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At Least, Three of Every Six Boys Involved in the Almajiri System of Northern Nigeria Die in the Child Begging Culture: The Urgent Need to Abolish the Almajiri System

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Abstract

Background: Children involved in the almajiri system of training are boys, exposed to harsh conditions and subjected to begging to fend for themselves, leaving them susceptible to violence, hunger, starvation, infections, child predators and to be used as elements of violence. This decreases their chances of surviving before they reach 16. Therefore, this study aims to determine the mortality ratio of Almajiri boys whilst identifying other maternal conditions associated with the boys' mothers.

Methodology: A cross-sectional study was carried out on hausa/Fulani mothers of boys that was selected through a combined multistage sampling technique which involved a door-to-door primary collection of data using a questionnaire. Data about their boys who have been sent into the almajiri system were collected.

Result: The second phase of this study, which included 416 respondents was more compatible with the research objectives. These respondents with high prevalence of child marriage and multiple miscarriages had a child: mother ratio of 12:1 of which 98% of their sons are into the almajiri system. 50% of their sons die in the system, 33% are lost and only 17% are confirmed alive. Also, the children and Youth mortality rate associated with this system was about six times worse than the global average and four times worse than the Sub-Saharan average.

Conclusion: For every 6 boys sent away into the Almajiri system of seeking knowledge in Northern Nigeria, 3 die, 2 are lost and only 1 survives. Hence, the urgent need for rigorous family planning health promotion and the improvement of the socio-economic conditions of the Hausa and Fulani rural women in Northern Nigeria.

Keywords: Almajiri System of Northern Nigeria, Child Begging, Child Health, Child Mortality, Educational Status of Mother, High Fertility Rate in Sub-Saharan Africa

Introduction

Nearly a fifth of children, more than 385 million, in developing countries are living in extreme poverty, and most of these children are in sub-Saharan Africa. Children are not only more likely to be living in extreme poverty; the effects of poverty are most damaging to them [1-2]. The younger the child, the worse the plight because the deprivations they suffer affect the development of their bodies and minds [3]. Unfortunately, most of those deprived children are domiciled in Nigeria. Some 110 million Nigerians out of an estimated population of about 200 million live below the poverty line and majority are children [3]. More than 10 million Children are out of school; many of them die from preventable diseases like malaria and dysentery; most have no access to pipe borne water and basic sanitation just as many are stunted and underweight because of poor nutrition [3]. But too much focus has been placed on factors such as the worsening economic situation of the country where many parents

are out of jobs while those who are working are also finding it increasingly difficult to meet the needs of their children [3]. This focus on other factors enable the neglect of more important ones, as for instance, social disharmony in many Nigerian homes has become a veritable threat to the survival of the family institution, which has led to child marriage, child trafficking and labour and rape of underage boys and girls which are on the increase in many parts of the country [3]. Though linked with the factors above, one major problem which is distinct, independent and should be treated as a matter of urgency is the Almajiri system in Northern Nigeria [4].

Problem Statement

The term "Almajiri" is a Hausa word for a pupil or student and emanates from the Arabic word "Almuhajir" which means a seeker of Islamic knowledge. Its origin can be traced from the migration of Prophet Mohammed from Mecca to Medina. Those who migrated with the prophet to Medina were called "Al-Muhajirrun," meaning migrants. In Nigeria, the word "Almajiri" means those who left their villages or towns, parents, relatives and friends in search of Islamic religious knowledge and scholarship [5-6]. As earlier stated, an Almajiri, usually is expected to be educationally oriented in the tenets of Islam in his early childhood to groom him for a decent Muslim adulthood. But the common norm in Northern Nigeria today has deviated from this practice, giving way to a mob of bowl-carrying children wandering the streets in search of one thing or the other [4, 7-9]. Begging is the most discomforting aspect of the Almajiri system as it brings the pupils out of the supervision of the "mallams" (teachers) and gives them away to negative habits as they come in contact with prostitutes, cultists and terrorists among others [6, 9].

The present day Almajiri, who are victims of neglect and exploitation are seen everywhere around the northern part of Nigeria, singing and begging for food and money, being vulnerable to abuse, drugs, trafficking and various forms of exploitation. Their conditions of living are below average as shown in their torn, dirty-looking cloth, hungry stomach and unkempt body. These Almajiri are mostly found far away from their places of abode in search of Islamic knowledge, which means they do not reside with their biological parents, who for religious permissiveness, marry many wives as possible and produce scores of children without any sense of responsibility. These children are dumped in Almajiri schools because Islamic education is free [9-10].

