

PREVALENCE AND DETERMINANTS OF SUBSTANCE ABUSE AMONG STREET CHILDREN IN MEKELLE CITY, TIGRAY, ETHIOPIA

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ABSTRACT

Globally United Nations Children's Fund (UNICEF), 2003 reported that 'the latest estimate put the numbers of street children as high as 100 million. Preventing drug abuse in street children is a big challenge to public health experts. Very few studies have been done on the subject of street children in Tigray. Based on a forum on Street Children study before 10 years back, nearly 18.7% of the children had reported to be addicted to substance in Mekelle city. To assess the prevalence and determinants of substance abuse among street children in Mekelle city, Tigray, Ethiopia. A cross-sectional study was employed. One hundred and seventy-two street children from eight to eighteen years were participated. First, street was selected based on their peak concentration. Next, before data collection undertaken every single street child was identified by street children coordinator to make sure whether they are street children or not. Last, data was gathered by conducting face-to-face interview with street children by using semi-structured questionnaire from one hundred and seventy-two street children, 65 of them were substance abusers. Age of the children was the only variable that had significant $p < 0.05$. Among the substance abusers, 59 children were between 15-18 years age. Individual/peer pressure factors were the most frequently reported by 81 (47.1%). Substances abused on a nearly daily basis by street children in Mekelle accounted for 97 Tella drinkers, 60 Chat chewers, 56 Cigarette smokers, and 32 Arrekey drinkers.

Keywords: *Street Children, Substance Abuse.*

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INTRODUCTION

Globally in 1989, UNICEF estimated 100 million children were growing up on urban streets around the world. Girls could constitute fewer than 30 per cent of street children, but this may be partly because they are less visible which makes them more vulnerable.¹ Drug abuse by children on the streets was common to numb the pain and deal with the hardships of a street life. The continuous exposure to harsh environments and the nature of their lifestyle make them vulnerable to substance abuse, which threatens their mental, physical, social and spiritual wellbeing. According to the WHO statistics, 25 - 90 % of street children used psychoactive substances, including medicines, alcohol, cigarettes, heroin, cannabis, and readily available industrial products such as shoe glue.

Africa has experienced unprecedented level of crisis, from natural disasters to ethno-religious wars and the impacts of HIV/AIDS.; in which all of these factors added a quantum leap in the number of street children to be 40 million (UNICEF 2007). Even in Ethiopia, the number of street children is significant. According to Mekelle Bureau Labor and Social Affair (MBLSA) report, 2010, there were more than 280 street children living in Mekelle city.

It is widely recognized that street children have transitory life style and are vulnerable to inadequate nutrition, physical injuries, substance abuse, and health problems. Some of the street children might be part of entire families who live on the street. Others might be born to older street girls. They do not have what society considers appropriate relationships with family, education and health services.

According to WHO (2009) all developing

countries suffer from the problem of street children and it is likely to have long-term impacts on societies throughout the world unless effectively addressed. Substance abuse among street children was not given a focus and not well explained in Ethiopia. In Ethiopia, alcoholism, cigarette smoking, and Chat chewing, were the day-to-day phenomena seen among the street children. Studies made in Ethiopia showed that increasing numbers of street children often seen in most urban centers. Most of these street children were involved in begging, pick-pocketing, drug trafficking, child prostitution, scavenging, directing motorists to parking spaces and hawking. A study conducted on street children in Mekelle by Forum on Street Children (FSCE), showed that 18.7% of the children has reported to be addicted to substance use. The proportion of addicted boys were higher than the girls and the time of started to use substance was as early as 10 years age. Most of them were Cigarettes smokers (55.7%) and in the age range of 10-12 years. However, review of literature showed that very few old studies have been done on the subject of street children in Tigray and it is also difficult to obtain official statistics on the number and situation of street children related to substance abuse. There is also a scarcity of data on the risk factors associated with substance abuse of street children in Mekelle. Therefore, the need for conducting this study on substance abuse of street children in Mekelle city, fulfill the gap. Is quite significant to undertake a research study on the prevalence and risk factors of substance abuse which jeopardizes the child's psychological and physical health needs and that can certainly lead to a wide range of physical, psychological and health

problems Therefore, This research study, as proposed in this paper it is essential because the problem does not only have implications for the child but also for the country as a whole.

