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Rehabilitation and Paid Employment for Blind People in a Low Income Country

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Authors' contributions

This work was carried out in collaboration between all authors. Author OOO designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors OTB, AHA and TOO managed the literature searches authors OJD and ME performed analyses of the study. All authors read and approved the final manuscript.

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ABSTRACT

Background: Rehabilitation of blind people is one of the components of Vision 2020. Despite advancement in technology and low vision rehabilitation, it is still difficult for blind people to gain paid employment especially in low income countries. This study was embarked upon to determine employment status of the rehabilitated blind in Ogun State and factors that enhance paid employment.
Methodology: A cross sectional study of sixty six blind adults was recruited from Nigerian Society of blind people Ogun State branch from May 2017-November 2017. An interviewer-administered questionnaire was used to collect data on personal data, academic qualifications, mode of rehabilitation, employment status, and Braille literacy. One hundred and one potential employers from six sectors of the economy were also recruited into the study to assess their willingness to

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employ blind persons and the qualifications required.
Result: The age range of respondents in this study was 17-68 years, mean 38.51±11.97 years. Forty two (63.66%) were males, 25(37.9%) had tertiary education, 35(53%) were Braille literate and 18(27.2%) had paid employment 16 of whom were by the Government. Education was significantly associated with paid employment (P=0.008). Amongst prospective employers 55(54.5%) would employ a blind person but did not know in what capacity.
Conclusion: The rate of paid employment for blind subjects is low. Tertiary education as a component of rehabilitation is important for blind people to get paid employment. Employers are ignorant of capabilities of blind subjects and forum of interactions between the two should be encouraged.

Keywords: Paid employment; rehabilitation; blind people; employers; low income country.

1. INTRODUCTION

The World Health Organization has asserted that globally visually impaired people face a lifetime of inequality [1]. They also have poorer health and face barriers to education and employment. In low income countries like Nigeria, it is uncommon to see blind people (VA<3/60 in better eye with correction) and those with severe visual impairment (SVI) (VA 6/60-3/60) in paid employment. Similarly, in developed economies despite advancement in rehabilitation methods and low vision technology blind individuals have also suffered high unemployment rate [2,3]. Employment does not only bring financial gains for the individual, it has significant impact on the health of the family and working confers status and self-confidence [4,5,6]. Employment reduces dependency through begging and is therefore desirable. However, the rate of employment for those that have severe visual impairment (visual acuity 6/60-3/60) and blind people (< 3/60 with correction or visual field<10 degrees from fixation) is between 35 and 37 % [7,2,3].

Consistent predictors of employment in the severely visually impaired and blind people are high certifiable educational level, academic competence, use of assistive technology in order to read printed material, having attended integrated schools, age (younger age) and having had training in blindness skills [8,9]. Others are, legal blindness without other disabilities, male gender and living with a partner [10,11]. Warren-Peace noted that employers would prefer the consumer to be self -confident being comfortable with his disability with no awkwardness [10]. In other studies high quality relationship with vision rehabilitation counselor, independent travelling skills and social skills were noted [8,12].

There are many challenges confronting blind people and people with SVI from securing competitive employment. Cruden, Butler, and Sansing found that there was a negative attitude toward blind people and SVI people [13]. The potential employer may think they are not safe and do not possess the ability or skills to work. The work place may be highly technical, limiting the ability of blind subjects [6]. Equally important De Jong found that in a depressed economy affecting the society as a whole blind people are discriminated against when competing for the few jobs available [14]. Nyman, noted that blind subjects may not be trained to search for work and if they are they often get frustrated from fruitless searching and become disinclined to work [3]. La Grow et al, found that lack of vocational and rehabilitation training to fit the demands of employment may be a hindrance to employment [6]. The family may act as barrier by over protection thereby limiting their independence [15]. In some countries begging is common because it is expected and customary to give alms to blind people sometimes to fulfill religious obligations. The distance to the workplace, mobility and transportation difficulties are amongst the challenges faced by the individual who is blind [6]. Even after being employed, it has been reported that those with low vision were less satisfied with their jobs and yet had less freedom to decide and less opportunity to develop new skills [16].

Generally there is a societal attitude that fails to recognize the ability of blind people [3]. This attitude had been associated with employers weaker links to the disabled, arising from government's failure to fund disability awareness programmes [3,15]. Financial incentives such as tax reduction may encourage employers to employ disabled people including blind people [17].

