



Effectiveness of ASSIST Linked Brief Intervention for Substance Use among Commercial Bus Drivers in a suburb of Lagos, Nigeria

Bolajoko I. Malomo^{1,2} & Aduralere Ladipo¹

¹Department of Psychology, University of Lagos, Nigeria.

²Environmental Evidence Synthesis and Knowledge Translation Research Cluster, TETFund Centre of Excellence in Biodiversity Conservation and Ecosystem Management (EESKT-TCEBCEM), University of Lagos, Lagos, Nigeria.

Corresponding author: Bolajoko I. Malomo, Department of Psychology, University of Lagos, Nigeria. Email:

bmalomo@unilag.edu.ng

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ABSTRACT

Substance use is prevalent and increasing among commercial bus drivers in Nigeria. Nonetheless, opportunity abound for the delivery of brief interventions for those at risk of substance use-related health problems. This study examined the influence of an ASSIST-Linked Brief Intervention (ALBI) on the reduction of substance use consumption among commercial bus drivers in Lagos, Nigeria. A within-subject research design was adopted in the current research wherein participants' use of alcohol and other substances were assessed before and after the intervention. Participants were selected using a purposive sampling technique by selecting 20 participants from a pool of 30 commercial bus drivers in a selected motor park. Participants were assessed using the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST). Subsequently, the data obtained from the participants was used to administer immediate brief interventions based on their risk level to the assessed substances. Findings revealed that 50% of the participants had evidence of moderate risk of tobacco, alcohol and cannabis use. However, after one month, the ASSIST result revealed that there was a significant effect of the brief intervention on tobacco (mean difference = 9.00, $p < .005$), alcohol (mean difference = 7.15, $p < .005$), and cannabis use (mean difference = 11.00, $p < .005$). Study findings imply that ALBI significantly reduced substance use involvement among commercial bus drivers in Lagos.

Introduction

Transportation and mobility of people, goods, and services have long been issues of high concern in virtually all cities and towns of many developing countries. In Nigeria, Lagos state commuters experience the challenges of urban transportation and mobility typical of cities around the world. The adoption of public commercial road transportation system in Lagos State was informed by the need for economic growth, servicing the increasing population of commuters, and effort to accommodate the vision of a mega-city. In this context, commercial bus drivers play a crucial role in the daily road transportation needs of more than 75% of commuters in Lagos state, a substantial portion of the Nigerian population (Abdulahi, 2022; Salau, 2015). Given these pivotal roles performed by commercial bus drivers, it became pertinent to pay attention to drivers' health and their operational conditions. The specific focus on Lagos, a bustling metropolis with an extensive network of roads and a high volume of commercial bus operations, seems to highlight the critical nature of this issue. The frequency of accidents and traffic-related incidents linked to substance use among bus drivers on these roads calls for targeted intervention and policy responses (Mabayoje, 2019).

While some drivers might be aware of substance abuse in general, knowledge about specific mental and social health risks may be lacking. Ohaeri et al., (2020) found that 54.5% of commercial bus drivers in Abia State displayed poor knowledge of substance abuse and 74.6% of commercial bus drivers in Umuahia, Abia State, admitted to ever abusing psychoactive substances (alcohol, cannabis, etc.).

One critical aspect that exacerbates the problem is the lack of awareness, education and intervention among commercial bus drivers regarding the effects and risks associated with continuous substance use. Unlike some demographic groups where awareness campaigns, educational initiatives and interventions have gained traction, this minority group often lack access to comprehensive information and care about the detrimental consequences of substance abuse. Consequently, many drivers may not fully comprehend the implications of their actions or the long-term havoc that substance abuse can wreak on their health, livelihoods, and overall well-being.

Past research studies on substance use among commercial bus drivers in Nigeria (Nelson et al., 2024, Lasebikan & Ayinde, 2012) focused on factors associated with

the pattern, prevalence, reason, and road accidents, on substance use. For example, Lasebikan et al. (2017) explored the use of ASSIST for alcohol assessment but did not consider other components of the test tool. Therefore, there is paucity of studies relating to the effectiveness of ASSIST-linked brief interventions on all the substances listed in the ASSIST among commercial bus drivers in Nigeria. To the best of our knowledge, studies on the effectiveness of ASSIST-linked brief interventions for commercial bus drivers are scarce in Nigeria. To address this gap, the present study investigated the implementation of the WHO's Brief Intervention Management (BIM) strategies, supported by the ASSIST assessment, which has shown promises in other contexts. These factors justify the critical need to investigate the effectiveness of interventions, and to understand if it can be successfully adapted and implemented to reduce substance use and improve road safety in high-risk groups to which commercial bus drivers belong.

