallerstein & Bernstein, 1988), all of which have been reported to be risk and protective factors of substance use. However, despite its potential to reduce substance use and address its risk and protective factors among adolescents, there is no research which has empirically tested its effectiveness on substance use, based on available literature, highlighting a critical research gap.

Summarily, this problem statement highlights several gaps; Firstly, there have been few substance use studies conducted among adolescents living in peri-urban communities, despite their vulnerability to substance use. Secondly, it highlights the high rate of substance use among adolescents in Nigeria, and the scarcity of effective substance use interventions and intervention curricula to address the issue. Thirdly, it highlights that empowerment education interventions have the potential to be effective, because studies have reported significant effects of the intervention on the risk and protective factors of substance use, and qualitative studies have reported benefits in addressing substance use, however their effect on substance use has not been quantitatively tested.

This study therefore aims to fill these gaps by developing an empowerment education intervention and testing its efficacy in reducing substance use among adolescents living in peri-urban communities in Abuja, Nigeria.

1.4 Study Justification

Adolescents constitute a significant proportion of the Nigerian population (World Health Organization, 2017), therefore investing in the well-being of adolescents is critical, particularly of those living in peri-urban communities who are often marginalised, and vulnerable to the adoption of negative behaviours and vices. The findings from this study will add to the limited substance use literature on adolescents in peri-urban communities. By preventing substance use in adolescence, the risk of adopting substance use or having substance use disorders in adulthood is decreased (Jones et al., 2020). Additionally, positive behaviours can be adopted, their development can be positively influenced and generational inequalities can be reduced (Somefun et al., 2021).

Despite the worrisome rate of substance use among adolescents in Nigeria, there have been few interventions conducted to tackle this issue. Moreover, although the government has planned to implement an intervention curriculum, the curriculum is still absent. The developed intervention curriculum could be a great resource for preventing adolescent substance use among educators, programmers, organisations and the government, as there are currently no substance use intervention curriculum to guide the development of future interventions focused on preventing adolescent substance use and will add to the scarce literature on adolescent substance use interventions in the country.

Adolescent empowerment interventions are one of such interventions that increases the protective factors and reduces the risk factors among adolescents (Bonell et al., 2016) and thus reduces substance use (Hadiyani & Sugianti, 2021; Lardier et al., 2020). Empowerment education interventions are a type of adolescent empowerment intervention with the potential to prevent and reduce adolescent substance use. This is because few researchers have tested the education empowerment intervention on other adolescent health outcomes and have theorised its efficacy in addressing adolescent substance use. This research will therefore be an important addition to current literature on empowerment education, as it will be the first of its kind to provide empirical evidence on its effect on substance use among adolescents, thus filling an important research gap. It also tests the efficacy of the intervention in a different setting, as this intervention has only been tested among adolescents in developed countries. It will thus play an important role in testing the application of the theory in a different setting and research context, thus testing the generalizability and external validity of the theory.

This research, which tested the efficacy of the intervention was thus conducted in Nigeria, specifically in Abuja, the country's capital. Abuja is populated by Nigerians of various ethnicities and the two major religions, has been understudied in the adolescent substance use area, and has a high prevalence of substance use, making it an ideal study area for research, and enhancing its generalizability to ethnicities and religions in the country.

1.5 Research Questions

Currently, an adolescent substance use intervention curriculum to guide the implementation of the intervention is not available, particularly one that suits the context of peri-urban communities in Nigeria. Therefore, it is important to gain an understanding of the components and features of an evidence-based empowerment intervention from available literature, as that will enable the development of an effective intervention curriculum. Therefore, the first research question is: What are the components and features of an evidence-based empowerment education intervention curriculum for Nigerian adolescents living in peri-urban communities?

Currently, much of the data on the prevalence of substance use have been conducted among adolescents living in urban areas, therefore there is not much data on the prevalence of substance use among those living in peri-urban communities, despite their increased vulnerability. This research gap led to the second research question: What is the prevalence of ever and current substance use among adolescents living in peri-urban communities in Abuja, Nigeria?

Effective adolescent substance use interventions have been reported to be those that can reduce the risk factors and improve the protective factors of substance use. Therefore, it will be important to determine if the empowerment education intervention will be effective in addressing these important factors. Therefore, the third research question is: What is the effect of this intervention on risk and protective factors of substance use among Nigerian adolescents in peri-urban communities?

Although researchers have theorised the effectiveness of empowerment education intervention on substance use among adolescents due to its perceived benefits, it is yet to be empirically tested. Therefore, this study aimed to answer the fourth research question: What is the effect of this intervention on adolescent substance use among Nigerian adolescents in peri-urban communities?

Finally, it is important to understand the experiences of the participants, gain an understanding of the perceived benefits which could be used to explain the findings from the quantitative study, therefore the final research question was: What are the experiences of the participants' who were involved in the intervention?

1.6 General Objective

To develop, implement, and evaluate the efficacy of an empowerment education intervention on adolescent substance use, and its risk and protective factors among adolescents living in peri-urban communities in Abuja, Nigeria.