The fact that this problem presents a breeding ground for terrorism and extremism has been over flogged. The violent Northern Nigerian sect, Boko Haram draws some of its recruits from the Almajiri and diverse scholars have noted that the Almajiri system of Northern Nigeria made the vicious membership of Boko Haram simple [11-12]. Linking the Almajiri to Boko Haram should worry every well-meaning Nigerian because this terror group has been rated the latest and deadliest of its kind and the violent activities of the sect has greatly affected the economy of Northern Nigeria [5, 13-14]. But little has been done about the welfare of these boys themselves, especially as evidence shows that most of them die even before 16 years of age [15-16]. Therefore, the essence of this study is to demonstrate, via a ratio, the death-epidemic associated with this system.

Research Questions

Research Questions: (1) What is the mortality rate of the boys involved in the Almajiri system in Northern Nigeria? (2) Does the mortality rate of the boys involved in the Almajiri system of Northern Nigeria differ from the average global or regional rate? And (3) What other factors may most likely contribute to encourage their mothers to get their sons involved in the Almajiri system?

Research Justification

This study is only focused on finding the statistics of these almajiri boys who do not survive the almajiri system. Hopefully, the primary data collected can be used for further studies, especially solution-based ones to curb or eradicate this deadly system in Nigeria. Also, this study is to make clear with, as much as possible, objective facts to neutralize some notions carried about by northern Nigerian politicians for selfish political gains [17]. Most politicians come out to claim a boom in population rise in the North, citing the rampant birth of these children who are prospective almajiri intakes, but unknown to them, a significant percentage of these boys, born in numbers do not even make it to Adulthood [18]. Also, evidence has shown that the wellbeing and socio-economic status of a mother greatly influences her child's survival [19-20]. It is for this reason that the socio-economic status of their mothers will be indicators to explore in this study. Finally, this study will spur international groups and stakeholders to come into the picture and become actively involved as Nigeria as a whole, both its citizens and government, seem to be short sighted to the dangers posed by this threat, not only to the children affected, but also to those directly in continuous contact with these children, which is the Northerners in Nigeria.

Methodology

It is important to know the almajiri spread in Nigeria to know the reason for selecting the target population for this study. Table 1 highlights this spread, justifying why Kano and Kaduna states were chosen.

Table 1: Population Spread of the Almajiri boys in Northern Nigeria

Northern State	Population	Percentage (%)
Kano	4,150,585	42.0
Kaduna	3,063,527	31.0
Katsina	691,764	7.0
Jigawa	494,117	5.0
Borno	474,353	4.8
Bauchi	316,235	3.2
Sokoto	296,470	3.0
Others	395,294	4.0
TOTAL	**9,882,345**	**100**

Research Design

The research design seeks to answer the research questions, using a methodology which is the qualitative analysis of data collection to achieve outcomes. Table 2 below summarizes the research design into the research question, research objectives, methods and research questions components.

Table 2: Research Design

Research Question	Research Objective	Methodology	Outcome
What is the mortality rate of the boys involved in the Almajiri System in Northern Nigeria?	to determine the mortality rate of the boys put into the Almajiri system of Nigeria	Cross-sectional Analysis carried out as a field work on target population.	Children and youth Mortality rate calculated from the number of boys confirmed dead and the total number of children born by respondents.
Does the mortality rate of the boys involved in the Almajiri system of Northern Nigeria differ from the rate elsewhere?	First Objective as compared to the children and youth mortality rate globally		Comparing Outcome 1 to the average Children and Youth Mortality rate both globally and in Sub-Saharan Africa, as there is no value for Nigeria yet.
What other factors may most likely contribute to encouraging the mothers to get their sons involved in the Almajiri system?	To compare all calculated and observed indicators between respondents of the city and the rural settlements.		Educational status, poverty, high birth rate, considered to be strong determinants of the almajiri system in Northern Nigeria as indicated by the results

Kano metropolis and Zaria city in Kaduna state respectively contain the highest numbers of Almajiris [21] in Nigeria as illustrated in Table 1 above, hence the choice of these sites as the study towns.

A cross-sectional study was carried out in a combined two separate multistage sampling technique of selecting the population. The study selection of population was in two phases.

Phase 1: Middle-income earners were interviewed in the heart of Kano municipal. The interview was strictly on the working-class women, which was centered on knowing if any of their children/wards were participating in the almajiri scheme. The interview was not limited to that, as they were asked the number of children they had and their take on family planning. The working-class group was targeted because they are still liable to send their children/wards to undergo the almajiri system of training. Poverty is a huge factor in the almajiri system, which means that the rich will not take part in it [23-25]. This is why the affluent women were excluded in this study. This phase was carried out in Kano Municipal covering Fagge, Dala, Gwale, Tarauni, Nassarawa, Kumbotso and Ungogo local governments and Zaria province of Kaduna state, particularly GRA, Sabon gari, Samaru and Kongo. Our target population was mothers who had attained at least level 7 in the civil service, company workers, entrepreneurs such as the owners of businesses, but not workers in the private businesses, large traders and officers in well-known organizations. The essence of going for this group of women who were mostly educated and had less children or boys was to compare them to the poorer women of rural settlements who had little or no education and who gave birth to more children. Female workers of private businesses were excluded because, often, poor women are recruited for menial and low-paying jobs in private businesses. The aim is to find a relationship between the high birth rate and the educational status of the mothers of these boys in relation to their tendency to send these boys into this system of child begging.

