Research Article

# Substance Use among Street Children in the City of Yaounde, Cameroon

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**ABSTRACT**

**Background:** Substance use is known to be more common among street children, sometimes responsible for the runaway and repeated run-away behavior. To be able to reinsert these children, the reasons why there joined the streets, why they use substance and their pattern of substance use need to be understood.

**Methods:** We conducted a descriptive cross-sectional mix method study in February 2021 in the streets of Yaounde. We did a semi-structured interview of 159 street children using a sociodemographic questionnaire made of open questions and, the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST), version 3.0. The data were analyzed using R 4.1.0 for Windows.

**Results:** All street children were male. The most common reason for joining the streets was, questing for money, reported by one-quarter of the children. 60% of them used a substance, of which half used a substance because of peer pressure. The most commonly used substance was cannabis (36.48%), followed by tobacco (35.85%). 14.47% were dependent on tobacco and 11.32% on cannabis.

**Conclusion:** Substance use and substance use disorders are highly common among street children of Yaounde. This needs to be addressed to facilitate their reinsertion as shown in other studies. The mechanisms that lead to the absences of girls in the streets should also be explored to see if they can be applied to boys.

**Keywords:** Substance use, Street children, Sexual abuse

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## ABBREVIATIONS

MASSIST: Alcohol, Tobacco and Substance Use Screening Test; YLTC: Yaoundé Listening and Transit Center; SCs: Street Children; WHO: World Health Organization; IQR: Interquartile Range

## INTRODUCTION

In 2018, 5.4% of the world population aged between 15 and 64 years old used a drug in the previous twelve months. In Africa, this was 8.4% and the absolute number of people using drugs on the continent is expected to increase by 38% between 2018 and 2030. Drug use killed 494,000 people in the world in 2019; 37,000 people in Africa in 2014 and the resources to fight drug use in Africa are limited. Drug use is usually initiated during adolescence or early adulthood (UNODC, 2021; Bah YM, 2018). Street Children (SCs) are known to use more substances than their counterparts who have never experienced street life (Embleton L, et al., 2013; Tucker JS, et al., 2011).

In the USA, it is estimated that every year, 6%-7% of adolescents run away from home (Tucker JS, et al., 2011). In the UK, 11% of the children leave home for the street before 16 years old (Meltzer H, et al., 2012). SCs are known to face more adversities in their lives. This occurs as a consequence of a dysfunctional family, where they are often physically abused, sexually abused or the guardians are involved in problematic substance use, pushing them to leave the family environment. In the streets, they are also exposed to violence, which sometimes is more than the one at home. In some cases, the violence may occur as a consequence of the child's behavior. This behavior may include substance use, conduct disorders, or depressive symptoms as some of the reasons why they are in the streets (Tucker JS, et al., 2011; Martinez RJ, 2006). As a survival mechanism in the streets, they often use substances to cope with their psychological stress, as a way to generate income for their basic needs, and a way to socialize through gangs affiliations (Martinez RJ, 2006). All this explains why SCs have been found to use more substances and demonstrate more drug addictive behaviors than their counterparts who have never experienced street life. SCs and adults who have experienced street life have been found to have a higher risk of suicidal behavior, depression, unsafe sex, and lower educational achievement in the UK and the USA (Tucker JS, et al., 2011; Meltzer H, et al., 2012; Zygo M, et al., 2019). In Taiwan adolescents who have experience street life use more substances than their counterparts (Wang SH, et al., 2010). The higher risk of substance dependence in adults who have experienced street life persists after controlling for several factors such as family functioning, psychiatry morbidity, previous substance use before moving to the streets, and more. Those using drugs have also been found to be harder to rehabilitate (Martinez RJ, 2006).

In Cameroon, in 2015, Cumber and Tsoka-Gwegweni in a study including 399 street children from the three mean cities of the country: Douala, Yaounde, and Bamenda found that all of them were using a substance. The use of these substances was significantly associated with risky sexual behaviors including rapes and being arrested by the police (Cumber S and Tsoka-Gwegweni J, 2016). Tassou did a similar study in Yaounde in 2011 and also reported the use of substance by SCs (Tassou A, 2011). None of these studies in Cameroon used a standardized screening tool for substance use, the diagnostic was merely based on a yes or no answer, and they didn't search for the factors associated with substance use in this population.