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World Health Organization (WHO, 2022) reported that substance abuse refers to injurious or unsafe consumption of psychoactive substances such as alcohol and illicit drugs. *"Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs."* Consumption of psychoactive substances among commercial bus drivers presents significant risks to public safety and well-being of drivers (Garbarino et al., 2018), and this may lead to abuse if nothing is done. In Nigeria, it is well-documented that many commercial bus drivers operate their vehicles under the influence of various substances (Nelson et al., 2024). This behaviour has profound adverse implications for road safety, contributing to numerous accidents and instances of reckless driving, especially on heavily trafficked routes such as Lagos roads (Akanke et al., 2023). The implications of substance use in this context are multifaceted. On the one hand, it poses direct threats to the physical safety of road users, in that, drivers under the influence of drugs or alcohol are more likely to engage in risky driving behaviours, exhibit impaired judgment, experience reduced reaction time, and suffer from decreased motor skills, all of which significantly increases the likelihood of road accidents (Akanke et al., 2023). On the other hand, there are broader social and economic costs, including the strain on healthcare systems, impaired functioning among the users, and negative psychological impact on victims and their families (Di Sarno et al., 2020).

Lagos is often described as the economic hub of Nigeria,

and its roads are lifelines for countless commuters. The frequency of accidents and traffic-related incidents linked to substance use among commercial bus drivers on these roads calls for targeted intervention and policy responses (Mabayoje, 2019). Inah et al. (2025) reported that the number of deaths from motor accidents in Nigeria was around 5,081 in 2023. The WHO also reported the link between drivers' hazardous use of alcohol and motor accidents in Nigeria (WHO, 2009). Many studies in Nigeria have also reported the link between consistent use of alcohol and other psychoactive substances among commercial long-distance drivers (Makanjuola et al., 2007). The adverse effects of these issues not only impact the physical and mental health of the user but are likely to have financial implications such as the cost of acquiring the substance, legal issues, loss of employment and even treatment costs (Alexandre et al., 2012).

Investigators of substance use had applied two critical tools designed to address substance use (Humenuik et al., 2010) in the past. These are the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) and the World Health Organization (WHO) Brief Intervention to investigate substance use. Both instruments are described as ASSIST Linked Brief Intervention (ALBI) and are integral parts of global efforts to mitigate the adverse effects of substance use on individuals and communities, including high-risk groups such as commercial bus drivers (Humenuik, et al., 2018).

The WHO's ALBI has achieved significant success worldwide, effectively reducing substance abuse through targeted counselling and short-term strategies tailored to address specific risk factors in diverse populations (Assanangkornchai et al., 2015). The ASSIST tool may be used to assess the severity of substance use and the potential for dependence, allowing healthcare providers to tailor interventions to specific needs of individuals. ALBI has been applied to intervene in substance use in different settings and has proved effective. For instance, the ALBI was used in healthcare (Lasebikan et al., 2017) and work settings (Prasad et al., 2023), as well as among community residents (Nnaemeka, 2024), commercial motorcycle riders (Obadeji et al., 2020), but none had explored applying the ALBI on commercial bus drivers especially in Nigeria. Additionally, this current study will be the first study to provide empirical evidence in the application of motivational materials (attached as appendix) as an intervening variable in substance use among participants. The pre- and post-intervention has never been attempted in Nigeria; therefore, the outcome will be useful and novel in informing continued application of the ALBI tool. The focus of this study is therefore to find out if the intervention in substance use with ALBI will be effective with commercial bus drivers in Lagos.

In this current study, the key techniques of ALBI are reliance on motivational interviewing techniques and the FRAMES (Feedback, Responsibility, Advice, Menu of options, Empathy, and Self-efficacy) Model developed by Miller et al. (1994). These were integrated into the intervention programme and the effectiveness of these techniques in motivating commercial bus drivers to reduce or stop substance use was

evaluated. Furthermore, the effectiveness of ASSIST-linked brief intervention for substance use among commercial bus drivers may improve the physical and mental well-being of the drivers and reduce the frequency of accident crashes especially in cosmopolitan cities like Lagos.