Significance of the study:

In Ethiopia, alcoholism, cigarette smoking, and Chat chewing, were the day-to-day phenomena seen among the street children. Addressing substance abuse problem provides a window in to the lives of these street children and an opportunity to address health and development issues, including HIV/AIDS, other sexually transmitted infection, mental health, and injury prevention. The finding of this study will be used for better understanding of the problem of substance abuse among the street children in Mekelle city so that it can be helpful for planning and intervention on the issue of substance abuse.

METHODOLOGY

Study area & period

This study was conducted in Mekelle city, Tigray regional state from March to June, 2013, using cross sectional study design. According to the recent Population and Housing Census, the population of the town was estimated at more than 280,000. Source population was including all street children found in Mekelle city, and the study population was street children age between 8-18 years old living and/or working on the streets of Mekelle city.

Sample size determination and sampling procedure

Sample size was computed based on single population proportion formula, and using the prevalence of substance abuse 50.3 %since lack of similar study in Ethiopia, z-value of

1.96 at 95% confidence interval and margin of error is 5%, non-response rate 6%. Using single population proportion formula, $n = 385$ but source population of the research project was less than 10,000 ($N=280$), correction formula was used; to be $n = 162$. After adding the non-response rate, the sample size was increased to 172. First, street was selected based on their peak concentration (at bus station, where they live). Next, before data collection under taken every single street child was identified by street children coordinator used remembering list to identify the street children and to make sure whether they are street children or not. Last, data was gathered by conducting face to face interview with street children by using semi structured questionnaire in local language. Study units available at the time of data collection were selected by convenience sampling method. To control the quality of data, data collectors had trained how to collect and handle data.

Data collection procedure & measurement

The dependent variable was substance abuse and independent variables were: Age, sex, income, living status, place of birth, marital status, parental status, religion, Community factors, family factors, friends' factor, individual factors, children category/living status.

Data quality assurance

Structured questionnaire was used and translated in Tigrigna by different people for consistency. Four female with diploma holders who had experience on data collection were recruited to collect data. One supervisor who has BSc degree in Nursing was used for supervisory activities along

with the principal investigator. Training were given to data collectors and supervisor by the investigator for two days on the objectives, relevance of the study, and confidentiality of the study respondent's right, about pretest, informed consent and data collection process and thereby creating friendly atmosphere to reduce their stress as the study touches sensitive issues. Supervision was made every day by the investigator to check the completeness of each questionnaire. Questionnaires were pretested on 10% inmate of the street children in Wukro town prior to actual data collection period and questionnaires were modified based on the findings.

Data management and analysis

Data were analyzed using SPSS version 16 software Statistical analysis: Statistical significance was estimated. Significance defined as $p < 0.05$. Then significant variables observed in the bivariate analysis at ($p > 0.05$) were subsequently included in to the multivariable logistic regression to detect the possible association with the outcome and to control confounding effect. The strength of statistical association was measured by adjusted odds ratios and 95% confidence intervals. A variable having $P < 0.05$ was considered as statistically significant variable in all model. Finally the result were summarized and presented by texts, frequency tables and other summary statistics.

Ethical clearance

Ethical clearance was obtained from Mekelle University-College of Health Sciences, research and ethical review committee. Official letter were obtained from Mekelle social affairs office. The purpose of the study was explained to the

street children and they were invited to participate voluntarily. The interviews were conduct with autonomous and held in a comfortable place (separately) where confidentiality could be maintained.

RESULT

Out of 172 of surveyed children, there were 131(76.2%) males and 41(23.8%) females. Of those, 42(24.4) were between 8-10 years, while those between 15-18 years old are 101 accounting above 58% of the total respondents. 95.3% of the respondents have not been married (see table 1).

Among the categories of street children, 19 out of 65 street-off children were substance abusers, whereas from the total 96 street-on children, 42 were substance abusers. From the total 65 substance abused children 49 of them were boys and the rest 16 were females. Among the substance abuser, 59 children were between 15-18 years age, and onechild was at age of 8-10 rest 5 children are between age group of 11-14. (By Dr. John Ewing 1984 listed at table) (See table 4).

According the finding of the study, 63 out of 110 substance users (which was 57.3%) consider that community is the main influencing factor for them for substance abuse, 55 (which was 50 %) respondent children said that family is the main factor for children to be addicted to substance and 83 (75.5%) respondents said Yes and agreed that peer or individual factors are the main factor for substance abuse (see table 5). About 70% of children indicated that they are working as daily labors on the street 18 children are involved in petty trades, 9 work as shoe shiners. In addition, 12 girls who were underage were found to be involved in prostitution. Moreover, 41 children generate their daily income through

different forms of begging (see figure 1). As clearly depicted in the table below by the first row of the table, Cocaine, Pethidine, Cough syrup, Pain pill, pentobarbital and diazepam are all types of drugs that street children in Mekelle didn't use at all. Second row of the table illicit drugs and other substances used by small number of street children. The 3rd group of substances highlighted, the 3rd row represents the most widely used types of substances among the street children in Mekelle. Almost equal number of 56 children said that they have used or are addicted to smoking Cigarettes, chewing Chat and drinking beer (see table 2).