Phase 2: This is the rigorous door-to-door exercise of careful one-to-one interview with women between the ages of 18 to 64 in the rural areas. Villages in 6 local governments of the northern part of Kano; 5 local governments of the southern part of Kano and 6 provinces/local areas in Zaria city of Kaduna State were targeted. The essence was to target actual villages with a far proximity from the city.

Location and Population size: the almajiri system is common in Northern Nigeria, especially the states up North, as the ones closer to the middle-belt region of Nigeria have a significant number of non-Hausa/Fulani indigenes. Also, there is a significant number of Christians in the centrally placed Northern states [26-28]. Furthermore, Kano and Kaduna states were chosen for this study as, from Table 1, we can see that a combined 73% of boys in the entire north of Nigeria who engage in the Almajiri system come from Kano and Kaduna states. Therefore, 12 local government areas were selected for this research. These areas are densely populated with rural women of the Hausa/Fulani tribes who have children.

The formula for a sample size that best fits an unknown population, as in the case of this study is the Cochrane formula [29]. Therefore, the sample size for this research was determined using Cochran's formula, which is:

$$N = (z^2pq)/d^2$$

z = Standard normal deviation set at 1.96 normal interval
p = prevalence of the level of knowledge on the availability of mental health services
q = proportions that does not have the characteristics being investigated (q = 1-p)
d = Level of significance set at 0.05 (precision set at 5%)
n = 384 respondents; 10% of the calculated sample size will be added to accommodate for non-response by participants making a total of 422 respondents. Therefore, 422 respondents were targeted for each of the two phases of this research to amount to a sample size of 844 respondents.

Sampling technique: A multistage sampling technique was used to select the women who were willing to participate in this study. And Table 3 below summarizes these stages.

Table 3: The different stages of the Multistage Sampling Technique

Stage	Activity
1	For each of the four LGAs, one ward was selected from the various wards in the local government area using random sampling by balloting.
2	Random sampling using computer-generated random numbers was used to select a community from the selected wards, where study participants would be recruited.
3	Systematic random sampling was used to select the households where the study respondent will be recruited.
4	The mothers in each selected household were recruited for the study.

Study Instruments

A questionnaire was used for this study (see Appendix 1). The questionnaire was a semi-structured interviewer-

administered questionnaire designed after a thorough literature search. The variables were aligned so that they corresponded to the research objectives, providing answers to the research questions. The variables contained pertinent items that were strategically organized for easy and accurate computation. Mothers were interviewed; but only the ones who kept contact with the teachers, or Malams, of the boys to remain informed about their wellbeing, as demonstrated by the Questionnaire sample in Appendix 1, were included in this study. We got data on the number of boys they have had so far, the ones they sent for the almajiri training, the ones they are sure are still alive, the ones they are sure are already dead and as well as the ones they do not know their living status, despite keeping contact with their teachers.

It is paramount to note that: (1) the sons of Mothers who were contacted in the last 3 months were considered "Alive" whilst the sons of Mothers who were either contacted later than 3 months or never contacted, despite attempts made via their teachers were considered "lost." And (2) All deaths of boys confirmed were deaths which happened in 2019. Therefore, all data gotten from this questionnaire relevant to the child's mortality or survival was for the year 2019, to give a mortality rate or ratio for the year 2019.

Inclusion And Exclusion Criteria for choosing the desired mothers

The main Inclusion criterion was Muslim women of the Hausa/Fulani tribes. This is because they are the ones who believe in the almajiri system and practice it. Another criterion is: the mother must have at least one boy who is enrolled into the system. And lastly, mothers of boys in the almajiri system irrespective of the location of these boys where they beg as defined by the distance. Therefore, mothers of boys who are near or far from their boys in the system are included.

Exclusion criteria included, (1) mothers who did not care to know the status of their children, mostly due to having them out of wedlock, which is considered a taboo in Northern Nigeria. Other reasons could be rape or the forceful collection of their boys by wealthy men known as "Alhajis." Another reason they may not care is having sons who willingly absconded from home and never returned. This category of women was excluded from this study because the almajiri system is just one, among many eventualities their boys may end up with [30-32]. But this study's focus is just on the almajiri boys. (2) Boys already 18 years of age in the Almajiri system known to be alive are not counted. (3) Rich women or women married to rich men. (4) Women or their husbands who did not give their consent. And (5) mentally ill women who do not have the capacity to satisfactorily answer the questions asked.

Data Management & Analysis

Data obtained was sorted, cleaned for errors, coded, and entered. Data collected was analyzed using Statistical Package for Social Sciences (SPSS) version 22 software after being serially numbered for easy identification, control, analysis and recall purposes in case of any problem. Descriptive statistics such as percentage and mean were used to summarize variables such as demographics [33].