Treatment of substance use requires time and is expensive. Families experience financial strain due to the cost of rehabilitation, psychotherapy and pharmacotherapy treatment (Jatau et al., 2021). The cost of providing interventions for substance use disorders in low-income and lower-middle-income countries was estimated at US\$3–4 per head of population per year (Jatau et al., 2021). However, brief intervention has been proven to yield substantial success for those who have benefited from its use (Babor et al., 2023). Brief intervention has the potential as a medium of prevention of unhealthy alcohol use in semi-rural communities in Nigeria (Lasebikan, 2017). Drug education was utilized as a means of intervention and the intervention medium enhanced the knowledge of intra-city commercial bus drivers and promoted positive attitudes towards psychoactive substances (Omoohu, 2019).

The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST)

The WHO Brief Intervention was proposed to be a structured, short-term counselling strategy designed to motivate individuals to reduce or cease their substance use. It typically involves one to four sessions lasting 15 to 30 minutes each. ALBI have demonstrated significant success in various settings worldwide (Widmann, et al., 2022). A study in Australia by Humeniuk et al. (2018) revealed the implementation of ASSIST in primary healthcare settings and a substantial reduction in substance use among patients, particularly in reducing risky drinking and illicit drug use. Also, the WHO Brief Intervention was effective in reducing alcohol consumption and improving health outcomes among patients in primary care situated in Brazil (Humeniuk, et al., 2012). There is lack of sufficient literature on the use of brief interventions for alcohol and psychoactive substance use care in Nigeria. We therefore hypothesize that the ASSIST-linked brief intervention will lead to reductions in frequency of substance use among commercial bus drivers. The independent variable is brief intervention while the dependent variable is substance use among commercial bus drivers.

Method

Research design

This study adopted a within-subject experimental design. All the participants were members of a single group, and each participant experienced the initial ASSIST assessment and the first brief intervention. Afterwards, two more sessions of brief intervention were administered to the same participants once a week for two weeks. The final ASSIST screening and brief intervention was delivered by the fourth week, to the same participants. This lasted for one month. The study population was commercial bus drivers selected at a passenger boarding park along Ikorodu road in Onipanu bus stop, Lagos State. Participants

were purposively selected using the following inclusion and exclusion criteria. Must be current users of alcohol and other psychoactive substances within the last 3 months, must be registered drivers at the park, must have been driving for income in the last one year, be willing to participate in a brief intervention and must provide informed consent. A total of 20 bus drivers who were all males between the ages of 26-52 years with average age of 42 years ($SD = 6.897$) were purposively selected for the study

Materials

Data was collected with the ASSIST tool (Humeniuk et al., 2012). ASSIST consists of 8 items that screen 10 various substances of abuse. Three examples of the items are: During the past 3 months, how often have you failed to do what was normally expected of you because of.....; Have you ever tried and failed to control, cut down or stop using ?; Have you ever used any drug by injection (non-medical use)?. The tool determined the risk score for each substance, and the score identifies lower, moderate or high-risk categories. The manual for the brief intervention was developed as an intervention guide to complement the ASSIST assessment tool by (Humeniuk et al., 2010). The main objective was to modify the behaviour of substance users. The intervention was tailored to suit the outcome of the ASSIST assessment and was created to last 3-15 minutes. The ASSIST feedback report card completed at the end of the ASSIST screening provided client-centred feedback to the participants about their alcohol and psychoactive substance use. Thereafter the FRAMES and Motivational interview techniques were used to deliver the brief intervention. The FRAME is an important aspect of motivational interviewing whose role is to support intrinsic motivation that brings about change through Feedback, Responsibility, Advice, Menu of options, Empathy, and Self-efficacy.