1.7 Specific Objectives

1. To develop an empowerment education intervention aimed at reducing substance use among adolescents in peri-urban communities in Abuja, Nigeria.
2. To determine the prevalence of ever and current substance use among adolescents living in peri-urban communities in Abuja, Nigeria.
3. To determine the between- and within-group effect of an empowerment education intervention on adolescent substance use among adolescents in peri-urban communities in Abuja, Nigeria two weeks and three months after.
4. To determine the between- and within-group effect of an empowerment education intervention on the risk and protective factors of adolescent substance use among adolescents in peri-urban communities in Abuja, Nigeria two weeks and three months after.
5. To gain an in-depth understanding of the experiences of the participants involved in the intervention and explore how the intervention affected their behaviour.

1.8 Assumptions

It is assumed that there is the occurrence of substance use among adolescents and by partaking in the intervention, they will adopt the needed skills to avoid this behaviour. It is also assumed that the participants will devote their time to partake in the intervention.

1.9 Keywords and their Definitions

The table below presents the commonly used terms in this document, and their conceptual and operational definitions.

Table 1 : Conceptual and Operational Definitions of Terms

Term	Conceptual definition	Operational definition
Adolescent	Any person between ages 10 and 19 (World Health Organization, 2018)	Any person between ages 10 and 19
Adolescent Substance use	The use of alcohol, tobacco, cocaine, heroin and cannabis, and the spraying of aerosols and sprays by adolescents (Ogunsola & Fatusi, 2017)	The use of any of alcohol, tobacco, cocaine, heroin and cannabis, and the spraying of aerosols and sprays by adolescents.
Code	Codes are photographs, stories, pictures, songs, models, or other constructions that “codify” a generative theme of a conflict or problem into a physical form. A code is more than a visual aid or a structured language exercise, as its purpose is to trigger critical thinking and action (Wallerstein & Auerbach, 2004).	These are the pictures and stories used in the curriculum to trigger dialogue.
Critical consciousness	This is a process where people who are oppressed or marginalised begin to analyse their social conditions critically so they can carry out action to change them (Watts et al., 2011)	This is a process where “oppressed or marginalised people learn to critically analyze their social conditions to act to change them.
Curriculum	A course, trajectory, and a plan for learning	This will be the immediate output of this research which will specify the courses to be taught, the details, the timing, the instruments, and processes of the intervention.
Empowerment Education	Empowerment Education is a form of health education which promotes health through the application of group dialogue, active learning, and social action efforts that enhances the participant’s feelings of self-efficacy to change their lives (Wallerstein & Bernstein, 1988).	This is the form of intervention, inspired by Freire and adapted by Wallerstein and Bernstein, and applied in this study.
<i>Empowerment intervention</i>	<i>Interventions based on young people’s strengths, that involve them in decision-making processes, and an active, central role in the program design and implementation (Morton & Montgomery, 2013)</i>	<i>Interventions based on young people’s strengths, that involve them in decision-making processes, and an active, central role in the program design and implementation (Morton & Montgomery, 2013)</i>

Table 1 : Continued

Term	Conceptual definition	Operational definition
Peri-urban communities	Peri-urban communities are transition spaces intermingling rural and urban features, usually characterised by informal settlement and poverty (Wandl and Magoni 2017)	These are the communities selected for this study. They are located close to urban residences, while still maintaining their rural characteristics.
Problem behaviour	Problem behaviour refers to unconventional behaviours which have been defined as problematic by the larger society and could lead to some form of sanctions or result in the adolescent suffering difficulties or negative consequences (Jessor, 2016).	Problem behaviour includes such problems deemed as problematic by the society such as delinquency, substance use, early sexual intercourse.
Protective factors	These are factors that “provide support for positive, pro-social behaviour and development” (Jessor, 2016)	These are factors that “provide support for positive, pro-social behaviour and development”.
Problem posing	An educational process of group dialogue that draws on the group’s personal experience to understand the problem, while also creating social connectedness and mutual responsibility for change (Wallerstein & Auerbach, 2004).	This is a technique applied in the curriculum where the participants share their experiences and community’s experiences of issues to understand its root causes, as well as improve their social connectedness.
Risk behaviour	Risk behaviours are behaviours which pose a risk to adolescent health and development. They include behaviours such as substance use, unprotected sex, risky driving, sedentary living, unhealthy eating, poor sleep habits (Jessor, 2016).	Risk behaviours are behaviours which pose a risk to adolescent health and development. They include behaviours such as substance use, unprotected sex, risky driving, sedentary living, unhealthy eating, poor sleep habits.
Risk factors	These are factors which increase the likelihood of involvement in risk behaviour and lessen the likelihood of involvement in prosocial or health-enhancing behaviour (Jessor, 2016)	These are factors which increase the likelihood of involvement in risk behaviour and lessen the likelihood of involvement in prosocial or health-enhancing behaviour.
<i>Social Action</i>	<i>Social action is defined as young people taking practical action in the service of others to create positive social change that is of benefit to the wider community and young people themselves (Chapman & Dunkerley, 2013)</i>	<i>An activity performed by adolescents with no monetary rewards but involving positive social benefit. In this study, social action will be used interchangeably with community service, service learning, service, and volunteering.</i>

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