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# The Sokoto Blind Beggars: Causes of Blindness and Barriers to Rehabilitation Services

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## ABSTRACT

**Purpose:** To determine the causes of blindness and the barriers to accessing rehabilitation services (RS) among blind street beggars (bsb) in Sokoto, Nigeria.

**Materials and Methods:** A cross-sectional survey of 202 bsb (VA < 3/60) using interviewer administered questionnaire. The causes of blindness were diagnosed by clinical ophthalmic examination.

**Results:** There were 107 (53%) males and 95 (47%) females with a mean age of 49 years (SD 12.2). Most bsb 191 (94.6%) had non-formal education. Of 190 (94.1%) irreversibly bsb, 180/190 (94.7%) had no light perception (NPL) bilaterally. The major causes of blindness were non-trachomatous corneal opacity (60.8%) and trachoma corneal opacity (12.8%). There were 166 (82%) blind from avoidable causes and 190 (94.1%) were irreversibly blind with 76.1% due to avoidable causes. The available sub-standard RS were educational, vocational and financial support. The barriers to RS in the past included non-availability 151 (87.8%), inability to afford 2 (1.2%), unfelt need 4 (2.3%), family refusal 1 (0.6), ignorance 6 (3.5%) and being not linked 8 (4.7%). The barriers to RS during the study period included inability of 72 subjects (35.6%) to access RS and 59 (81.9%) were due to lack of linkage to the existing services.

**Conclusion:** Corneal opacification was the major cause of blindness among bsb. The main challenges to RS include the inadequate services available, societal and users factors. Renewed efforts are warranted toward the prevention of avoidable causes of blindness especially corneal opacities. The quality of life of the blind street beggar should be improved through available, accessible and affordable well-maintained and sustained rehabilitation services.

**Key words:** Blind Street Beggars, Corneal Opacity, Irreversible Blindness, Nigeria, Quality of Life, Rehabilitation Services, Sokoto

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## INTRODUCTION

Street beggars are individuals or groups, irrespective of age and with or without disabilities who normally beg or make a living from the streets by asking people for money, food and clothes as gifts or charity.<sup>1,2</sup> Street beggars have been categorized into four groups: Including beggars on the streets, beggars of the streets, beggars in the streets, and beggars of street families.<sup>1</sup> Street begging has been linked to many factors including poverty, unemployment, physical challenges,

medical illness, orphans, peer influence, old age and family disintegration.<sup>1,3</sup> In Central Tanzania, street begging is related to climate change, poverty and failure of social institutions.<sup>4</sup> In Nigeria street begging is reported to be rooted in sociocultural and socioeconomic realities of the country rather than being religiously motivated as misconceived.<sup>5</sup> The beggars roam in public places<sup>2,5,6</sup> using techniques to meet their goals including feigning illness/disability, sitting in strategic places and presenting a supporting letter.<sup>3</sup> Beggars pose and face challenges including social and economic liabilities,<sup>2,7,8</sup> inferiority complex and social

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stigmatization.<sup>4,9,10</sup> Nevertheless begging meets social, religious and economic obligations.<sup>10</sup>

Street begging is a problem in the major cities of Northern Nigeria especially on some streets of Sokoto North Local Government Area (LGA) where many blind individuals congregate to beg. This practice is against the VISION 2020 objective and the Millennium Development Goals (MDG).<sup>11</sup>

Desirous of finding a lasting solution to the menace of blind street begging, the LGA through the social welfare department (SWD) instituted scant, unsustainable, cost ineffective stipends to the blind beggars which failed to exploit the full potential of the beggars. Thus, each of the 269 blind individuals that had registered with the SWD receive a monthly stipend of N6, 500 (USD 1 exchanged for about N150).

The registered beggars were presumed to be irreversibly blind without proper ophthalmological evaluation. Hence, these beggars, some with potentially-curable causes of blindness would not get the optimal support for sight restoration. Restoration of sight for beggars would improve their quality of life, increases the chance that some will stop street begging and enhancing the life of the child escort through school enrollment achieving MDG goals of universal basic education by the year 2015.

A comprehensive approach rather than a palliative financial stipend is needed to address the menace of blind street beggars (*bsb*). This would require information on the proportion of avoidable and incurable causes of blindness among the blind street beggars as well as the barriers to accessing rehabilitation services among the stakeholders especially the blind beggars.