There are studies from Low income countries on causes of blindness in schools for blind people

and the importance of rehabilitating blind children, but few on paid employment for these students after leaving school [18]. Also in low income countries rehabilitation services may not be available, it may not be accessible or not desirable [19,20]. Rehabilitation should include education, training in blindness skills and vocational training. Often vocational training alone is achieved. Such training is associated with handcrafts which may not bring financial satisfaction. It may not also be conducive for those who become blind later in life.

Studies on blind illiterate beggars had shown their desire to be rehabilitated so that they could be gainfully employed [21]. Most of the members of National Association of blind people Ogun State branch are rehabilitated. The purpose of this communication was to find the prevalence of competitive employment in this group of registered, visually disabled and identify the factors which enhance and those that diminish competitive employment. This study intends to draw attention to comprehensive rehabilitation of blind people to achieve maximum benefit.

2. MATERIALS AND METHODS

2.1 Study Area

Ogun State is in South- West Nigeria, bordered by Lagos State to the South, Oyo and Osun States to the North, Ondo State to the East and Republic of Benin to the West. The prevalence of blindness from the Nigerian National survey of Blindness is 2.8% (Nigeria National Blindness Survey 2005-2007). There are two primary schools for blind people and three integrated secondary schools and one vocational center in nearby Lagos state. There are no counselors for blind people or job placement officers. Generally pedestrian walkways are not common.

2.2 Study Design

This was a cross sectional observational study of the registered blind in Ogun State of Nigeria belonging to Nigeria Association of blind people (NAB) from May- November 2017.

2.3 Sample Size Calculation, Study Protocol

The sample size was calculated from a sampling frame of 206 registered blind of Nigeria Association of blind people - Ogun State branch using a prevalence of 37% employment rate for blind people (Bell & Mino, and Nyman), and Leslie-Kish method of calculating sample size for population less than 10,000 [2,3,20,22]. $N_1=Z^2P(1-P)/(d)^2$ where N_1 is sample size for population more than 10000.

Z=The standard normal deviate set at 1.96
P=Employment rate =37% i.e 0.37(Nyman 2009)
1-P=100-37=63% =.63
d= precision set at 10% for this study that is 0.1
$N_1=(1.96)^2\ 0.63(0.37) \div(0.1)^2=0.8986\div(.1)^2=89.86$
But population of blind people in Ogun state is less than 10000(Araoye)
Calculation of new Sample size N_2f
$N_2f=N_1/1+(N_1/N)$
N=Total number of registered blind in Nigeria Association of blind people (Ogun State branch) which is 206
N_2f= 89.86/1+(89.86/206)=89.86/1.44=62.40
Adding attrition rate of 5% of 62.40 which is 3.12
N_2f=65.60 =66 blind subjects

A minimum size of 66 blind subjects was obtained. A questionnaire was designed to gather information on demographic data, duration of blindness, level of education, type of school attended, the occupation, Braille literacy, mobility, vocational training, blindness skills, level of visual impairment and their employment status. The questionnaire was validated in another branch of NAB and adjusted accordingly. The members were interviewed consecutively on their meeting days using a convenient sampling method until the required number of blind and SVI people was obtained. The chairman of NAB signed a written consent while the others gave oral consent. After the oral interview conducted by three of the authors each participant had ocular examination done with a pen torch and direct ophthalmoscope where possible. Three rehabilitation facilities were visited. Ade Okubanjo for the visually challenged (for primary school), Adeola Odutola college Ijebu Ode, (Integrated secondary school) and Nigeria Society for blind people Oshodi -Lagos (Vocational centre).

A pretested questionnaire was used to gather information from potential employers on their opinion about participation of blind people in the economy of the state, willingness to employ a blind person and their requirements for employment. These were secondary school proprietors, principals and human relation officers of factories picked by simple random sampling. A signed consent was obtained from

them. A total of one hundred and fifty questionnaires were distributed.

The study was approved by the ethical committee of Olabisi Onabanjo University teaching Hospital and it followed the tenets of the declaration of HELSINKI on studies involving human subjects.

2.4 Statistics

The result was recorded in a personal computer using Statistical Package for Social Sciences IBM version 20. Continuous variables were compared by means and percentages while Discrete variables were compared using Pearson's chi- square with values≤ 0.05 as being significant.

3. RESULTS

There were 66 blind participants with 42 (63.6%) males and 24 (36.4%) females, with M:F 1.75:1. The age range was from 17-68 years, Mean 38.51±11.98years. Fifty nine (89.4%) had visual acuity of Nil perception of light (NPL) in both eyes (Table 1).