Personnel and Materials

Survey Assistants: These were members of the main field research team that went out and got data from the mothers via the questionnaire. Auxiliary female nurses that were indigenous to Kano and Kaduna states who also speak the Hausa and/or Fulfulde languages fluently were recruited and trained for 3 weeks, prior to this study, to adapt to a good manner of approach as well as acquire the needed level of professionalism to do the work. 4 teams consisting of 3 survey assistants, making a total of 12, were recruited.

Survey supervisors: These were the leaders of each survey team. Any indigenous female from Kano or Kaduna state with a degree and fluent in the Hausa language was qualified for this role. One survey supervisor was needed for each team, making a total of 4 supervisors.

Project Associates: These were graduates of Data Analysis and statistics who were recruited to process and analyze the data gathered every day. Once each team returned to the head office from the first day's field work, the project associates began their work from there onwards until the project was completed. 2 project associates were recruited for this role.

Project Managers: These were supervising officers of the survey to ensure that the project was carried out properly, professionally and accurately. They were graduates of human resource management, sociology or any management degree programme. They moved freely from project site to project site to monitor the survey activities. 2 Project managers were recruited for this role.

Financial Managers. A team of 2 financial managers were recruited to be in charge of the day-to-day expenditures, payments and treasury records, whilst updating the financial statements on a daily basis.

Administrative Assistants: These officers ensured proper logistics and the smooth running of operations, from the provision and supply of basic day-to-day consumables and needs to the connection between the various members of the personnel. They included: the 4 secretaries, 4 drivers, 2 logistics or maintenance officers, 2 accounting assistants, 3 office cleaners and 20 security personnel as negotiated with the Nigerian Police force.

Project Coordinator: The corresponding Author of this study was the project coordinator, supervising everyone.

Validity Experts: Sociologists, childcare experts, department of child development from the Ministry of health, officers from the Ministry of Women Affairs and consultants in Data Analysis.

Materials needed: 12 iPads for the 12 survey assistants, 2 Laptops for the project Associates, 6 Sport Utility Vehicles (SUV)- 4 for the survey teams, 2 for administrative purposes, a high speed internet facility, a 3-star, 30-bed hotel that was rented for the 6 months of administrative, official and operational purposes of the project and stationaries such as papers, pens, files, clips, stapler, scanning machine, printing machine and promotional charts.

Ethical Approval & Consent Process

An ethical clearance was acquired from the Health Planning Research and Statistics Department (HPRSD) from the Kaduna State Ministry of Health with clearance number MOH/ADM/111/VOL.1/058 which was valid for a period from June 04, 2019, to April 05, 2021. Also, ethical approval was acquired from the Health Research Ethics Committee of the Kano State Ministry of Health with Clearance number MOH/Off/397/T.1/2019 for the duration of June 30, 2019, to June 29, 2021. Verbal consent was achieved from the local government chairmen, Imams,

district heads, traditional councilors, village heads, the husbands of the women being interviewed and the women themselves from all rural communities visited. We only needed verbal consent from the women in the cities.

Measures taken to ensure of ethical practices whilst undergoing this research were as follows, (1) gaining ethical approval from the corresponding ethical committees/departments of the ministries of health of the two target states; (2) the use of the Hausa language and Fulfulde to Communicate with respondents whilst getting the data from them via the Questionnaire process. The Questionnaire was also translated to the two languages; (3) adequate training of the survey assistants for a compulsory display of professionalism, empathy and receptive socialization in order to make the respondents as comfortable as possible for the project to be successful; (4) the Survey assistants were all females, to satisfy the religious and cultural sentiments of the respondents to overcome recall bias as much as possible for our data to be as accurate as possible; (5) confidentiality and consent form which gave details of the nature, type, methodology and assurances of confidentiality was made available to all the stakeholders responsible; (6) the right to verbal consent as a means of approval for carrying out the study was implemented, since a significant portion of the respondents may not be able to read or write; and (7) to effectively implement our confidentiality, the use of pseudonyms was adopted to protect the identities of respondents.

Survey Design and Distribution

An online survey design model was used. The hosting platform was SurveyMonkey. The data collection instrument was made available through this online platform. It was then made available on the iPads that were used by the 12 survey Assistants as they relayed the questionnaire to the Respondents. As soon as the Questionnaire was completed for one respondent, it was submitted and immediately transmitted to a closed-central database that was accessible only to the Project associates, who then processed and analyzed the data created. As soon as the data was analyzed and new information derived, results and recommendations were accessible online. Furthermore, seminars, symposiums and local outreaches were carried out in cultural town hall meetings, firstly with religious leaders, and then with tribal chiefs and then with the women themselves to disseminate information properly. Official presentations and workshops were also delivered at state level of stakeholders' meetings so that recommendations that will need governmental interventions were properly passed across. In the future, it will be relayed through poster and master class presentations in international conferences in relation to child health, public health and African developments so that the international community may also be aware of the new findings, if any. Finally, a copy will be sent to the World Health Organization to be published.