Procedure

Ethical clearance for this study was obtained from the psychology Research Ethics Committee of the University of Nigeria, Nsukka. The authors visited the coordinator of the bus park, who granted permission to conduct the study at the park. Thereafter, the bus drivers were educated on the purpose and benefits of the study. The pre-screening and intervention data were obtained twice on different days and hours. The pre-screening commenced with an interview using the ASSIST tool with each participant. After each screening, participants received an automated scoring, and interpretation of the ASSIST tool. Following this, a brief intervention was also conducted for each participant, after which they were provided posters as take-home materials that contained written information about the risks and effects of the continuous use of alcohol and other psychoactive substances. These materials were translated in short phrases common to three major native dialects in Nigeria (Hausa, Igbo and Yoruba) on each poster. Subsequently, two brief intervention sessions lasting 5 minutes each for each participant took place weekly and in the fourth week. The post-screening was administered to the same set of

participants who had been exposed to the pre-screening, and to a total of 4 brief intervention sessions.

Scoring and Interpretation

A computerized automated scoring ASSIST tool was used to gather information from each participant. This assessment tool has been made into an electronic format by the Adelaide Institute for easy use. The ASSIST tool categorizes the risk level obtained from the participant's answers by automatically interpreting it into low, moderate and high risk. A short step-by-step response was provided to each participant using three major features of FRAMES for the 15-minute brief intervention and was buttressed by the components of a motivational interview similar to Satre et al. (2015). The FRAMES Model is a key technique used by ALBI relying on motivational interviewing techniques.

Statistical analyses

This study adopted a within-subject experimental design using a paired t-test because the brief intervention had three conditions and participants were assigned to the three intervention conditions of the experiment and were tested repeatedly. This aided in determining the statistical differences between the various conditions of exposure. This design was adopted because participants for the study were assigned to every level of the experiment. They were tested repeatedly. This enhanced the possibility of comparison before the exposure to the independent variable and after the exposure. This was done to determine the statistical difference between the various conditions the participants were exposed to. The brief intervention had three conditions (sessions) and the commercial bus drivers were all exposed to the three intervention conditions. All participants were members of a single group, and each participant experienced the initial ASSIST assessment and brief intervention. Afterwards, two more sessions of brief intervention were provided to the same participants once a week for two weeks. The final ASSIST screening and brief intervention was delivered by the fourth week, to the same participants. This lasted for one month. Data were collected before and after the intervention and were analysed using the Statistical Package for Social Sciences (SPSS) tool.

Results

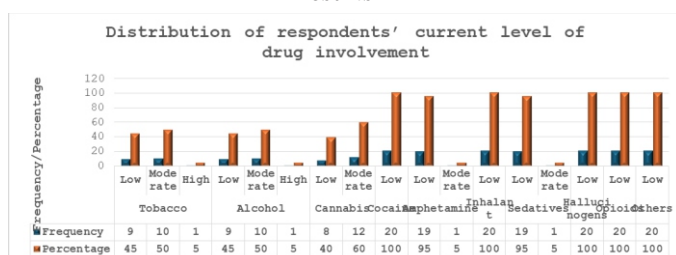


Figure 1

Graphical Representation of distribution of respondents' current level of drug involvement)

Respondents indicated that among all the substances they mentioned, in the past three months, they have used mostly tobacco, alcohol and cannabis.

Table 1

Distribution of respondents' level of drug involvement across substances before intervention

Variables	Categories	Frequency (n)	Percentage (%)
Tobacco	Low	9	45.0
	Moderate	10	50.0
	High	1	5.0
Alcohol	Low	9	45.0
	Moderate	10	50.0
	High	1	5.0
Cannabis	Low	8	40.0
	Moderate	12	60.0
Cocaine	Low	20	100
Amphetamine	Low	19	95.0
	Moderate	1	5.0
Inhalants	Low	20	100
Sedatives	Low	19	95.0
	Moderate	1	5.0
Hallucinogens	Low	20	100
Opioids	Low	20	100
Others	Low	20	100

Table 2

The differences in ASSIST score of participants on Tobacco, alcohol and cannabis use before and after Brief Intervention Management

Substances (N)	Before M	SD	After M	SD	MD	t(df)	p	d
Tobacco (11)	18.55	5.336	9.55	3.174	9.00	9.841(10)	.000	2.967
Alcohol (20)	12.95	7.104	5.80	3.563	7.15	6.862(19)	.000	1.534
Cannabis (12)	18.25	6.690	7.25	4.413	11.00	9.693(11)	.000	2.798

Note. MD = Mean Difference

The paired sample t-test revealed that only scores on tobacco, alcohol and cannabis use were significantly lower after the intervention. Participants only reported the use of these three substances excluding the others.