The objective of this study was to determine the causes of blindness and the barriers to accessing rehabilitation services among street beggars in Sokoto, Nigeria. It is believed that information obtained from this study would be useful for effective planning, development and implementation of a comprehensive eye care program for *bsb* in Nigeria and elsewhere.

## MATERIALS AND METHODS

This was a cross-sectional study of *bsb* in Sokoto North LGA area of Sokoto State, Nigeria in May 2009 and June 2009. This study was conducted according to the guidelines of the Declaration of Helsinki. Institutional consent for the study was obtained from the University of Ilorin Teaching Hospital (UIITH) ethical committee. Except for the field survey in Sokoto almost all the remaining portions of the study were performed at UIITH. Ethical clearance was sought from Usmanu Danfodiyo University Teaching Hospital (UDUTH) Sokoto ethical committee; however, it was waived based on the ethical

clearance by UIITH. A written permission to carry out the survey was obtained from the LGA secretariat and this was facilitated through a communication (letter) by the State ministry of Health. Familiarization visit was carried out to the traditional head of the blind (Sarkin Makafi) to explain the purpose of the survey and verbal consent was obtained. Individual consent was obtained from the participants during the conduct of the survey.

Blindness was defined as corrected visual acuity worse than 3/60 in the better eye. Irreversible blindness was defined as visual acuity of no light perception (NPL) in both eyes or when the cause of blindness does not lend itself to improvement by standard Optical, Medical or Surgical treatment.<sup>12</sup>

The study area, Sokoto North LGA, is one of the 23 LGAs in Sokoto State. It constitutes a segment of the Sokoto city metropolitan area and has a population of 226 397.<sup>13</sup> The *bsb* have been noted to congregate around eight major streets of the LGA to beg.

The sample size of the beggars was determined using the formula.<sup>14</sup>

$$N = \frac{Z^2 pq}{d^2}$$

Where

- N = Minimum sample size
- Z = 1.96 which corresponds to the 95% confidence level
- p = Prevalence of 2% (0.02)<sup>15</sup>
- q = 1-P = 0.98
- d = precision level 2% (0.02)

$$N = \frac{1.96^2 \times 0.02 \times 0.98}{0.02^2} = 188$$

When adjusted for a non-responders rate of 10%, N is 210. Hence, a sample of 210 beggars was determined.

Subjects included in this study were selected in two stages. In the first stage, eight locations were identified within the LGA where they congregate to beg. In this stage, an estimate of the population of beggars in each of the eight locations was collated from the leader of the beggars in each location. In the second stage, eligible subjects in all locations that consented were enumerated. A subject in this study was a blind person who engaged in street begging and who also consented to participate in the study.

The instrument used in this study was semi-structured questionnaire. The questionnaire was pre-tested on some *bsb*

along Sokoto bypass road in Wammako LGA. The experience gained from the pilot study was used in refining the procedure further. A semi-structured interview was conducted by one of the authors (AHB) who is fluent in the Hausa language (understood by subjects) among subjects who met the inclusion criteria. The individual blind beggars' responses were recorded in the proforma. The information sought was

- Demographic data: Name, age, gender and educational status
- The antecedents of blindness and intervention sought (medical and rehabilitative) and barriers to access of support services. The causes of blindness were ascertained by clinical examination which was conducted with the aid of the Snellen E chart, pen torch and a  $\times 2.5$  magnifying loupe, and an ophthalmoscope.

Each enumerated subject had his unaided and aided distance visual acuity (VA) tested using an Illiterate E chart under natural illumination. Each eye was initially tested separately with the other eye occluded. Presenting VA at 6 meters was tested unaided and with glasses, if normally worn. For those with VA worse than 6/60, the VA was retested at nearer distances, until 1 metre was reached. The eye was then tested for detection of hand movement (HM), or, if worse, for perception of light (PL) or no perception of light (NPL) as the case warranted. Aphakic individuals were further re-tested with aphakic glasses.

Near vision was tested when appropriate using a near vision chart at a distance of 33 cm with a culturally-compatible format using the transliterated Arabic near vision chart.<sup>16</sup> The anterior segment of each eye was examined using a binocular loupe and a bright pen torch. A direct ophthalmoscope was used for fundus examination.

