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Beyond the Injuries: Exploring the Perceived Environmental Barriers to Sustainable Living for Persons with Traffic-Related Disabilities in Southwestern Nigeria

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Abstract

Road traffic injuries (RTIs) are a major global public health problem, especially in low- and middle-income countries (LMICs), especially in Nigeria. In addition to fatalities, RTIs result in a significant number of people living with disabilities. Previous studies have emphasized challenges faced by persons with disability resulting from congenial and pathogenic conditions. However, this study investigated the perceived challenges facing people with traffic-related disabilities (TRD) in Southwestern Nigeria in order to gain insight into the lived experiences of persons living with TRD and inform effective policy interventions. The Social Model of Disability anchors this study. A cross-sectional survey was conducted among 421 people with TRD. Using structured questionnaire, data were collected on socio-demographics, injury characteristics, and perceived challenges. Descriptive and inferential statistics were used to analyze quantitative data, while qualitative data was content analyzed. Respondents' age was 36.9±15.46 years, major reported TRD cases were Amputation (35.4%), spinal-cord-injury (30.0%), hearing impairment (12.8%) and paraplegia (10.5%). The results showed that the most common perceived challenges were reduced income (34.5%), immobility (30.1%), neglect (20.3%), and non-inclusive building designs (15.0%). Analysis shows that there was no significant difference in the cost of rehabilitation between males (M = 2.9, SD = 1.11) and females (M = 2.8, SD = 1.25) ($t(307.2) = 0.393$, $p = 0.531$). Content analysis revealed that perceived challenges were job loss, difficulty using public transportation, and environmental barriers. This study underscores the imposition of substantial socio-economic and environmental challenges on affected individuals with TRD. The study recommends interventions that focus on improving access to public transportation, access to rehabilitation services, and promoting social inclusio and quality of life.

Keyword:

Traffic-related disabilities, challenges, southwestern Nigeria, Sustainable living, Environmental barriers

1. Introduction & Literature Review

Road traffic crashes (RTCs) represent a significant global health crisis, disproportionately affecting low- and middle-income countries (LMICs) (WHO, 2018; Goel et al., 2018; O'Neill et al., 2018; Peden et al., 2002; Krug et al., 2000). This disparity is often attributed to factors such as rapid motorization without corresponding improvements in road safety infrastructure, traffic regulations, and enforcement (e.g., Krug et al., 2000; Bhalla et al., 2000). Nigeria, with its rapidly expanding road network and increasing vehicle ownership, faces a high burden of RTCs, leading to substantial morbidity, mortality, and disability (FRSC, 2022; Afolabi et al., 2016; Ogunsumi et al., 2010; Aderinwale et al., 2012; Ogundare, 2011). The long-term consequences of these crashes extend beyond immediate injuries, often resulting in permanent disabilities that profoundly alter individuals' lives (Mock et al., 2012; Ameratunga et al., 2006; Jacobs et al., 2000; Bener et al., 2003; Maffulli et al., 2006).

While there is abundant literature on the challenges facing persons living with TRD, very few literature focus on environmental barriers to the sustainable living of PWTRD. Traffic-related disabilities can significantly impact individuals' ability to participate fully in society, often leading to marginalization and exclusion (Priestley, 2003; UN, 2006; Dube & Dube, 2012). These impacts can be seen across multiple dimensions of life, including physical functioning (Molloy et al., 2010), mental health (Schizophrenia Commission, 2012; Harrison-Guzman et al., 2001), economic opportunities (Groce, 2017; Emerson et al., 2010; Jones & Lundy, 2014), and social participation (Barnes & Mercer, 2002; Priestley, 2003; Dube & Dube, 2012). A study by Molloy et al. (2010) observe that Traffic-related disabilities can result in a wide range of physical impairments, affecting mobility, dexterity, and other bodily functions, which can create significant barriers to independent living, requiring assistive devices, personal care assistance, and accessible environments. Chronic pain, fatigue, and secondary health conditions are also common, further compounding the physical challenges faced by people with TRDs (Hadjistavropoulos et al., 2010).

The psychological impact of TRDs can be substantial, with many individuals experiencing depression, anxiety, post-traumatic stress disorder (PTSD), and other mental health conditions (Schizophrenia Commission, 2012). The sudden onset of disability, coupled with the challenges of adapting to a new way of life, can contribute to feelings of loss, grief, and isolation (Livneh, 2001). Body image concerns and reduced self-esteem are also common, particularly in societies that place a high value on physical ability.