Multi variant logistic regressions were applied taking Substance use as dependent variable, history of parental substance use and activity on the street as independent variable. After analysis, children spent their time begging were 60% less risky (AOR 0.392) than daily laborer. Female spent their time in prostitute were 5.94 times higher risky for substance use than daily laborer. Respondents of 15-18 age groups were 43.248 times more likely substance abuse than 8-10 years age group (p value <0.005). The male respondents were also at increased risk of substance abuse (p<0.05).

Children whose mothers with history of substance use were 66% less likely risky for substance abuse (AOR 0.340) than children whose fathers substance use and children whose stepfathers were use substance were 4.316 times more likely substance use than children whose fathers use substance.

Multi variant logistic regression was also applied taking Substance abuse as dependent variable and age, sex, substance use history in the family, living status and daily activity on street as independent variable. Age of the children was the only variable that reached

significant value (see table 7).

DISCUSSION

The purpose of this study was to determine the characteristics of substance abuse among the street children. Based on the WHO (14) substance abuse criteria, 65 (37.7%) were abusers of one or more form of substances; Ethiopia is geographically situated in a very strategic place, where there is easy access to Asia, Europe and other parts of Africa. Moreover Ethiopia frontiers are vast and link with about five countries, which increase the potential of drug smuggling. In the past few years there has been movement of heroin from the Indian subcontinent to West Africa and then to Europe and North America. The rail connecting addis Abeba, Dire Dawa and Djibouti create fertile ground for smuggling and trafficking cannabis and exporting that. In country cannabis sativa is being cultivated in central, west, and eastern administrative regions, some of the cultivation area are hidden among other groups or in wooded area. This makes it difficult to detect and destroy the plant. Cannabis (hashish) smoking is also escalating in the urban area. In Addis Abeba, the police already know some hashish selling area and some of dealers as well abusers is apprehended repeatedly. Young people consume the plant for recreational purpose and in certain monasteries for religious as well as curative purpose (14). Nonetheless It should be emphasized that, selling and using Illicit substance are illegal in Ethiopia.

The present study reveals the prevalence of substance abuse to be 37.79%. Among the categories of street children, 19 out of 65 street-off children were substance abusers, whereas from the total 96 street-on children, 42 were substance abusers, the most widely

used types of substances among the street children in Mekelle. Almost equal number of 56 children said that they are addicted to smoking Cigarettes, chewing Chat and drinking beer respectively. Some of findings are different from other studies for example, in Kenya a total of 74% (n=108) of participants had any lifetime drug use, with 83% (n=81) of children of the street having ever used in comparison with 56% (n=27) of children on the street. The most commonly used substance among users was glue (23). Abhay M. Gaidhane et al Mumbai study showed that those who were 'only on-street' were at more risk of substance which is similar with our study. Study by Poonam R. Naik et al in Mumbai reveals the prevalence of substance abuse to be 44.23 %, which higher than that reported in the current study of Mekelle. The most common substances used by boys were smoking 36(59%), tobacco 30 (49.2%), Gutkha 29(47.54 %), Charas, Ganja 24 (39.34 %), and alcohol 23(37.7 %) (17). In Egypt, Cairo street children rapid situational assessment study, data received through the interviews indicated that almost 66% of the selected sample of street children consumes various substances or drugs on a habitual basis, the most type of substance consumed by Egypt Cairo street children were, cigarettes 70%, sniffing glue 60%, bango 40%, and tablets 30%(18). Similar study done in Tehran on street children by Hamid Reza Ahmad khaniha et al 36.7% of the children had lifetime smoking of cigarette. The frequency of smoking in boys was significantly higher than girls ($P < 0.05$). These observations support the findings of our study. Our study result was two times greater than study conducted in Mekelle, which was 18.7% street children were substance abusers(6). Tella, Arracy, Beer, and Cigarette smoking,

were common substances abused on daily bases. This was also parallel with a study conducted in Adama (5). Only 2 (1.2%) children sniff glue; unlike the study in Cairo, that the sniffing glue was the most common type (60%). This might be because of the culture difference and availability of the substance. This study is also different from a study in India that most common substance consumed was nicotine. Among the respondents, only 18 children sniffed benzene. This was similar to studies in India, Egypt; Adama that benzene sniffing was not common. Number of hashish smoker accounted 36 (20.9%), which is less than the findings of a study (10, 16, and 18). Khat was used by 55(32%) respondents, which is less than a study in Adama that was 42.1%. This might be chat is relatively more accessible in Adama. But which was zero reported in the other countries study for example in Egypt, Tehran, Mumbai, and Kenya. This may be because khat may not be cultivated in those countries.