All causes of blindness in each individual were listed, but the most likely pathology leading to visual loss and the most amenable to treatment was taken as the principal cause of blindness for the subject as per WHO recommendations/rankings.<sup>17</sup>

Individuals identified with minor eye ailments, such as conjunctivitis that required medical therapy, were issued free medications. Those with cataract were referred to specialist hospital Sokoto for free eye surgery. Others were referred to UDUTH, Sokoto for treatment. The incurably blind were linked up with the existing rehabilitation support services.

Data were collated, entered, cleaned and analyzed using Epi-info 2000. Analysis was performed using simple frequencies.  $P < 0.05$  was considered statistically significant.

## RESULTS

A total of 216 (94.7%) *bsb* were examined out of the 228 subjects who were enumerated. However, 202 subjects were found to be blind after examination and were therefore included in the

analysis. The age, gender and education of the study sample are presented in Table 1. The age range was from 8 years to 78 years. The mean age was 49 years (SD12.2). One hundred and seven (53%) were males and ninety-five (47%) were females. Individuals 46-60 years of age constituted the highest percentage (44.6%). The educational status of the *bsb* showed that 191 (94.5%) had no formal education.

### Causes of blindness among blind street beggars

The principal cause of blindness was non-trachomatous corneal opacity (60.8%). Of all the causes of blindness, the cornea opacity alone from non-trachomatous and trachomatous causes account for 73.6% [Figure 1]. The causes of the corneal opacity were preventable. One hundred and sixty-six individuals (82%) were blind from avoidable causes and 190 (94.1%) were irreversibly blind with 76.1% due to avoidable causes. Twelve subjects had reversible blindness including cataract 11 (5.4%) and uncorrected aphakia 1 (0.5%) [Figure 1] and their unaided visual acuities ranged between counting finger (CF) and perception of light (PL). The distribution of visual acuities among 190 (94.1%) irreversibly blind subjects reveals 180/190 (94.7%) had no light perception (NPL) in both eyes [Figure 2].

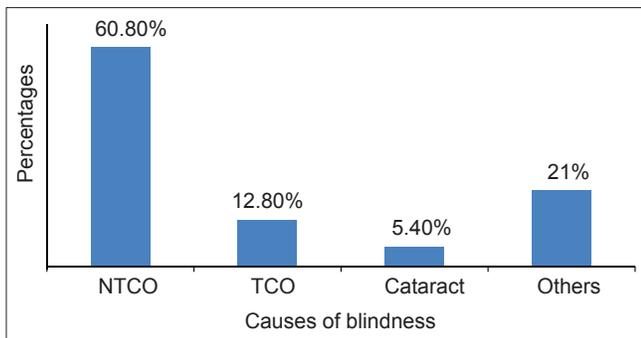
### Accessing available rehabilitation services and barriers

The distribution of the available and accessed rehabilitation services by the subjects prior to and during the study period is as shown in [Table 2]. The challenges to accessing rehabilitation support in the past was mainly due to unavailable services (87.8%) [Table 3]. Seventy-two subjects (35.6%) were not accessing rehabilitation services during the study period and 59 (81.9%) were due to lack of linkage to the existing RS.

Cross tabulating rehabilitation services in the past and access to support as of the period of field study revealed that 106 out of the 130 respondents with no access in the past were later accessing some form of support. However, the result was not statistically significant ( $P = 0.05$ ).

**Table 1: Age, Gender and Education distribution of subjects**

Age range (years)	Male	Female	Total	
	Number	Number	Number	%
0-15	1	-	1	0.5
16-30	7	5	12	5.9
31-45	38	30	68	33.7
46-60	46	44	90	44.6
$\geq 61$	15	16	31	15.3
Total	107	95	202	100.0
Educational attainment	Number		%	
None	8		4.0	
Non-formal education	191		94.5	
Primary	2		1.0	
Secondary	1		0.5	
Total	202		100.0	



**Figure 1:** Causes of blindness among 202 subjects NTCO, non-trachomatous corneal opacity; TCO, trachomatous corneal opacity. Others: couching 4%, surgery related complications 1.0%, glaucoma 2.5%, aphakia 0.5%, optic atrophy 2.5%, uveitis 1.5%, uncorrected aphakia 0.5%, other posterior segment and central nervous system abnormalities 9%