Yaounde is the capital city of Cameroon. As such, with its higher level of urbanization, it is an attractive place for street children and a conducive environment for the use of drugs (UNODC, 2021; WHO, 2003). It is, therefore, crucial to know the types and patterns of substance use among SCs of Yaounde to effectively support and reinsert them.

## MATERIALS AND METHODS

To determine the types and patterns of substances use by street children in the city of Yaoundé, we did a descriptive, both qualitative, and quantitative cross sectional study in the streets of Yaounde during the whole month of April 2021.

The Yaounde Listening and Transit Center (YLTC) is a governmental institution in charge of the reinsertion of SCs in the city of Yaounde. We obtained from them a list of the sites in the city where street children can be found. They were 15 in total. Following their advice, we excluded from the study two sites because street children could be found there only at night (mini ferme, omnisport ) and two other sites because of the high rate of crimes (Ngousso rail, Mvog-Mbi rail). We were left with eleventh sites: Avenue Kennedy, Marché du Mfoundi, Poste centrale, Nvog-Ada, Marche des bœufs d'Etoudi, Gare voyageurs, Derrière Hilton hôtel, Carrefour MEEC, Gare routière Mvan, Centre social EDIMAR, Centre d'écoute et de transit de Yaoundé. We were also recommended not to record the interviews because SCs might find it suspicious.

We approached the SCs together with the social workers of the YLTC in charge of SCs for the data collection. At each of these sites, the social worker contacted the SCs leader for the site. We explained to him the purpose of the study, and how this can help to support them in the future. The leader would then call the maximum number of street children of the site; explained to the group of SCs the purpose of the study; and excluded those already included in the study in another site, those aged more than 20 years, or those intoxicated. The primary investigator did a one-on-one interview in an intimate and quiet place at the SCs site. Free verbal consent was sought from each of them.

The interview was done either in French or English depending on which one the child was more comfortable with. The interviews were guided by a sociodemographic questionnaire made of open questions and the Alcohol Smoking and Substance Involvement Screening Test (ASSIST) Version 3.0. Depending on the answer, the questions could be followed by more specific questions. The ASSIST is a screening tool built by WHO to screen for substance use disorders. It has a sensitivity of 54%-97% and a specificity of 50%-96%, depending on the substance concerned (Humeniuk R, *et al.*, 2008; MINEDUB, 2012).

The nomenclature of the level of schooling used in our study is derived from the structure of the Cameroonian educational system whereby, we have basic education and secondary education. The basic education is made of 2 years of nursery school and 6 years of primary school. The secondary school is made of two cycles, first and secondary cycle, 4 and 3 years respectively in the francophone schooling system; 5 and 2 years respectively in the Anglophone schooling system (MINESEC, 2020; IHSN, 2010). The nomenclature of the parents' occupation used here is derived from the 2010 Institute for Statistical Analysis survey on employment and the informal sector in Cameroon (The Children's Society, 2011).

At the end of the interviews, the ASSIST questionnaire was scored to obtain the ASSIST specific substance involvement score for each substance and child. Children whose pattern of use exposed them to risk (specific substance involvement score >10 for alcohol or >3 for any other substance) were informed and recommended to reach out to the YLTC for support. All street children present at the interview site were offered refreshments, educated about the risks of using a psychoactive substance, and encouraged to take part in the weekly social education days organized by the YLTC for their social and family reintegration. The answers to open questions were grouped into similar answers. The SCs sites with similar characteristics were grouped: Mfoundi with Gare voyageur because both are at the center of the city and have a social center providing them social support, and children arriving in the street by train usually arrive in these sites first; Kennedi with Hilton and Mvogada because they are at the center of the city and don't have a social center.