Results

As shown in Table 4 below, 422 mothers were contacted in the cities and 409 (96.9%) were finally included as respondents for this study. Also, 422 mothers were contacted in the targeted villages and 416 (98.6%) consented to be participants of this study. Therefore, a total of 825 respondents (97.7%) were included in this study.

Phase 1

Table 4: Extrapolation of Results for Phase 1

Characteristics	Results
Marital status	▪ Married: 135 ▪ divorced: 235 ▪ separated: 36
Frequency of Marriage	▪ Once: 291 ▪ Twice: 84 ▪ Thrice: 28 ▪ More than thrice: 3
Almajiri system	404 women confirmed that their boys were not in the Almajiri system of training and will never be. (98.8%)
Factors behind enrolling the child into the system	The other 5 women who had their boys enrolled into the Almajiri system, confirmed that not all their sons are in the system. 2 cited economic reasons for doing so and the other 3 enrolled their sons who were said to be too stubborn to be controlled at home.
Conventional schools	All 404 women confirmed that their children are in conventional schools from crèche to university level.
Family planning	316 women do not believe that family planning is wrong, be it morally or in accordance with their faith. They believe in having children they can cater for, and hence, practice it (77.3%).
Children: Mother ratio	The women had a total number of 1,677 children which was an average of 4.1 children per woman.
Number of births in 2019	26 respondents gave birth to 35 babies which included three twin births and one birth to triplets.
Number of deaths in 2019	1 infant death recorded among the respondents and 4 child deaths.

The highest number of children born by a respondent in Phase 1 is 6. Table 5 below illustrates the children spread of the respondents in phase 1, while Table 6 shows the spread of these children according to the various age groups of the 409 respondents.

Table 5: Number of Children by Respondents in the urban areas

Number of children (x)	Number of respondents who have these children (y)	Total number of children z = (xy)
One	17	17
Two	80	160
Three	63	189
Four	54	216
Five	85	425
Six	110	660
Total	**409**	**1,667**

Table 6: Number of Children by Respondents according to Age groups

No. of children	Various age groups of Respondents				
	21-30	31-40	41-50	≥50	Total
One	8	6	2	1	17
Two	4	57	19	0	80
Three	9	36	17	1	63
Four	15	22	17	0	54
Five	5	29	49	2	85
Six	3	33	64	10	110
Total	44	183	168	14	**409**

351 (86%) respondents living in the urban region of the target location of this study were ages 31 to 50 and the maximum number of children given birth to by a respondent was 6. 64 respondents of ages 41 to 50 gave birth to six children and 49 of the same age group of respondents gave birth to five children whilst 36 of ages 31 to 40 and 15 of ages 21 to 30 gave birth to three and four children respectively. No respondent was below the age of 20. And since only about 1% of the respondents in this phase sent their sons into the almajiri system of child begging, the results from this phase will not be used to determine the death rate of the boys in relation to those alive in the almajiri system; though, comparisons between the socio-economic conditions of mothers in both phases will be vital in developing the conclusions of this study.

Results of the second phase of this study

416 women were included in the phase 2 of this study, ranging from 18 to 64 years. Mothers who had at least 3 children to the ones with over 13 children participated as respondents in this study. A maximum number of 16 children were born by a respondent in this study.

Table 7: Extrapolation of Results for Phase 2

Items	Result
Total number of mothers	422
Included mothers or respondents (n)	416
Marital status of respondents: ▪ married ▪ divorced	 277 139
Frequency of marriage: ▪ once ▪ twice ▪ thrice ▪ more than thrice	 136 181 93 6
Age of mother when first child was born ▪ ≤13 ▪ 14 ▪ 15 ▪ 16 ▪ 17	 311 75 23 5 5
Total number of Children from respondents (a)	5,034
Total number of births in 2019 from respondents (b)	297
Birth control ▪ Number that knows family planning ▪ Number that practice family planning	 39 3
Infant deaths from respondents in 2019	11
Child deaths from respondents in 2019	9
Total number of boys from respondents (r)	1,290
Total number of boys sent into the almajiri system (s)	1,260
% of boys sent into the almajiri system = (s/r).100	97.7%
Boys confirmed dead on Almajiri system (c)	626
Lost boys in the Almajiri system, (m) + (n) = (p) ▪ those contacted ≥ 3 months (m) ▪ those never reached despite attempts of contacts (n)	423 179 244
Boys still alive (u)	211
Ratio of boys dead: missing: alive = c:p:u	3.0:2.0:1.0