**Table 2: Distribution of available and accessed rehabilitation services by the subjects**

Item	Period (%)	
	Before study	During study
Available rehabilitative services		
Educational	7 (23.3)	1 (0.8)
Vocational training	23 (76.7)	10 (7.7)
Financial support (stipends)	Not available	111 (91.5)
Subjects accessibility of RS		
Subjects accessed RS	30 (14.9)	130 (64.4)
Subjects did not accessed RS	172 (85.1)	72 (35.6)

RS: Rehabilitative services

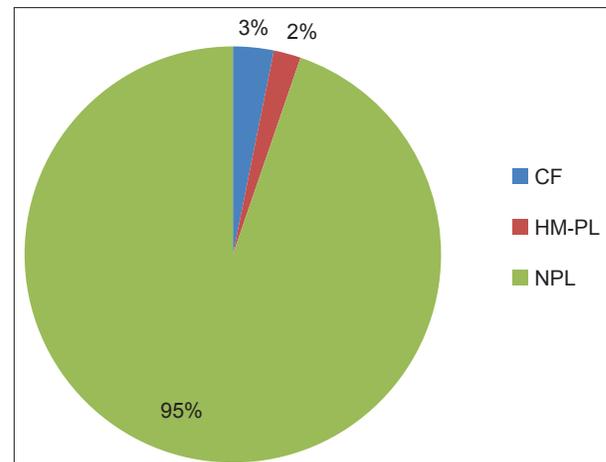
**Table 3: Barriers to accessing rehabilitation services among subjects**

Barriers	In the past		At present	
	n	%	n	%
Cannot afford	2	1.2	1	1.4
Family refused	1	0.6	1	1.4
Not available	151	87.8	6	8.3
Not aware of any	6	3.5	5	6.9
Need not felt	4	2.3	0	0.0
Not linked to any	8	4.7	59	81.9
Total	172	100.0	72	100.0

## DISCUSSION

The major causes of blindness among *bsb* in Sokoto were due to preventable corneal opacities and cataract as well as the complications from couching. The main causes of blindness in this survey are comparable with another study among blind beggars in Nigeria,<sup>18</sup> with the major causes being corneal scarring and cataract. Corneal scarring is a significant cause of blindness in developing countries.<sup>19</sup>

Overall, avoidable causes were responsible for 82% of blindness in this study. The causes were mainly preventable, such as in preventable corneal opacities as well as complications of cataract intervention and glaucoma in which early detection and prompt intervention would have prevented blindness. Other causes were treatable, such as cataract and uncorrected aphakia.



**Figure 2:** Distribution of visual acuity among 190 irreversibly blind subjects. CF denotes count fingers. HM-PL denotes hand motion to perception of light. NPL denotes no perception of light

The proportion of blindness due to avoidable causes obtained in this study is similar to the other studies carried out across Nigeria including Lawan<sup>20</sup> 93%, Adejor<sup>21</sup> 92%, Zubairu<sup>22</sup> 90% and the Nigerian national survey of blindness and low vision<sup>23</sup> 84%. These findings are typical of blindness in sub-Saharan Africa and other parts of the developing world where 80-90% of all blindness is due to avoidable causes. Seventy to eighty percent of global blindness is avoidable.<sup>24</sup>

Majority of the *bsb* (94.6%) in Sokoto were irreversibly blind and are in need of optimal rehabilitation support services. Rehabilitation of the blind is about the delivery of appropriate support services such as provision of low vision services (for those with some residual vision) and formal education. In this survey some subjects 10/202 (4.6%) [VA range PL to 2/60 in their better eye] were irreversibly blind from conditions, such as glaucoma, optic atrophy, and couching. These subjects had low vision and should benefit from low vision aids as they had visual acuities that could not be reversed with standard medical, surgical or optical means. Rehabilitation also includes the provision of vocational and functional training as well as social and legislative service support. This is with a view to enhancing the chances of the affected individuals particularly children, who have their whole life ahead of them, to acquire a means of livelihood, improved social interaction and enhanced self-dignity.<sup>25,26</sup>