People with TRDs often encounter social barriers that limit their participation in community life. These barriers can include stigma, discrimination, negative attitudes, and lack of awareness about disability (Barnes & Mercer, 2002). Social isolation and exclusion can have profound effects on well-being, leading to loneliness, reduced social support, and limited access to opportunities (Priestley, 2003).

The economic consequences of TRDs can be devastating, with many individuals experiencing job loss, reduced income, and increased expenses related to healthcare, rehabilitation, and assistive devices (Groce, 2017; Emerson et al., 2010). Limited access to education and vocational training can further restrict employment opportunities. The financial burden of disability can create a cycle of poverty, making it difficult for individuals to meet

their basic needs and participate fully in society (Loprest and Maag, 2001; Sung and Rois, 2015)

(Imrie (2003) opines that environmental barriers, such as inaccessible buildings, transportation systems, and public spaces, can significantly restrict the mobility and independence of people with TRDs). Also, lack of accessible housing, inadequate sanitation facilities, and inaccessible information and communication technologies can further compound the challenges faced by people with TRDs.

However, this study examined the environmental barriers for sustainable living for person with TRDs in Southwestern Nigeria with the aim of providing a comprehensive understanding of their lived experiences in order to inform effective interventions.

1.1 The Social Model of disability (SMD)

The Social Model of disability (SMD) provides the framework for this study. The SMD distinguishes between "impairment" (the actual physical or mental difference) and "disability" (the restrictions caused by society's failure to accommodate those differences). It emphasizes that disability is not solely an individual's problem but a societal issue. It focuses on removing barriers that prevent people with impairments from fully participating in society (Oliver, 1990; Oliver, 1996; Grant, 2009; Oliver, 2013)

In essence, the Social Model of Disability provides a framework for understanding that the challenges faced by people with TRD are not just personal struggles but also consequences of societal structures and attitudes. The study's attention to "non-inclusive building designs" and transportation issues aligns with the social model's emphasis on the environment's role in creating disability.

The model accounts that "non-inclusive building designs," "immobility" due to inadequate transportation, "neglect," which directly reflects societal barriers, the "reduced income", which is linked to discrimination in the work place, and lack of reasonable accommodations by employers create a barrier to employment are not simply consequences of the individual's injury but results of a society that is not designed or organized to mainstrean people with disabilities. The study's attention to "non-inclusive building designs" and transportation issues aligns with the social model's emphasis on the environment's role in creating disability. In addition, content analysis of qualitative data where respondents describe feeling like "a baby" and losing "privacy," illustrates the social and emotional impact of societal barriers, which is a key aspect of the social model.

1.2 Study Location

Southwestern Nigeria (SwN) shares boundaries with the Nupe and Borgurawa to the north, the Igala to the northeast and the Edo to the east. It also boarders the Atlantic Ocean in the south and in the west by Republic of Benin (Akinjogbin 2002; Akintonde and Kalilu, 2013). The region falls within latitudes 6^0 and 9^0 North of the equator and longitudes 2^0 30’ and 6^0 30’ East of the Greenwich Meridian (Akintonde and Kalilu, 2013). With its rapidly expanding urban centers and complex infrastructural challenges, SwN provides a critical study area for investigating the environmental barriers to sustainable living for persons with traffic-related disabilities (TRDs). Road transport is used for conveyance of man, goods and services

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(Ipingbemi, 2006; Ofoegbu, 2013) for being relatively cheaper than other means, and its capacity to provide door - to - door services (Oyesiku et al, 2013). The region's high traffic density, coupled with often inadequate road infrastructure and enforcement, results in a significant number of road traffic accidents, leading to a substantial population living with TRDs. As noted in the World Health Organization's (2018) Global Status Report on Road Safety, low- and middle-income countries, including Nigeria, bear a disproportionate burden of road traffic injuries. Furthermore, the rapid urbanization documented by Onokerhoraye (1995) has led to poorly planned urban development, characterized by inaccessible public spaces and transportation systems, which pose significant challenges for individuals with mobility impairments. This context makes Southwestern Nigeria particularly relevant for understanding how environmental factors exacerbate the challenges faced by those with TRDs in achieving sustainable livelihoods.