The results as illustrated in Table 7 show a total number of 416 mothers who participated in phase 2 of this study as respondents. From our respondents, 5,034 children were born which is,12 children per mother and about 98% of all boys born by respondents were sent into the almajiri system, in contrast to the almost 1% of boys sent into the same system from respondents residing in the city with better socio-economic status. Out of these boys who were in the system, only 17% were confirmed alive, whilst 33.6% and 49.6% were likely to be missing and were confirmed dead respectively. Despite the similarity in sample sizes of both populations, the rural respondents had three times more child: mother ratio, about 8.5 times more births in the same year, 11 times more infant deaths and twice the number of child deaths as compared to the respondents in the urban settlement. Whilst none of the respondents in the rural area had acquired a secondary and higher level of education, 88% had no education at all. In contrast, none of the respondents in the urban area was without basic education as 74% had acquired a secondary and higher level of education, among whom 27% had tertiary education. It was also observed from the results of the questionnaire that by the time a young woman was 20 in the rural areas of this region, she should have had at least 3 children. When she was 30, she should have had at least 7 children. At 40, she should have had at least 11 children which may increase to at least 13 children by the time she is 50. Also, whilst none of the respondents in phase 1 had their first child before the age of 20, all the respondents in phase 2 gave birth to their first child before the age of 18, out of whom 98% had given birth to their first child by the time they were 15 years of age and 75% when they were only 13 years of age. The multiple marriages and different marital statuses among our respondent population in Phase 2 strongly suggest high divorce rates and sexual activity with multiple men in their life history. Table 8 and Figure 1 summarize this finding.

Table 8: The Distribution of Mothers in this study

Age (in years)	Distribution (mothers)	
	Phase 1	***Phase 2***
≤20	0	189
21-30	44	81
31-40	183	77
41-50	168	55
≥50	14	14
Total	**409**	**416**

Since some of the Almajiri boys could be as old as 17 years in this study, the best mortality-indicator to use would be the Child and Youth Mortality. This is the probability of children and youth dying in a particular region in a specific year per 1,000 population aged 5 to 24 years [34]. Taking our values from Table 7, the Child and Youth Mortality would be (number of boys confirmed dead/total number of children born by respondents) X 1,000. This is (s/r).1,000 = 124 deaths per 1,000 population, assuming that all the 5,034 children born by the respondents as of the time of this study were between the ages of 5 and 24.

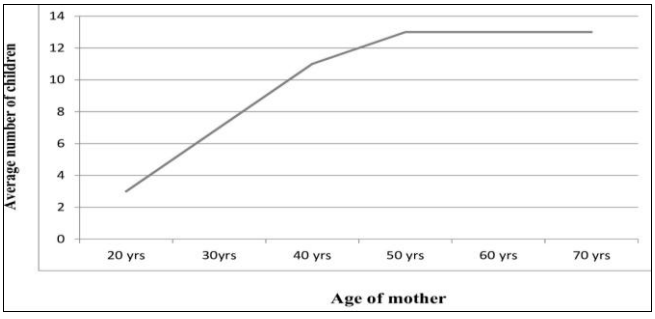


Fig 1: Estimated Number of children of Phase 2 Respondents at different ages

By age 50, all 14 respondents as shown in Table 6 have already had at least 13 children. Also, the recorded miscarriages had a trend as illustrated in Table 9 below. 40% of respondents in phase 1 never had a miscarriage, 29% had one miscarriage and 31% had multiple miscarriages as none had more than four miscarriages in their life. But in phase 2, only 4% did not have a miscarriage in their history as 81% have had multiple miscarriages from whom 26% have had more than four miscarriages in their life, which is about one in four respondents. Table 10 shows their highest level of education which could also be heavily linked to their tendency to give their sons away to the almajiri system.

Table 9: Frequency of Miscarriages Among the Respondents

Number of Miscarriages	Phase 1	Phase 2
0	163	17
1	119	61
2	66	70
3	58	78
4	3	81
>4	0	109
Total	**409**	**416**

Table 10: Highest Level of Education of Respondents

Highest level of Education	Phase 1	Phase 2
No education	0	367
Primary level of education	105	49
Secondary level of education	193	0
Tertiary level of education	111	0
Total	**409**	**416**

Discussion

From the results of this study, it can be deduced that for every 6 boys sent into the almajiri system, 3 die, 2 are lost and only 1 is known to survive. For those lost, some of them may also not survive, hence 50% being the minimum value here. This is a serious issue which should be of great concern to Nigeria, not just the north as at least half of the boys born into the almajiri system die. 1,260 boys from 1,290 in total, who were born by the respondents were sent into the almajiri system in a staggering rate of 97.7%, and this strongly suggests the strong cultural and personal attachments that the Hausa and Fulani rural women of the North have to the system. Also, many of the boys in the Almajiri system are born to poor rural mothers who engage in high childbirth rates and have little or no basic education. Fewer mothers in the city marry multiple times, as almost thrice the same number in the rural areas marry multiple times. The divorce rates and multiple marriages may also have contributed to the high number of children, despite the active practice of polygamy [35-36]. Also, whilst 77% of women in the urban areas practice family planning, less than 1% in the rural areas do same as only about 9% even know what it is. Statistics from the federal ministry of education put the number of almajiris in Northern Nigeria to 10 million as of 2020 [37]. Following the result of this study, we can say that for this 10 million to roam the streets as of 2020, almost that number died and may die, combined. This is outrageous and should be taken with all seriousness. These results are in contrast to the respondents living in the city as the mothers in the city who have good education, are socio-economically better and with less children, hardly send their children for the almajiri training.