People who are irreversibly blind are more likely to be on the street as beggars probably because they know that the hope of visual restoration is slim. More so, these people encountered difficulty in accessing rehabilitation services. In our study, only 1.5% of the subjects accessed formal education while overwhelming majority accessed non-formal education and majority, 164 (81.2%) became blind during childhood and should have benefitted from formal education. Eighty percent of learning in a normally sighted child is acquired through vision;

hence a blind child needs special training to use stimuli from the other senses.<sup>27</sup> The education for the blind children could have been acquired through integrated school models or in special schools for the blind. The modern trend is however, in favor of the former.<sup>28</sup> The integrated school model for educating blind children was favored by 78.7% of ophthalmologists practising in Nigeria.<sup>25</sup> This is because of better social interaction and the cost reduction by this model. However, there is still a need for continued existence of special schools for the blind to serve as resource centers for the provision of specialized teaching materials and resource persons for the integrated schools within their defined catchment areas. Another role of the special schools for the blind will be to serve as the sole facility for the training of blind children with additional disability and who therefore cannot be benefitted by integration.<sup>25</sup>

Since our subjects are now irreversibly blind adults or blind children who could not access formal education or could not proceed further, there are now rehabilitation centers on the provision of vocational skills which will enable them earn a livelihood rather than having to resort to street begging. The examples of these skills include, simple crafts, such as basket weaving, furniture making and farming.

The overall prevalence of irreversible blindness in Sokoto State was reported to be 0.1-0.5%, this means that between 3509 and 17545 people were irreversibly blind.<sup>29</sup> This calls for a more pragmatic approach to ensure optimal rehabilitation of these people, if the menace of street begging among the blind persons is to end. Functional rehabilitation can be offered alongside vocational training through community based-rehabilitation program. This has the advantage of increasing the activities that blind people can do at their homes and in the neighborhood, focusing on what matters in that specific community at that specific stage of life.<sup>30,31</sup> Mobility training and orientation form the core of functional rehabilitation, as the affected individual will almost derive the most independence from these.<sup>25</sup>

A community screening program in Gashaka local government area of Taraba State also revealed a large number of irreversibly blind subjects.<sup>30</sup> The study formed the basis for the establishment of a community-based rehabilitation program in that onchocerciasis endemic area. A community rehabilitation program has been found to be effective, technologically appropriate and a sustainable method of training irreversibly blind adults to become self-reliant and productive.<sup>32</sup> This approach can be replicated in Sokoto North LGA in order to salvage this deplorable situation.

The majority of the irreversibly blind subjects reported the barrier to accessing rehabilitation services in the past as services being not available. In the past (about 30 years ago) there were

no rehabilitation services available within the study area. Even at the time of this study, the facilities were not functioning optimally and were not adequate enough to cater for the large number of the irreversibly blind in the area. A similar trend exists in other parts of the country.<sup>25</sup>

At the time of writing, the majority of respondents had access to some rehabilitation support in form of monthly stipends and vocational training. The support was however, reported to be inadequate to cater for the basic necessities of life. A monthly stipend of N6, 500 (USD 1 exchanged for about N150) was being given to each of the blind persons that had registered with the social welfare department of the LGA. This approach is however, unsustainable and also not cost effective as it does not exploit the full potential of the blind. The inadequacy of rehabilitation services in Nigeria has been previously reported.<sup>25</sup> The barriers to accessing rehabilitation support services at the time of this study were multifactorial but mainly due to the lack of linkage to the available services, it is however possible to break through the barriers as reported in other studies from Nigeria.<sup>33</sup>

Persons with no access to curative services constituted the majority in this study. Even those that accessed treatment did so mainly at a primary health centre and General hospitals. Only six people have been to an eye clinic for treatment. This may explain the lack of statistically significance difference between accessing curative services in a hospital and irreversible blindness, as these people presented to a hospital well beyond the window of opportunity for successful treatment.

The findings from this study have underscored the need for rehabilitation and refurbishment of the existing rehabilitation facilities in the community, provision of more vocational centers for training the irreversibly blind adults with a view to establishing them to be self-supporting. There should be increased funding for the education of irreversibly blind children. Legislation discouraging discrimination against the blind in certain field of activities, enabling educated blind people to access jobs would encourage parents to allow their wards to access formal education. There should be a partnership by government, Non-Governmental Organizations (NGOs) and parents in order to achieve these goals. Furthermore, the community ownership of the rehabilitation services should be encouraged for sustainability.

The majority of *bsb* was in the prime of life, suffered avoidable irreversible blindness and had no formal education. Corneal opacification was the major cause of blindness among *bsb*. The main challenges to RS include its inadequacy, societal, and user's factors. There is the need for renewed efforts toward prevention of avoidable causes of blindness especially those causing corneal opacities. The quality of life of the blind beggars should be improved through available, accessible and affordable well-maintained and sustained rehabilitation services.

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