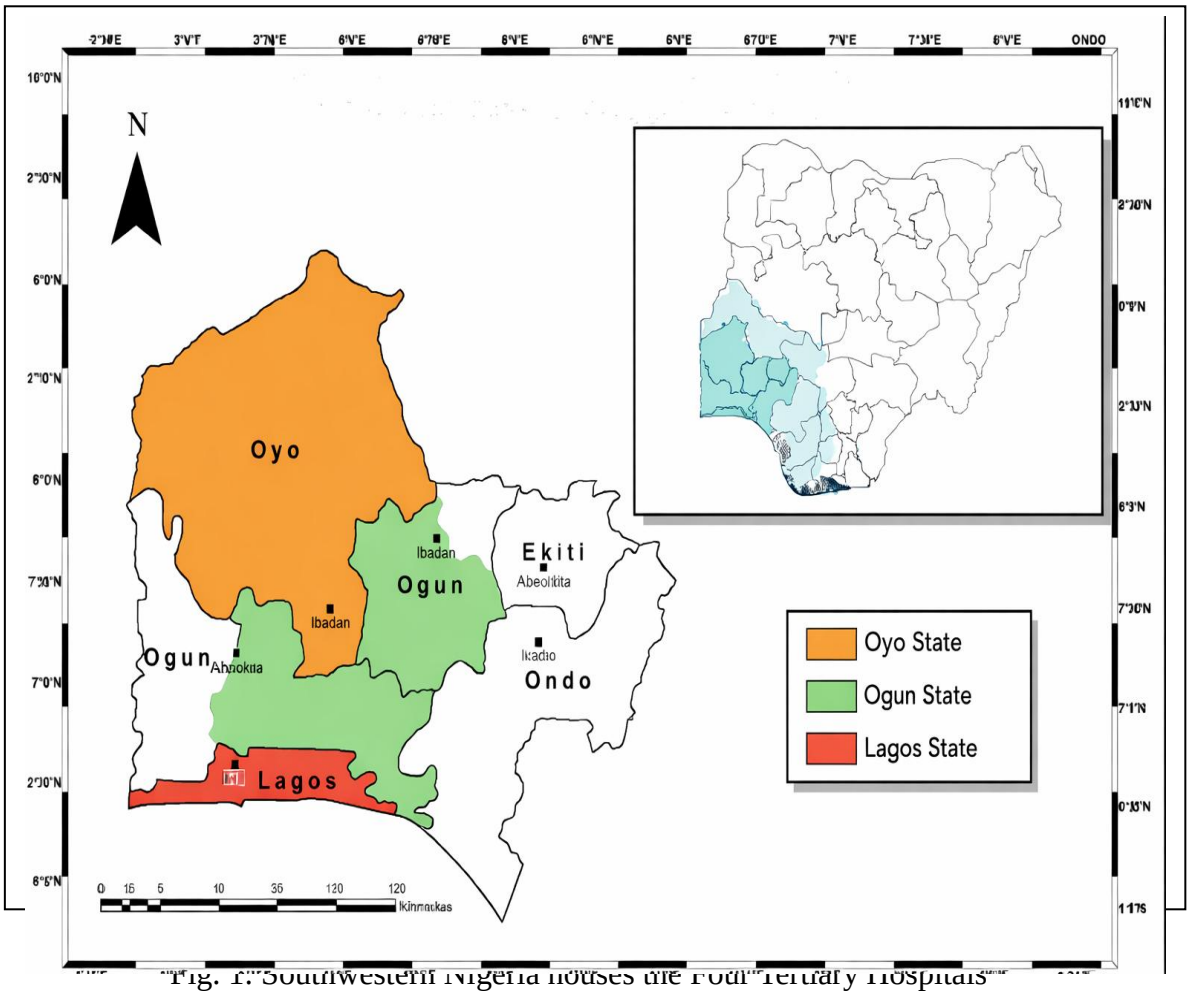

Fig. 1: Southwestern Nigeria houses the four tertiary hospitals

The region is blessed with a good number of hospitals ranging from tertiary to primary health care services. Among the tertiary hospitals, four were purposively selected for the specialized services they render and for the large coverage throughout the country they enjoy. The hospitals include: the Federal Medical Centre (FMC, Abeokuta), Lagos University Teaching Hospital (LUTH, Lagos), National Orthopaedic Hospital (Igbobi, Lagos), University College Hospital (UCH, Ibadan - Figure 2).