Challenges faced

Illiteracy and lack of awareness: northern Nigeria is ravaged with gross illiteracy and poor awareness [25]. This was a major challenge for this project. The way we tackled it was by using the most popular and effective means of mass media sensitization to the public in the North, which is the radio [38]. Once the ethical approval was settled, Radio sensitizations in Hausa and Fulfulde languages commenced immediately, and continued until data collection was completed.

Insecurity: since 2009, most of Northern Nigeria suffered and still suffer from insecurity [39-41] and this can put the personnel involve in danger. In order to negate this challenge, a rigorous consultative process and negotiation took place with the police so that for each day of the project, 20 heavily armed masked policemen were assigned to us in this manner: 3 policemen for each of the 4 survey teams, one each assigned to the project managers, and one assigned to the project coordinator. 4 Policemen were stationed at the administrative block, which was a rented 3-star hotel.

Religion: this is a highly sensitive issue in Northern Nigeria [42-43] and the Almajiri system of child begging is a component of the religious characteristic of the region. In this respect, the tendency to face stiff resistance from the political, traditional and religious leaders of the region was high. Therefore, even before the project commenced, several stakeholders' consultations were carried out at different levels, from state level to local government levels involving the traditional, political and religious leaders to convince them on the need to do this project.

Corruption and mismanagement of resources: A systematic approach of project coordination was adopted and the best approach for this project was the "Event Chain Methodology" of project management [44]. Financial management was strictly cashless and all through the financial flow, there was no cash withdrawal, only wire-to-wire transfer. There was also no third-party system or middle-man-agents involved in any service delivery. The Project coordinator related with service providers directly and made cashless payments when necessary. Financial statements and analysis were updated daily to keep up with the project expenditure whilst monitoring for loopholes. A team of 2 financial managers with a degree in either financial management or accounting and a minimum of 3 years of experience in this field oversaw this responsibility, closely monitored by the Project coordinator.

Assumptions, Limitations and Delimitations

Assumptions. The study assumes that the respondents will be truthful in their responses. The responses will be sought from mothers who have at least one son of age 3 years and above and who reside both in the city and in the villages. The study assumes that all cohorts will represent the views of these respondents in the selected municipal of Kano and Zaria cities and selected villages surrounding them to ensure equity. The study also assumes that all boys sent into the almajiri system should have been five years and older.

Limitations: (1) Sample size: the sample size calculated is still about 0.01% of the entire target population. Recommendation on future surveys such as a multiple-stage cluster sampling for instance, should be carried out via highly sophisticated Government-sponsored large-scale surveys for larger and better data collection, interpretation

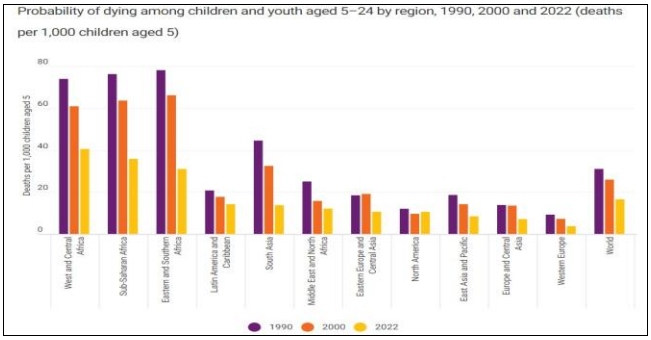
and processing so that policy making can be directed more accurately. This should cover more women and provide more detail in relation to indicators. Another option is to focus on the "Qur'anic teachers" or otherwise called "Malams" as the target population to be more accurate in getting information on which boys are alive, dead or lost. (2) The age of 17 was used as the benchmark for the boys and though a lot of the women in the villages (>95%) attested to the death of their sons earlier than that age, they were still not certain. We, therefore, could not categorize the type of mortality for some of the boys, be it Teen mortality or child mortality which encompasses neonatal, infant and under-5 mortality. It is for this reason the children and youth mortality was adopted. (3) The methodology was too physical and mentally draining. This then required thorough supervision of the two teams involved in the field work as on several occasions, the door-to-door exercise was canceled and repeated across some villages due to the lackluster attitude of the team members as the repetitive nature of the exercise and the physical exertion it caused gradually killed the motivation it initially attracted. (4) Statistical inference will remain "probabilistic". For instance, that more women with more than 4 children have sent their boys out for child begging does not necessarily mean the inference between having more children and the tendency to give out these boys is established in the whole target population. (5) Recall Bias: the current life status of the boys given out for begging, as answered by the mothers may be false. For instance, some mothers may not want to admit that their son(s) who was/were given out for begging is/are dead, to defend the almajiri system and validate their sense of parenthood. Also, categorizing the mothers who contacted their alive boys within the previous 3 months as "alive" is not accurate, as some boys may still die within this 3-month period, though it still remains the closest way to reality in collecting such information from them. (6) Selection Bias: this reduces the precision of sampling for adequate representation to reflect the mothers categorized under each variable. For instance, we may end up selecting more uneducated mothers who had given out their boys for child begging, far more than the representation of the target rural population.