The data was entered on Epi Info version 7.2.4.0 and analyzed with R 4.1.0 for Windows. Categorical nominal and ordinal variables were expressed as effective and percentage. Quantitative variables were expressed as mean ± standard deviation. The comparison of categorical variables was performed by the Chi-square test or Fisher's exact test when one of the expected numbers was less than 5. The comparison between quantitative variables was performed according to the nature of the distribution by Student's t-test or Mann Whitney's t-test, depending on whether the distribution in each group was normal or not, respectively, and when the variable had two modalities. Univariate analysis by logistic regression was performed to identify possible risk factors for substance use. All the tests were done with alpha significance level set at 5%. This study was conducted in partial fulfillment of a bachelor of medicine by the primary investigator. Ethical clearance was obtained from the institutional ethic committee of Universite des Montagnes authorisation Number 2021/070/UdM/PR/CIE.

## RESULTS

The study was proposed to 178 people of which, eight refused to be part of the study; two were excluded because they were intoxicated and nine were excluded because they were aged more than 20 years old. A total of 159 SCs were retained in the study.

### Characteristics of street children of Yaounde

All the street children were male, with an average age of 16.1 (± 2.54) years old, and a median (IQR) age of 16 (14-18) years. They had spent on average 3.5 (± 6.9) years in the streets. The site with the highest number of street children was Kennedy, with 33.3% of all the street children of Yaounde. It was followed by Nvogada, with 16.4%. The most represented regions of origin were East 30.2% and Adamaoua 24.5%. None of them came from South and south-west regions. None of them have ever been to university, while 24.5% of them have never been to school. 37.1% made money as carriers and 5% through alms. 92.5% had at least one parent alive, these parents spread across all job categories. Parents' profession was only provided for those who had at least one parent alive at the time of the interview. We included 17 children at the site of Etoudi; none of them used a substance. In the sites of Hilton and MEEC, was included 4 and 6 SCs respectively; all of them used substances (*Table 1*).

**Table 1: Substance use by street children in Yaounde**

| Characteristics | Pas de SPA N=64 | SPA N=95 | Total N=159 | p-value | N |
|---|---|---|---|---|---|
| Sites in the street | | | | | |
| Etoudi | 17(26.6%) | 0(0.00%) | 17(10.7%) | <0.001 | 159 |
| Mfoundi/gare voyageur | 21(32.8%) | 14(14.7%) | 35(22.0%) | | |
| Hilton kennedi nvoada | 20(31.2%) | 63(66.3%) | 83(52.2%) | | |
| Lonkack | 1(1.56%) | 3(3.16%) | 4(2.52%) | | |
| Carrefour MEEC | 0(0.00%) | 6(6.32%) | 6(3.77%) | | |
| Mvan | 5(7.81%) | 9(9.47%) | 14(8.81%) | | |