From the total 65 substance abused children 49 of them were boys and the rest 16 were females. Among the substance abuser, 59 children were between 15-18 years age, and one child was at age of 8-10 rest 5 children are between age group of 11-14. However Poonam R. Naik *et al* Street children of Mumbai: Demographic profile and substance abuse the median age of substance abuse for males was 11.3 years old and 8.8 years old for females but proportion of male to female prevalence of substance abuser is similar with current study which is a total of 96(44.23 %) subjects admitted to substance abuse with overall males abusing more 61 (63.54 %) than females 35 (36.46 %) (17). The study done by Malhotra et al among street children of Delhi observed that the most common age for initiation of tobacco

was between 8 and 10 years with 60.9% of the children smoking and 64.5% consuming a smokeless form of tobacco before 10 years of age (3). In this study Out of 172 respondents, 23.8% were a female; which is less than the global report 2007 that was 30%. It may be because female are less visible due to social discrimination. The minimum age at starting substance use in study done by Deepti Pagare et al was as low as 5.5 years (10) which was different to findings reported in our study. These observations reveal early initiation of substance use among street children which makes them more vulnerable and high risk group.

The current study highlights factors associated with substance abuse. From the findings of this study, individual/peer pressure were the most frequently reported by 81(47.1%), which is similar to a study in Mumbai, peer pressure was reported as the main reasons of being street children and to initiate substance use. It is also similar to research result conducted in Mekelle, 50.6% were influenced by friends while the remaining 44.5 percent made a self-initiative. It is also similar with a study conducted in Egypt. The second most risk factor identified by children's were community risk factors (Community risk factors fit into domains of extreme economic deprivation, easily availability of drugs), which is unlike to the study in Mumbai, that the second most reason for substance abuse was inquisitiveness; this might be related with their culture. Another finding of research conducted in Addis Ababa similar to this study, showed that factors leading to substance abuse were easy availability, ignorance of the harmfulness of the substances when they were first used with the community, growing up among

substance abuser family, and lack of adult supervision in their living status. These risk factors do not represent the long list of risk factors associated with substance/drug abuse, but rather the risk factors stressed by street children themselves through the interviews.

It was also observed that street children were at significantly more risk of substance abuse as they are living on-street. The result showed that street off children are 3 time higher at risk (COR = 3.055, 95% CI = 0.329–28.345), than street children who sleep with their relatives at home. Those live with their family are 79% less likely than those live on the street. This is similar to an institutional based study at Bahirdar city. This result is also similar with Mumbai study, those live at the street were 3.8 times higher risk for substance abuse (COR 3.849, C.I.11.345–11.017 P value 0.012) than those sleep at home with their families.

Multivariate logistic regression was computed taking Substance abuse as dependent variable. 15-18 years age group were more likely for substance abuse than the age group of 8-10 years (p value <0.005), and the 11-15 years age group were 5.197 times more likely substance abuse than the age group of 8-10 years. This showed that as age increases, the proportion of substance abuser street children has been increased. This result is similar with Mumbai, that 15–17 age group (AOR 5.786 C.I (1.792–18.682) p = 0.003) were 5.78 times substance abuser as compared to 8-10 years age group. From the multivariate logistic regression, 60% children spent their time begging were less likely to be substance abuser (AOR 0.392) than daily laborer and among females, those who were prostitute were 5.94 times more likely substance abuse than daily laborer.

CONCLUSION

Living on the street for children is not an easy task; it is in fact a very challenging and they faced to different dooms. The surveyed children on the street in Mekelle demonstrated in the same situation. From the research findings, some conclusions had been addressed.