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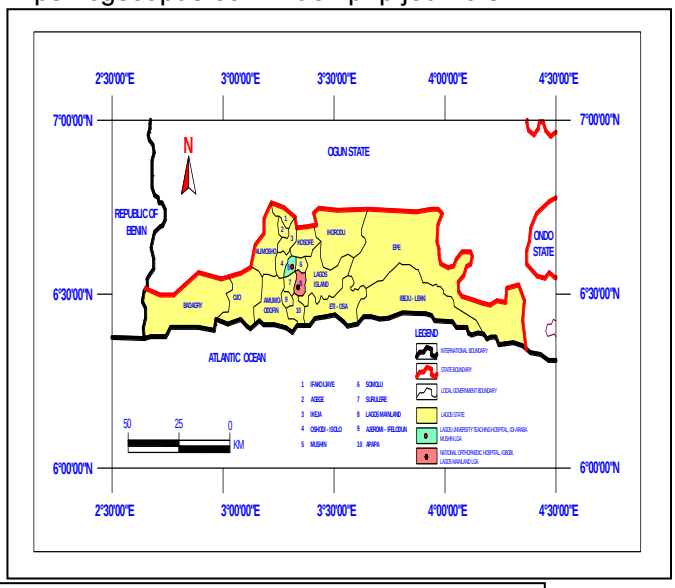
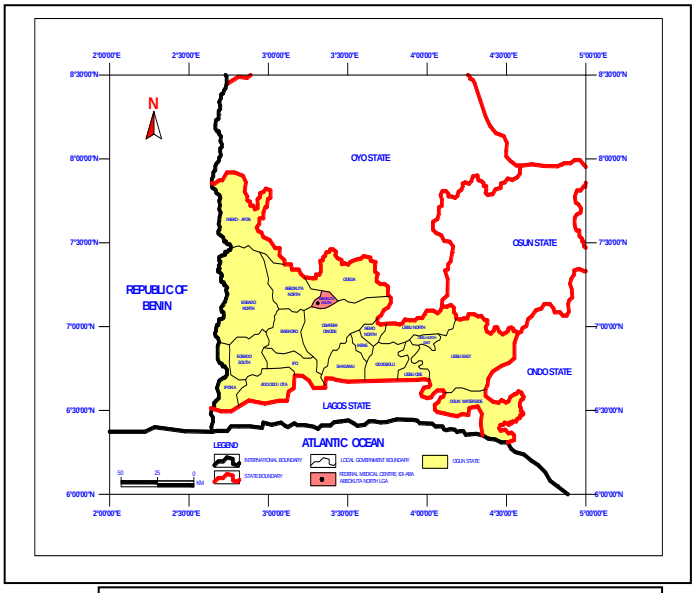
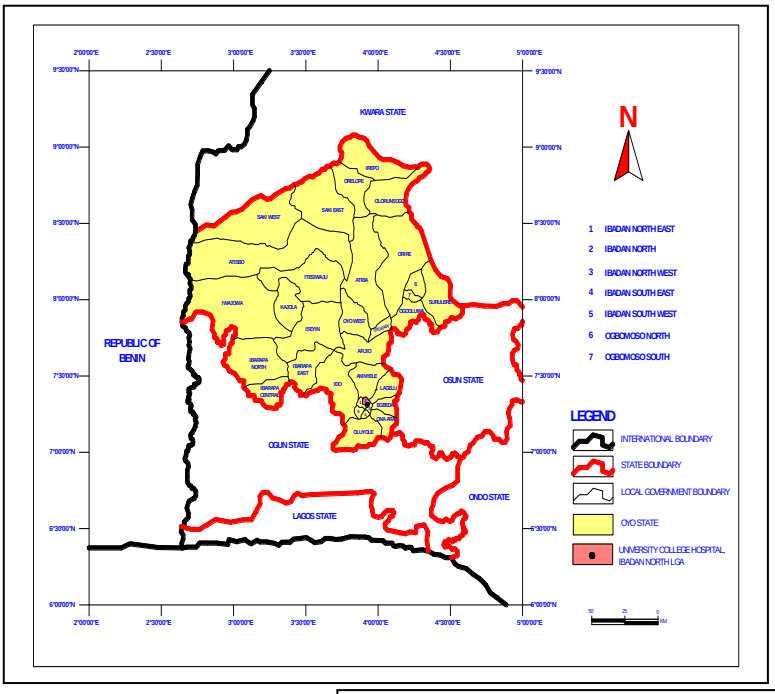


Lagos University Teaching Hospital (LUTH), Idi-Araba and national Orthopedics Hospital (NOHI), Igbobi, Lagos
Source: Adapted from Survey Department, 2025



Federal Medical Centre, Abeokuta
Source: Adapted from Survey Department, 2025



University College Hospital
Source: Adapted from Survey Department, 2025

Economically, Southwestern Nigeria is a major hub of industrial and commercial activity, but also experiences significant income inequality and limited access to formal employment, particularly for vulnerable populations. As Adeyemo et al. (2010) highlighted, reliance on informal economic activities is prevalent, which can be particularly challenging for individuals with TRDs who may face physical limitations and limited access to assistive technologies. The intersection of economic vulnerability and environmental inaccessibility creates a significant barrier to sustainable livelihoods.