| | | | | | |
|---|---|---|---|---|---|
| Age | 14.9 ± 2.57 | 16.8 ± 2.22 | 16.1 ± 2.54 | <0.001 | 159 |
| Level of education | | | | | |
| None and primary | 52(81.2%) | 60(63.2%) | 112(70.4%) | 0.023 | 159 |
| Secondary | 12(18.8%) | 35(36.8%) | 47(29.6%) | | |
| Region of origin, grouped | | | | | |
| Centre/South/East | 29(45.3%) | 45(47.4%) | 74(46.5%) | 0.404 | 159 |
| Littoral/Great West | 2(3.12%) | 8(8.42%) | 10(6.29%) | | |
| Septentrion | 33(51.6%) | 4(43.2%) | 74(46.5%) | | |
| Foreign | 0(0.00%) | 1(1.05%) | 1(0.63%) | | |
| Region of origin | | | | | |
| Adamaoua | 23(35.9%) | 16(16.8%) | 39(24.5%) | 0.137 | 159 |
| Centre | 10(15.6%) | 16(16.8%) | 26(16.4%) | | |
| East | 19(29.7%) | 29(30.5%) | 48(30.2%) | | |
| Far north | 4(6.25%) | 6(6.32%) | 10(6.29%) | | |
| Littoral | 0(0.00%) | 3(3.16%) | 3(1.89%) | | |
| North | 6(9.38%) | 19(20.0%) | 25(15.7%) | | |
| Nord-West | 0(0.00%) | 1(1.05%) | 1(0.63%) | | |
| West | 2(3.12%) | 4(4.21%) | 6(3.77%) | | |
| Foreign | 0(0.00%) | 1(1.05%) | 1(0.63%) | | |
| Number of weeks spent in the street | 65.1 ± 81.8 | 260 ± 440 | 182 ± 357 | <0.001 | 159 |
| Source of income | | | | | |
| Alms | 8(12.5%) | 0(0.00%) | 8(5.03%) | 0.001 | 159 |
| Trader | 13(20.3%) | 21(22.1%) | 34(21.4%) | | |
| Cleaner | 9(14.1%) | 29(30.5%) | 38(23.9%) | | |
| Carrier | 25(39.1%) | 34(35.8%) | 59(37.1%) | | |
| Robberies | 0(0.00%) | 2(2.11%) | 2(1.26%) | | |
| Cattle guarding | 9(14.1%) | 9(9.47%) | 18(11.3%) | | |
| Number of living parents | | | | | |
| 0 | 2(3.12%) | 10(10.5%) | 12(7.55%) | 0.021 | 159 |
| 1 | 17(26.6%) | 38(40.0%) | 55(34.6%) | | |
| 2 | 45(70.3%) | 47(49.5%) | 92(57.9%) | | |
| Profession of parents | | | | | |
| Agriculture/livestock/ hunting/artisan | 27(42.9%) | 27(31.4%) | 54(36.2%) | 0.126 | 149 |
| Administrative author- ity/executive | 0(0.00%) | 5(5.81%) | 5(3.36%) | | |
| Middle management/ technician | 6(9.52%) | 3(3.49%) | 9(6.04%) | | |
| Unemployment | 9(14.3%) | 12(14.0%) | 21(14.1%) | | |
| Clerk/independent trade | 15(23.8%) | 30(34.9%) | 45(30.2%) | | |
| Other | 6(9.52%) | 9(10.5%) | 15(10.1%) | | |
| Reasons for being in the street | | | | | |
| Family conflict | 5(7.81%) | 12(12.6%) | 17(10.7%) | 0.482 | 159 |
| Curiosity | 7(10.9%) | 12(12.6%) | 19(11.9%) | 0.941 | 159 |
| Death of parents | 0(0.00%) | 7(7.37%) | 7(4.40%) | 0.042 | 159 |
| Juvenile delinquency | 5(7.81%) | 25(26.3%) | 30(18.9%) | 0.007 | 159 |
| Unschooling | 14(21.9%) | 16(16.8%) | 30(18.9%) | 0.556 | 159 |
| Desire for freedom | 2(3.12%) | 2(2.11%) | 4(2.52%) | 1 | 159 |
| Divorce remarriage | 2(3.12%) | 9(9.47%) | 11(6.92%) | 0.202 | 159 |

| | | | | | |
|---|---|---|---|---|---|
| War | 0(0.00%) | 1(1.05%) | 1(0.63%) | 1 | 159 |
| Imitation | 1(1.56%) | 7(7.37%) | 8(5.03%) | 0.145 | 159 |
| Physical abuse/negligence by guardian | 8(12.5%) | 19(20.0%) | 27(17.0%) | 0.308 | 159 |
| Poverty | 17(26.6%) | 12(12.6%) | 29(18.2%) | 0.043 | 159 |
| Quest for money | 26(40.6%) | 15(15.8%) | 41(25.8%) | 0.001 | 159 |
| Physical abuse/negligence by parents | 7(10.9%) | 3(3.16%) | 10(6.29%) | 0.091 | 159 |
| Unspecific reason | 1(1.56%) | 1(1.05%) | 2(1.26%) | 1 | 159 |
| Reasons for substance use | | | | | |
| Reduce anxiety | - | 13(13.8%) | 13(13.7%) | - | - |
| Courage | - | 18(19.1%) | 18(18.9%) | - | - |
| Strength | - | 14(14.9%) | 14(14.7%) | - | - |
| Cold | - | 5(5.32%) | 5(5.26%) | - | - |
| Sleep | - | 5(5.32%) | 5(5.26%) | - | - |
| Pleasure | - | 13(13.8%) | 13(13.7%) | - | - |
| Imitation | - | 47(50.0%) | 48(50.5%) | - | - |
| Mark my territory | - | 3(3.19%) | 3(3.16%) | - | - |
| Reduce physical pain | - | 1(1.06%) | 1(1.05%) | - | - |
| Number of substances used | | | | | |
| 0 | - | - | 64 (40.3%) | - | 159 |
| 1 | - | - | 42 (26.4%) | | |
| 2 | - | - | 18 (11.3%) | | |
| 3 | - | - | 11 (6.92%) | | |
| 4 | - | - | 11 (6.92%) | | |
| 5 | - | - | 4 (2.52%) | | |
| 6 | - | - | 5 (3.14%) | | |
| 7 | - | - | 4 (2.52%) | | |