Street children have access to these illicit drugs through many people or dealers who exchange drugs with them in return for various forms of exploitation. None of the GOs or NGOs has a program that deals directly with substance abuse among street children. Street children are a high risk group to substances abuse because of three domains factors, peer pressure, community factor, family factor, and at this productive age group it has negative impact on psychological, socio economic aspect generally for community specifically for children. These risk factors do not represent the long list of risk factors associated with substance/drug abuse, but rather the risk factors stressed by street children themselves through the interviews. Children live on the street are more vulnerable group for substance abuse than those live at night with their relatives at home.

Data revealed that almost based on the WHO (14) substance abuse criteria, 65 (37.7%) were abusers of one or more, from those substance abusers, 49 of them were male, almost three times higher than female which were only 16. This indicates that substance abuse is a major problem among street children that should be dealt with. Significant number of street children are experienced with different substance but the most commonly available and cheap substance abused in Mekelle were Tella 98(57), Arrekey 86(50), Teji 69(40.1), Beer 56(32.6) Cigarettes 56(32.6), Chat 55(32%),

Hashish 36(20.9), Benzene 18(10%). Age of street children was the only independent variable that had reached significant, $p < 0.05$.

RECOMMENDATIONS

It should be noted that street children are at high risk group for substance abuse because of varies factor so that their habit could also exposed to the dangerous behaviors, sexually transmitted disease, HIV/AIDS, and unintended pregnancy. From the research findings, the following recommendations are important.

Energetic enforcement of the laws that prohibit the sale of substance to minors, and monitoring of facilities that sell and/or use along with severe penalties. Selection and training of police officers who work in areas related to substance abuse among street children is strongly recommended. Strengthen effective work and joint Surveillance by concerned body to prevent drug trafficking. Government plan of action which is rural-centered and agriculturally based should be strengthen to decrease over flow of children hoping a better life from rural area to Mekelle city. The three most etiology factors might be as a guideline for targeting substance abuse among street children might be viewed as part of their coping mechanisms to deal with substance abuse. This indicates that effective street intervention should consider peer-to-peer and peer-counseling as main options for targeting these vulnerable groupings. Dealing with substance abuse of street children needs the cooperation of various governmental, non-governmental, and voluntary efforts. Accordingly, if intervention is to be carried out, it has to cover all areas simultaneously Community-based intervention, Center-based

intervention, Street-based intervention.

Table 1: Distribution of Respondents' Demographic Characteristics, (N=172)

Characteristics	Category	Frequency	Percentage
Age	08-Oct	42	24.4
	Nov-14	29	16.9
	15-18	101	58.7
Sex	male	131	76.2
	Female	41	23.8
Marital	status unmarried	164	95.3
	Married	1	0.6
	Divorced	7	0.6
Age	status both alive	83	48.3
	Mother only alive	42	24.4
	Father only alive	24	14
	Neither alive	18	10.5
	Do not known or sure	5	2.9
Place	of birth Mekelle	70	40.9
	Outside Mekelle	102	59.1
Daily income	<5 birr	28	16.27
	5-10 birr	55	31.97
	10.01-15 birr	44	25.59
	>15 birr	44	25.59
	No Income	1	0.58

Table 2: Prevalence of Substance abuse among Street Children in Mekelle 2013, (N=172)

Type of Substance	Distribution of Respondents who said Yes		Distribution of Respondents who said No	
	Frequency	Percentage	Frequency	Percentage
Smoke cocaine	-	-	172	100
Inject pethidine	-	-	172	100
Drink cough syrup	-	-	172	100
Take pain pill	-	-	172	100
Take diazepam	-	-	172	100
Takephenobarbten	-	-	172	100
Sniff glue	2	1.2	170	98.8
Smoke marijuana	4	2.3	168	97.7
Paint sniff	5	2.9	167	97.1
Sniff benzene	18	10.5	154	89.5

Smoke hashish	36	20.9	136	79.1
Smoke Shisha	10	5.8	162	94.2
Chew chat	55	32	117	68
Cigarette	56	32.6	116	67.4
Drink beer	56	32.6	116	67.4
Drink Tej	69	40.1	103	59.9
Drink arracy	87	50.6	85	49.4
Drink tella	96	55.8	76	44.2

Table 3: Distribution of pattern of substance abused aggregated by gender and sex, Mekelle 2013, (N=172)

Classification of Substance abused	Sex of the respondent				
	Male %	Female %	Total %		
Abused	49	75.316	24.7	65	37.79
None Abused	82	76.625	23.3	107	62.21
Total	131	76.1	41	23.9	172

Table 4: Distribution of Criteria used to measure substance abuse, Mekelle 2013, (N=172).