Discussion

This study utilised the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST) to assess substance use and applied the World Health Organization (WHO) ASSIST Linked Brief Intervention (ALBI) to manage substance use among commercial bus drivers in Lagos metropolis, Nigeria. To the best of our knowledge, this is the first study to apply the ALBI instrument among commercial bus drivers. It was found that conducting sessions of brief interventions with ALBI on drivers reduced substance use. This result is in line with past research (e.g., Assanangkornchai, 2015; Nnaemeka, 2024; Prasad et al., 2023) who reported that the recipients of ALBI experienced a reduction in the use of psychoactive substances when compared to the control group who had not experienced the ALBI intervention. ALBI can be adapted in different cultural contexts while maintaining its core principles (Nnaemeka, 2024), and the findings of this study corroborates the benefits of ALBI in different settings.

A possible reason for the success of the intervention of ALBI in this study was the timeline of the exposure of participants who were required to engage in all stages of the procedure without skipping any before the post-test screening. When appropriate timing is accommodated in an intervention, it improves the extent to which the outcome becomes successful (Johnston et al., 2019). In contrast, a study by Sarkar (2020) revealed that there was no significant difference in level of involvement and risk related to the use of

psychoactive substances between participants who were exposed to ALBI and those who were not. This may be due to the time interval of intervention which was recorded to be six months; compared to the time interval for this current study. Furthermore, baseline stage of change is not a determining factor of the impact ALBI had on the participants' substance use severity and risk. This finding corroborates the major aim of this present study and builds on existing evidence of the aim of ASSIST-linked intervention which was intended to support individuals in moving through Prochaska et al.'s (1992) stages of change (WHO, 2010). In this study, 3 diets of ALBI were conducted with commercial bus drivers which could have contributed significantly to the obtained findings thus far.

Furthermore, our findings revealed the risk level of participants across the 9 substances as listed in the ASSIST. Although most of the participants were within the moderate risk for alcohol and cannabis use, only a minimal proportion of them had a high risk of developing significant health issues due to the hazardous use of tobacco, alcohol and cannabis. This finding is contrary to previous findings showing that majority of the participants reported high severity in the use of tobacco and alcohol (Egesi et al., 2024). The reasons for the differences in reported level of substance may be due to the differences in the characteristics of the study samples in the two studies. For instance, the current study investigated commercial bus drivers while the other study investigated the general population consisting of participants with different careers. The pattern in the current study suggests that while substance use is relatively common at a moderate level among participants, the immediate risk of severe health consequences is limited to a small subgroup. However, the predominance of moderate risk indicates a critical window for preventive and early intervention efforts to prevent escalation into high-risk or harmful use over time.

Limitation of the study and suggestions for further studies

This study has several limitations that should be considered when interpreting the findings. First, this study has a small number of study participants and the use of purposive sampling from a single motor park limit the generalizability of the results to commercial bus drivers in other settings or regions. Hence, generalizing the results across all Nigerian states will require great caution. Second, the within-subject design without a control or comparison group makes it difficult to attribute observed reductions in substance use exclusively to the ASSIST-Linked Brief Intervention, as changes may also reflect social desirability effects, regression to the mean, or other unmeasured influences. Third, the reliance on self-reported substance use data further introduces the possibility of recall bias or underreporting, particularly given the stigmatized nature of substance use among drivers.

Future studies should address these limitations by employing larger and more diverse samples drawn from multiple motor parks in Nigeria and using probability-based sampling techniques. Incorporating randomized controlled or quasi-experimental designs with appropriate comparison groups would strengthen causal inferences regarding the effectiveness of ALBI.

Additionally, longitudinal follow-up assessments are needed to determine the durability of intervention effects over time, and the inclusion of objective or corroborative measures of substance use, as well as relevant contextual factors, would provide a more comprehensive understanding of substance use reduction among commercial bus drivers.

Conclusion

Our findings show that the ASSIST-linked Brief Intervention was effective and relevant at different stages of substance in managing substance use among commercial bus drivers. The intervention may potentially be an effective intervention for prevention of hazardous substance use among commercial bus drivers. The government of Lagos state should consider the implementation of the intervention on a wide scale across all the motor parks in the state.

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