Since they arrived in the streets, 60% have used a substance and the same 60% reported using a substance in the 3 months before the interview. The median (IQR) age for those not using a substance and those using was 15 (13-17) years, and 17 (15.5-18) years respectively. In the 3 months before the interview, 40.9% used an illicit substance (drug). The drugs we searched for are amphetamine, sedatives, cannabis, cocaine, inhalants, hallucinogens, and opioids. One-third of the street children used more than one substance. The most common reasons for being in the streets were delinquency (18.9%), unschooling (18.9%), and Maltreatment by the guardian (17%). The most common reasons for substance use were imitation (50.5%) and to get courage (18.9%).

### Pattern of substance use among street children of Yaounde

The main contributor to harmful substance use was cannabis, followed by tobacco. Tobacco is responsible for 14.47% of the cases of dependence, followed by cannabis at 11.32% (Tiwari PA, *et al*., 2002). These children didn't use amphetamine and hallucinogens (*Table 2*). Some children also reported the presence of benzhexol in the streets.

**Table 2: Pattern of substance use in the three months before the interview**

| Substance | Non user n (%) | Non problematic substance use n (%) | Hazardous substance use n (%) | Dependence n (%) | User n (%) |
|---|---|---|---|---|---|
| Alcohol | 119(74.84) | 28(17.61) | 9(5.66) | 3(1.89) | 40(25.16) |
| Amphetamine | 159(100) | 0(0) | 0(0) | 0(0) | 0(0) |
| Sedatives | 143(89.94) | 4(2.52) | 6(3.77) | 6(3.77) | 16(10.06) |
| Cannabis | 101(63.52) | 10(6.29) | 30(18.87) | 18(11.32) | 58(36.48) |
| Cocaine | 142(89.31) | 5(3.14) | 6(3.77) | 6(3.77) | 17(10.69) |
| Inhalants | 130(81.76) | 9(5.66) | 13(8.18) | 7(4.4) | 29(18.24) |
| Hallucinogens | 159(100) | 0(0) | 0(0) | 0(0) | 0(0) |
| Opioids | 143(89.94) | 6(3.77) | 6(3.77) | 4(2.52) | 16(10.06) |
| Tobacco | 102(64.15) | 10(6.29) | 24(15.09) | 23(14.47) | 57(35.85) |

### Factors associated with substance use among the street children of Yaounde

On the univariate regression, the factors found to be significantly associated with substance use by the street children of Yaounde were-The site in the street, age, level of education, time spent in the streets, source of income, number of living parents; being in the streets because of juvenile delinquency, poverty, and being in the street to look for money (*Table 1*).

## DISCUSSION

This study focused on the use of substances by street children in the city of Yaounde and their patterns of use. All the children found in the streets were male, aged on average 16.1 ± 2.54 years old, they had spent on average 3.5 (± 6.9) years in the streets. 60% of them used at least one substance, and 40.9% used a drug in the three months before the interview.