Table 1. Age and visual status of sixty six participants

Description	Number	Percentage
Sex		
Male	42	63.6%
Female	24	36.4%
Age in years		
11-19	3	4.5%
20-29	13	19.7%
30-39	21	31.8%
40-49	18	27.8%
50-59	7	10.6%
≥60	4	6.1%
Visual Status in better eye		
NPL	59	89.4%
HM	5	7.6%
1/60	2	3%

Key *NPL* *Nil Perception of Light*
HM *Hand Motion*

Majority of respondents became blind from glaucoma 29(43.9%), followed by pigmentary degeneration of the retina 9(13.6%), corneal scarring 7(10.6%), trauma 4(6.1%), cataract 2(3.03%), indeterminate 14 (21.2%). Duration of blindness ranged from 5 years to 46 years mean4.136 SD 5.374. Twenty three (34.8%) had been blind for 11 to 20 years and 19 (28.8%) for over 30 years. Table 2 shows the primary and secondary education of the participants.

Fifteen (22.7%) subjects became blind after primary education and 16 (24.2%) participants did not proceed to secondary school. Twenty five (37.9%) had tertiary education of which 6 (9.1%) had university education and 19(28.8%) polytechnic. Thirty five (53%) were Braille literate and 39(59.1%) possess vocational skills. Twenty two (33.3%) were computer literate while 4 (6.1%) had technical skills. Fifty six (84.8%) use the white cane for mobility, but was hindered by lack of pedestrian walkway. Eighteen (27.3%) were in paid employment 16 (24.2%) of which were government workers. All but one government workers were teachers. Eleven (68.8%) of those employed were males. The paid employment rate in this study was 27.3%. Employment status is shown on Table 3. Thirty-three (50%) were self-employed while 6(9%) were unemployed and nine were students.

Education especially tertiary enhanced competitive employment and this was statistically significant *P*=0.008. Education even at multivariate level is still significant at *P*=0.021. Braille literacy and Computer competency also enhanced employment but were not statistically significant. However all those employed as teachers were Braille literate.

One hundred and one potential employers filled the questionnaires out of 150 which gave a return rate of 67.3%. Eighty two (81.2%) were from private agencies, 12 (11.9%) from government and 7 (6.9%) from industries. Eighty seven (86.1%) were from education sector of the economy, four (4%) from agriculture, six (5.9%) from manufacturing, three (3%) from health, and one (1%) was an entrepreneur. Ninety nine (98%) agreed that blind people can contribute to the economy however nearly 60% of potential employers were ignorant of technological advancement in the training of blind people and SVI people in work skills (Fig. 1).

Although 33(55%) would employ a blind person, more than 60% of them did not know the qualifications required (Fig. 2). The jobs proposed for blind people were teaching 22(21.8%), secretary /typist 13(12.9%), counseling 6(5.9%),, customer care 4(4%), computer operator 2(2%) and poultry farming 4 (4%), while 41(40.6%) did not propose any job.

Table 2. Primary and secondary education status of sixty six participants

Type of school	Primary		Secondary	
	Number	%	Number	%
Integrated	2	3%	28	42.4%
School for blind	27	40.9%	0	0
Normal	36	54.5%	21	31.8%
None	1	1.5%	0	0
Total	66	99.9%	49	73%

Key *15 Participants went blind after completing normal primary school*
16 blind children did not proceed to secondary school

Table 3. Employment status of sixty six participants

Age group	Self employed	Govt employed	Private organization	Unemployed	Students
10-19	0	0	0	0	3
20-29	4	0	0	3	6
30-39	15	5	0	1	0
40-49	9	7	1	1	0
50-59	3	2	1	1	0
≥60	2	2	0	0	0
Total	33	16	2	6	9