Delimitations. This study employed online questionnaires for qualitative data. The study was performed in selected towns and villages of Kano state and Zaria city only, despite the existence of other suitable locations in Northern Nigeria. The participants of the study were limited to Hausa/Fulani Muslim mothers of at least one son of age 5 years and above irrespective of whether they send their sons out for child begging or not. Other tribes like the Kanuri tribes and indigenous tribes of Gombe, Borno, Adamawa and Jigawa states also take part in this system, though not as prevalent as the Hausa and Fulani tribes.

Implications

From the above result, we have shown that half of the boys who go into this almajiri system will die in the long run; 17% survive and the remaining 33% get lost of which some will eventually also die. In other words, at least 50% of the boys sent into this system die. As incredible as this figure is, it does not come as a surprise because of the harsh conditions and dangerous risk factors these boys are exposed to. A system that kills 3 out of every 6 children and subjects 2 more to be missing, leaving only one to survive, is not a system to tolerate, no matter its cultural or religious correlation. This is clearly a case to be investigated by all stake holders, from the parents, traditional, religious and political leaders and international stake holders such as UNICEF, WHO and any other corresponding body interested in the Global child's welfare.

Also, 124 boys out of 1,000 aged 5 to 24 die in the almajiri system from the children of our respondents. This figure could even be worse considering that the denominator would have been smaller if under-5 aged children were exempted from the population. But as modest as this is, it is still a terrible situation. Figure 2 below shows the average Children and Youth Mortality around the world.



taken from https://data.unicef.org/topic/child-survival/child-and-youth-mortality-age-5-24/

Fig 2: Global Mortality among Children and Youth Aged 5-24 in 1990, 2000 and 2022

We can see that the average Children and Youth Mortality globally in 2022 was about 20 deaths per 1,000 and that of sub-Saharan Africa was about 30 deaths per 1,000 for the same year. Since 2019, the year of this research, is closer to the year 2022 as compared to the other two years- 1990 and 2000, it is still in order if this result can be compared to it. It is appalling to know that the almajiri system contributes six times more deaths than the global average and four times more deaths than the sub-Saharan average. Unfortunately, if more accurate and sophisticated research is carried out, the outcome expected may end up much worse than this. It is high time all stakeholders got actively involved in abolishing this system and developing a new one of Qur'anic education that will not be detrimental to the young boys of northern Nigeria.

Conclusion

This study has raised further questions which would need answers as future studies from this one may be carried out and they are: (1) What happens to the boys that are lost? They either die or survive, hence, how many of these lost ones end up surviving? How many die? (2) What are the median ages these boys survive to? At what age do most survive to? (3) How many survive above the age of 18? And (4) What percentage of these boys die from diseases? What percentage die from social vices and terrorism? This study may not have given the answers to these questions, but it is surely a pathway for more studies in answering them. Furthermore, extensive research is needed to determine if there is a link between the child mortality in the almajiri system and the child and infant mortality of children in the same population. More investigation is needed to understand if multiple marriages and high divorce rates also influence mothers to send their boys into the almajiri system. Also, is

giving their sons into the almajiri system a consequence of poor socio-economic status of mothers just as other consequences such as poor obstetric histories, multiple miscarriages for instance, multiple marriages and divorce, etc.? Finally, it is paramount for the government at all levels, from local government to the federal government of Nigeria to improve the wellbeing of the women living in the rural areas of the North which must include proper western education, improved economic status and health promotion on family planning.

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Authors' Contributions

***Funom Theophilus Makama*:** Conceptualization, Formal analysis, Methodology, Writing of draft, editing of draft, financial sponsorship, ethical approval, supervision, materials and research items and approval of final draft.

Esther Funom Makama: Formal analysis, methodology, writing of draft, editing of draft, financial sponsorship, ethical approval, materials and research items and approval of final draft.

Peter Maitalata Waziri: Formal analysis, editing of draft, financial sponsorship, supervision, materials and research items, and approval of final draft.

Attahiru Dan-Ali Mustapha: Formal analysis, methodology, supervision, materials and research items, and approval of final draft.

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