The absence of girls among SCs of Yaounde contrast with the findings of Embleton and al in Kenya in 2013, where 15% of SCs were girls (WHO, 2003); Joan S in the USA, in the state of South Dakota, where low frequency run away were 46.9% female and high frequency run away were 51.75 female (Tucker JS, *et al.*, 2011); Shi-Heng Wang in Taiwan where adolescents who had run away only once and for one day or less were 48.1% female and those who had run for a longer time or more than once were 42.7% female (Wang SH, *et al.*, 2010); Gwyther Rees in the UK where lifetime runaways were 10% among females and 8% for males (Tiwari PA, *et al.*, 2002); Cumber and Tsoka-Gwegweni in 2015 in Yaoundé where 18.8% of SCs were girls. This difference can be explained by the construction of social housing specifically for girls in 2020 in Yaoundé. The absence of girls can also be explained by the exclusion in this study of SCs sites which are only active at night. These night sites are known for prostitution, making it more likely to have female SCs (UNODC, 2021). Once in the streets, one of the exit ways is marriage, which might be relatively more accessible to girls compared to boys. All these factors can account for the absence of girls in our sample.

The median (IQR) age of SCs was 16 (14-18) years, and they had spent on average 3.5 (± 6.9) years in the streets. It can be estimated that the average age for joining the streets was 12.5 years old which is closed to the 12 years old average age for the onset of puberty among boys. This aligns with the current literature stipulating that puberty plays a role in the running away behavior because at this age, the child becomes more aware of the environment and the possibility to run away but, because he lacks abstract thinking, he hardly perceive the risk of the streets (Pagani L, *et al.*, 1999).

The main reasons why they joined the streets were the quest for money 25.8%, delinquency 18.9%, unschooling 18.9% and poverty 18.2%. These findings are different from those of the studies done in developed countries where the main determinant for joining the streets were child abuse and dysfunctional families (Meltzer H, *et al.*, 2012; Martinez RJ, 2006; UNODC, 2021; Pagani L, *et al.*, 1999). Those who said that they joined the streets to get money said that this had nothing to do with the level of wealth in the family. Meanwhile, it makes sense to think that all the reasons mentioned above are related to poverty (Pagani L, *et al.*, 1999). So, this difference observed in Yaounde might be the effect of poverty. None of them mentioned sexual abuse. This might be because it wasn't specifically asked.

Since they arrived in the streets, 60% of those children have used a substance. This is similar to the average 60% of substance use by SCs in developing countries identified in 2013 by Embleton and al. Meanwhile, in our findings, the proportions of substances taken are very different (Martinez RJ, 2006). Meanwhile, this is very different from the 100% found by cumber and Tsoka-Gwegweni in 2015. This difference might be the result of the bias introduced by the snowball sampling. The site of Etoudi where we included 17 SCs is the only site where there was no substance use. The presence in that area of a koranic school where SCs are allowed to come and study, a mosque that is opened to SCs and their general acceptance by the community of this area might be the possible contributors to this. The main reasons for using substances were imitation 50%, to get courage 19.1%, to get strength 14.9%, to reduce anxiety 13.8%, and pleasure 13.8%. This is similar to the findings of Ruby J. Martine in a Midwestern inner-city detention center in the USA whereby, teens said that they used substances to cope with their stressful lives both before and after joining the streets and as a way of socializing with peers (Martinez RJ, 2006).

### Factors associated with substance use

The factors that are associated with the use of substances by these SCs in the three months before the interview were: The SCs' site, age, level of education, time spent in the streets, source of income, number of living parents; joining the streets because of juvenile delinquency, poverty, or in a quest for money.

The SCs site can influence substance use by any means. The site of Gare voyageur is usually a landing site in the streets. This might lead to several street naïve and more submissive children, more likely to accept a proposition of substance use or still about to experience substance. As shown here and supported by the findings of Wang and al, longer stay in the streets is associated with a higher risk of substance use (Wang SH, *et al.*, 2010). Different sites have different social support systems which may include, the relative acceptance of SCs by the community, availability of social support centers such as the one located in the site of Mfoundi and Gare voyageur. Children who join the street for money are likely to sell drugs to make money, thereby more likely to use drugs. Among SCs in Yaounde, there is a belief that some substances may help to perform better at more physically challenging jobs. This is how these jobs might motivate the use of a substance. Having one or both parents' dead might lead to more adversity, thereby motivating the consumption of substances to cope with (Martinez RJ, 2006). Juvenile delinquency and poverty are related (Pagani L, *et al.*, 1999).