Key Govt – Government

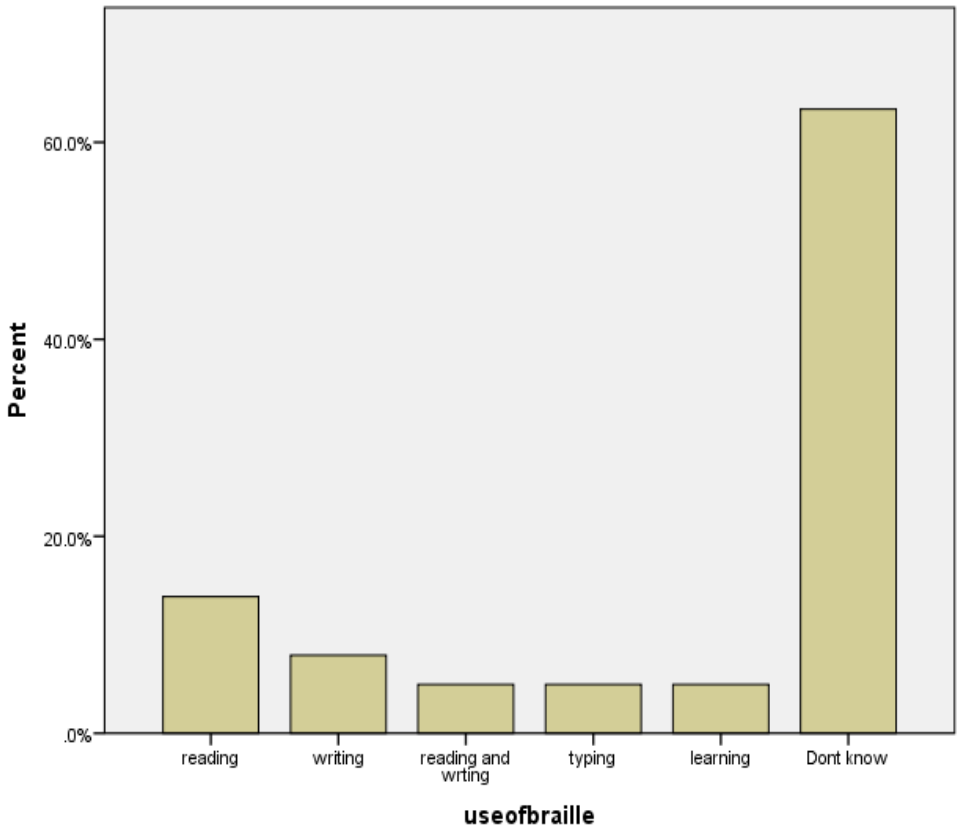

Fig. 1. Knowledge of use of braille by potential employers

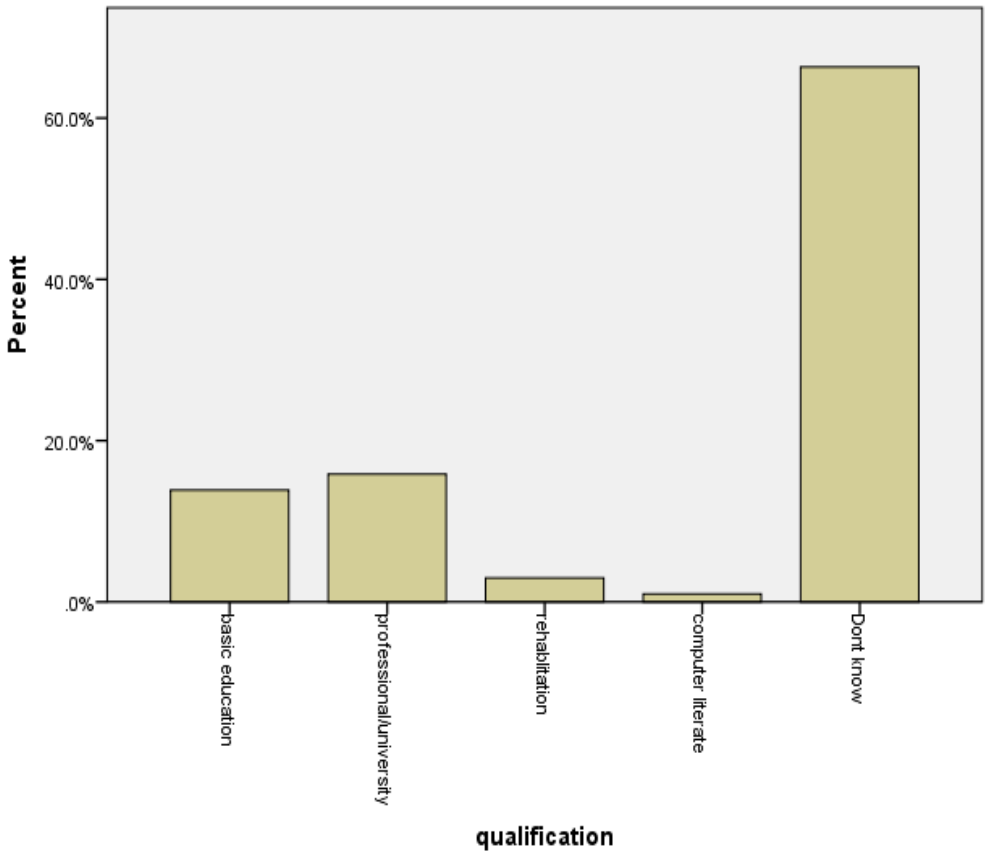

Fig. 2. Possible jobs for blind people as proposed by potential employers of labour