Measuring used to measure Yes Substance abused	Distribution of respondent who said	
	Frequency	Percentage
Ever felt ought to cut down substance use	3	2.7
Ever felt annoyed by criticizing substance use	2	1.8
Felt bad or guilty about substance use	0	0
Used substance first thing in the morning to get rid of hangover	1	0.9
None	39	35.7
Answered two and above	65	59.6

Table5: Distribution of risk factors for substance use by respondents, Mekelle 2013, (N=110 users)

Type of Factors	Frequency	Percentage	Cumulative Response			
			Yes	%	No	%
Community Factors						
Accessibility of drug	24	38	63	57.3	47	42.7
Laws and norms favorable	1	1.58				
Poverty	22	34.9				
Transition & mobility	6	9.5				
Answer two & above	10	15.9				
Family Factors						
Because Family used	15	27.2				

Lack of supervision	3	5.45	55	50	55	50
Family conflict	14	25.46				
Favorable parental attitude	6	10.9				
Answer two & above	17	30.9				
Individual & Peer Factor			83	75.5	27	24.5
Isolation	11	13.25				
Peer pressure	26	31.31				
Favorable attitude to substance	6	7.2				
Early initiation of problem	8	9.6				
Answer two & above	32	38.55				
School Factors			10	9	100	91
Low education result	5	50				
Poor participation	2	20				
Low follow up school	1	10				
Answer two & above	2	20				

Table 6: Factors associated to substance abuse, Mekelle 2013, (N=172)

Independent Variable	CORAOR	C.I	95%
Age			
8-10	0.02	1*	
11-14	0.02	5.197	0.403-66.965
15-18	1*43.248	3.956-472.743	
Sex			
Male	1*	1*	
Female	0.09	1.506	0.368-6.158
Activity on street			
Daily	labor	1*	
Begging	0.28	0.391	0.0233-6.571
Prostitution	0.06	5.949	0.594-59.562
Petty	trade	(empty)	
Shoe Shining	0	3.1	0.0912-105.390
Daily labor & begging	(empty)		
Other	(empty)		
None	11.786	3.937	1.245-12.450
Family history of substance abuse			
Father	1*	1*	
Mather	8.214	0.34	0.0394-2.934
Stepfather	2.619	4.316	0.3198-58.243
Stepmother	13.754	1.63	0.1466-18.135

Two or more Family members	2.61	2.361	0.499-11.177
Other family members	15.714	1.861	0.446-7.769
None	11.786	0.2	0.0627-0.637

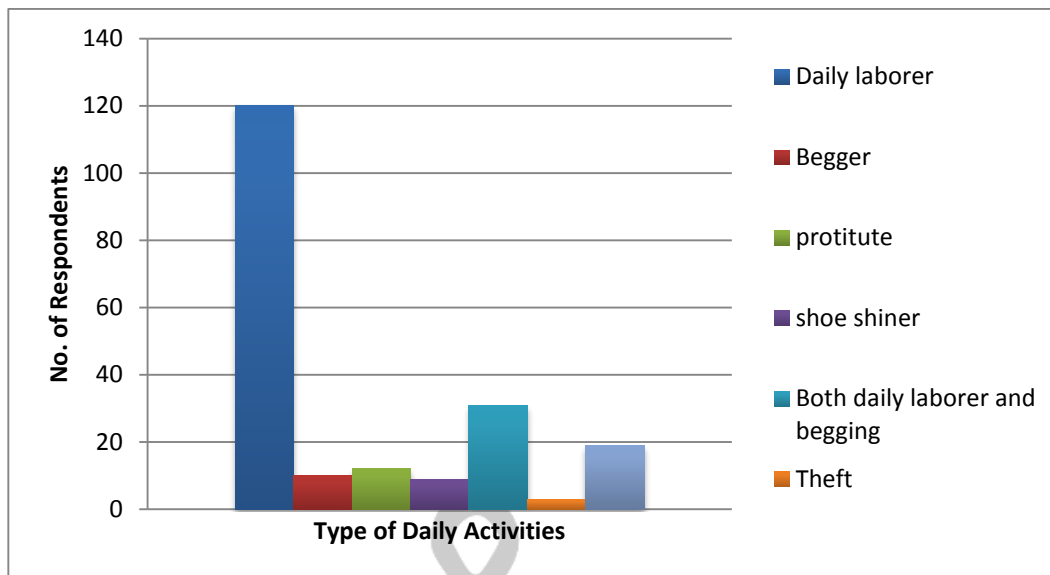


Fig 1: Distribution of respondents' by Activities they are engaged in on street, (N=172)



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