## CONCLUSION

This study was about substance use among SCs, in the city of Yaounde. All found SCs were male. In the three months before the interview, 60% of them used at least one substance. The main reason for using was imitation at 50%. Addressing their substance use will facilitate their reinsertion.

## LIMITATIONS OF THE STUDY

The main limitation of our study was that some sample side which did not allowed for a multilinear regression. Even though open questions are good, it would have been more interesting if specific questions about drug trafficking, and sexual abuse were asked.

## AUTHORS' CONTRIBUTIONS

VM is the primary investigator; she initiated this research idea, chose the topic, did the literature search, participated in the design of the study, collected data, analyzed the data, and did writings. MT chose the topic, did the literature search, participated in the design of the study, analyzed the data, and did writings. JD, participated in the design of the study, and reviewed the work at each step. CN participated in the design of the study and reviewed the work at each step. CE reviewed the work at each step. All authors read and approved the final manuscript.

## FUNDING

## REFERENCES

1.  World drug report 2021. United Nations Office on Drugs and Crime (UNODC). 2021.

2.  Bah YM. Drug abuse among street children. Mathews J Case Rep. 2018; 3(1): 1-11.

3. Embleton L, Mwangi A, Vreeman R, Ayuku D, Braitstein P. The epidemiology of substance use among street children in resource-constrained settings: A systematic review and meta-analysis. Addiction. 2013; 108(10): 1722-1733.

4. Tucker JS, Edelen MO, Ellickson PL, Klein DJ. Running away from home: A longitudinal study of adolescent risk factors and young adult outcomes. J Youth Adolesc. 2011; 40(5): 507-518.

5. Meltzer H, Ford T, Bebbington P, Vostanis P. Children who run away from home: Risks for suicidal behavior and substance misuse. J Adolesc Heal. 2012; 51(5): 415-421.

6. Martinez RJ. Understanding runaway teens. J Child Adolesc Psychiatr Nurs. 2006; 19(2): 77-88.

7. Zygo M, Pawłowska B, Potembska E, Dreher P, Kapka-Skrzypczak L. Prevalence and selected risk factors of suicidal ideation, suicidal tendencies and suicide attempts in young people aged 13-19 years. Ann Agric Environ Med. 2019; 26(2): 329-36.

8. Wang SH, Chen WC, Lew-Ting CY, Chen CY, Chen WJ. Running away experience and psychoactive substance use among adolescents in Taiwan: Multi-city street outreach survey. BMC Public Health. 2010; 10(1): 1-9.

9. Cumber S, Tsoka-Gwegweni J. Pattern and practice of psychoactive substance abuse and risky behaviours among street children in Cameroon. South African J Child Heal. 2016; 10(3): 166-170.

10. Tassou A. Street children in the city of Yaoundé in Cameroon: Between drugs, work and prostitution. 2011.

11. The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST): Guidelines for use in primary care draft version 1.1 for field testing. World Health Organization (WHO). 2003.

12. Humeniuk R, Ali R, Babor TF, Farrell M, Formigoni ML, Jittiwutikarn J, *et al*. Validation of the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). Addiction. 2008; 103(6): 1039-1047.

13. Educational system. Ministry of basic education (MINEDUB). 2012.

14. Francophone subsystem. Ministry of Secondary Education (MINESEC). 2020.

15. Anglophone subsystem. Ministry of Secondary Education (MINESEC). 2020.

16. Second survey on employment and the informal sector in Cameroon 2010. International Household Survey Network (IHSN). 2010.

17. Rees G. Still running 3. The Children's Society. 2011.

18. Tiwari PA, Gulati N, Sethi GR, Mehra M. Why do some boys run away from home? Indian J Pediatr. 2002; 69(5): 397-399.

19. Pagani L, Boulerice B, Vitaro F, Tremblay RE. Effects of poverty on academic failure and delinquency in boys: A change and process model approach. J Child Psychol Psychiatry. 1999; 40(8): 1209-1219.