4. DISCUSSION

The study observed that the rate of paid employment of blind people in this study was 27.3% which is less than 35-37% in other studies but similar to the New Zealand study of 26% for those who had no usable vision [2,6]. Females were less likely to be in paid employment than males similar to the report which also found that their wages were less than that of males [12]. In this report the wages were the same because those in paid employment were government employees on the same salary scale.

Education especially tertiary was found to be a significant predictor of competitive employment similar to several studies [2,11,23]. Educating blind people in a low income country has many challenges. This study revealed that 24.2% of blind people that attended primary school did not proceed to secondary school. While majority had vocational skills in handcrafts (59%) only 37.9% had tertiary education which is necessary for employment in a highly competitive society. Limiting factors towards education are ignorance on the possibility of educating blind people , inability to pay school fees from poverty, and paucity of good schools with technological aids and appliances. People who became blind later in life were ignorant of facilities available for rehabilitation because information for vocational training and training in blindness skills were lacking [24]. Free education for blind people up to tertiary level is desirable for a comprehensive rehabilitation.

Braille skill was important for competitive employment although it was not found to be statistically significant in this study. Braille enables the blind child to attain higher education and communication skills which are necessary for employment [25]. All those employed by government in this study were Braille literate supporting the study of Golub who noted that Braille skills enhanced the employment of congenitally blind adults [26]. Computer competency also enhanced employment but this was not statistically significant. Further studies

are required to ascertain the significance of computers in the employment of blind people. The potential employers in this study were ignorant of Braille and other technological advances in the rehabilitation of blind people.

Another challenge of blind people to secure employment in Nigeria is lack of training to fit the demands of other jobs apart from teaching [6]. There is no training from school to work environment. There is also no intermediary for guidance in employment. Rehabilitation without planning for employment can only bring frustration and depression as indicated by Nyman [3].

It was noted in a study that mentoring and belonging to a social group are other avenues that have been found to enhance employment for blind people [27]. Mentoring could not be ascertained in this study. However it was noted that adventitious blind adults were encouraged to go for rehabilitation and vocational training by their compatriots who had done so. There is a need for all eye care workers to introduce rehabilitation to adventitiously blind adults and persuade parents of blind children to educate them.

Teaching was the most common profession in this study but the teachers were limited to schools for blind people and the government was the main employer similar to the study by Wolfe et al in Nigeria and in contrast to another study that found that the visually impaired worked more in agriculture and fisheries [28,5]. It would seem that those above 40 years were more likely to be employed but then they had been employed earlier when they were younger similar to the finding of another study where younger people were more favourably employed [8].

The main barrier to employment was factors arising from vision impairment itself similar to the finding of La Grow, et al [6]. Prospective employers in this study agreed that blind people could contribute to the economy but the majority did not know how blind people could fit in. Harabi, et al, and La Grow, et al, noted that there is a general lack of awareness of the capability of blind people because of limitations imposed by their inability [5,6]. The low trend in the employment of youth during the present recession in Nigeria will reduce employment of blind individuals further since they will be competing with sighted youths for the few available jobs [29]. The potential employers proposed that blind people could be teachers, secretaries, poultry farmers and computer operators suggesting that blind individuals can be trained specifically to meet these demands. There is a need for the government and all eye care workers to promote opportunities for employers to interact with the visually disabled in the society. This can start with integration of blind children from primary school and engaging blind people to act working parts in local films [30]. The celebration of world sight day can be used as an avenue to create awareness on the aspiration of blind people. Government can give incentives to encourage employers in form of tax reduction and soft loans to provide a suitable environment for blind people or tax imposition to force compliance [17]. Rehabilitation is a component of vision 2020. It is important to convince government to embrace a comprehensive form to achieve financial independence for blind people [31].

5. CONCLUSION

In conclusion tertiary education as part of rehabilitation is important for blind people to get competitive employment. Training for specific jobs is suggested. Employers can be encouraged to employ blind people.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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