2. Methodology

2.1 Sample frame, Sample Size and Data Collection Procedure

The study adopted a mixed method approach using a cross-sectional survey to collect data from respondents with traffic-related disabilities sourced from four selected tertiary hospitals - the National Orthopaedic Hospital Igbobi, (NOHI) Lagos State; Lagos University Teaching Hospital, Idi Aba, Lagos State; the University College Hospital, Ibadan, Oyo State; and the Federal Medical Centre, Abeokuta, Ogun State) - in Southwestern Nigeria. The choice of the study area was due to the high rate of road traffic crashes in the zone (Federal Road Safety Commission (FRSC) (2016). From a sample frame of 10,009, a total of 421 respondents were randomly administered with structured questionnaire on socio-demographics, injury characteristics, and perceived challenges. Key informant interviews were conducted with eight (8) respondents to collect qualitative data. Data collected were analyzed using descriptive statistics such as frequency counts, percentages, mean and standard deviation to describe the socio-economic characteristics of the respondents and their perceived callenges. Welch t-test was used to test for significant difference between male and female in regards to costs of rehabilitation. The qualitative data was analyzed using content analysis.

3. Results and Discussion

This section presents a combination of descriptive, inferential and content analyses of the study's results.

3.1 Indices of Perceived Environmental Barriers to Sustainable Living for Persons with Traffic-related Disability

From the data gathered and as indicated in Table 1 below, reduced income (34.5%), Immobility (30.1%), neglect (20.3%) and non-Inclusive infrastructural (building/road) designs were perceived challenge reported by respondents in the study area. These findings were consistent with the position of Palmera-Suarez et al., (2015) that TRD is associated with greater demand for commuting/accessibility, healthcare, social support and economic challenges. More details on each of these indicators are subsequently discussed.

3.1.1 Reduced Income

Figure 3.1 presents the main reasons for reduced income, which were job loss (31.0%), cost of rehabilitation (26.2%), loss of opportunities for employment (22.8%) and academic setback (20.0%). These findings are consistent with previous studies that have shown that people with disabilities are more likely to be unemployed or underemployed (Loprest & Maag, 2001; Sung & Rois, 2015). The content analysis also revealed that people with TRD

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face a number of challenges related to employment. For example, one respondent reported that he had lost his job after being involved in a road traffic accident. Another respondent reported that she had been unable to find a job because of her disability.

Table 1: Perceived Environmental Barriers/Challenges of Traffic-related Disability

S/N	Indicators	Frequency	Percentage
1.	Reduced income	145	34.5
2.	Immobility	127	30.1
3.	Neglect and social exclusion	86	20.3
4	Non-Inclusive infrastructural (building/road) design	63	15.1
	Total	**421**	**100**

Source: Authors Analysis, 2024

3.1.2 Immobility

In order to adequately understand the extent of the immobility suffered by respondents, figure 3.2. provides additional details on indicators of the immobility issue. These included using wheelchair on public road 32 (25.2%), boarding public transport at bus-stops 33 (26.0%), restricted in-door immobility due to the structural setting of the house 32 (25.2%), and out-door immobility due to physical landscape of the environment 30 (23.6%). These findings corroborate the position of Bezyak et al (2017) that disabled people face difficulty in accessing public transport due to attitude of the public to disability. It is also note worthy that across all the indicators of immobility, more than 6 out of 10 respondents, who use wheelchair on public road, boarding cabs at bus-stop, in-door immobility, out-door immobility as a TRD challenge, were males. In support of the above findings, content analysis further reveals that boarding public transport is a serious task for people with TRD. One of the respondents, a male, aged 32 years with amputated leg was interviewed at LUTH, Idi Araba, Lagos state. Here is his submission:

> "It is a serious task for me to board public transport in my condition. People who are not in my condition are not considerate at all, except sometimes, where one person will secure a seat and then offer it to me. Governmentt should help us".

3.1.3 Neglect and Social Exclusion

In Table 3.1, it was discussed that 86 (20.3%) of respondents suffered neglect. Further details on this are provided in Figure 3.3, which revealed three types of neglect or abandonment: spousal, family and friend. Further more, Figure 3.3 indicates that 48 (55.8%) were neglected by their spouses, 27 (31.4%) by their family members and 11 (12.8%) by their friends. This

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finding alludes to Safia's (2013) position and Holmes and Rabe's (2014) that most of the injured in road crash were rejected by their spouses or received reduced attention and that marital problems can result from any circumstances including health related issues. Content analysis provides additional evidence. A 30 years old female respondent (with a quadriplegia, that is, paralysis of the four limbs) interviewed at UCH, Ibadan Oyo state had this to say:

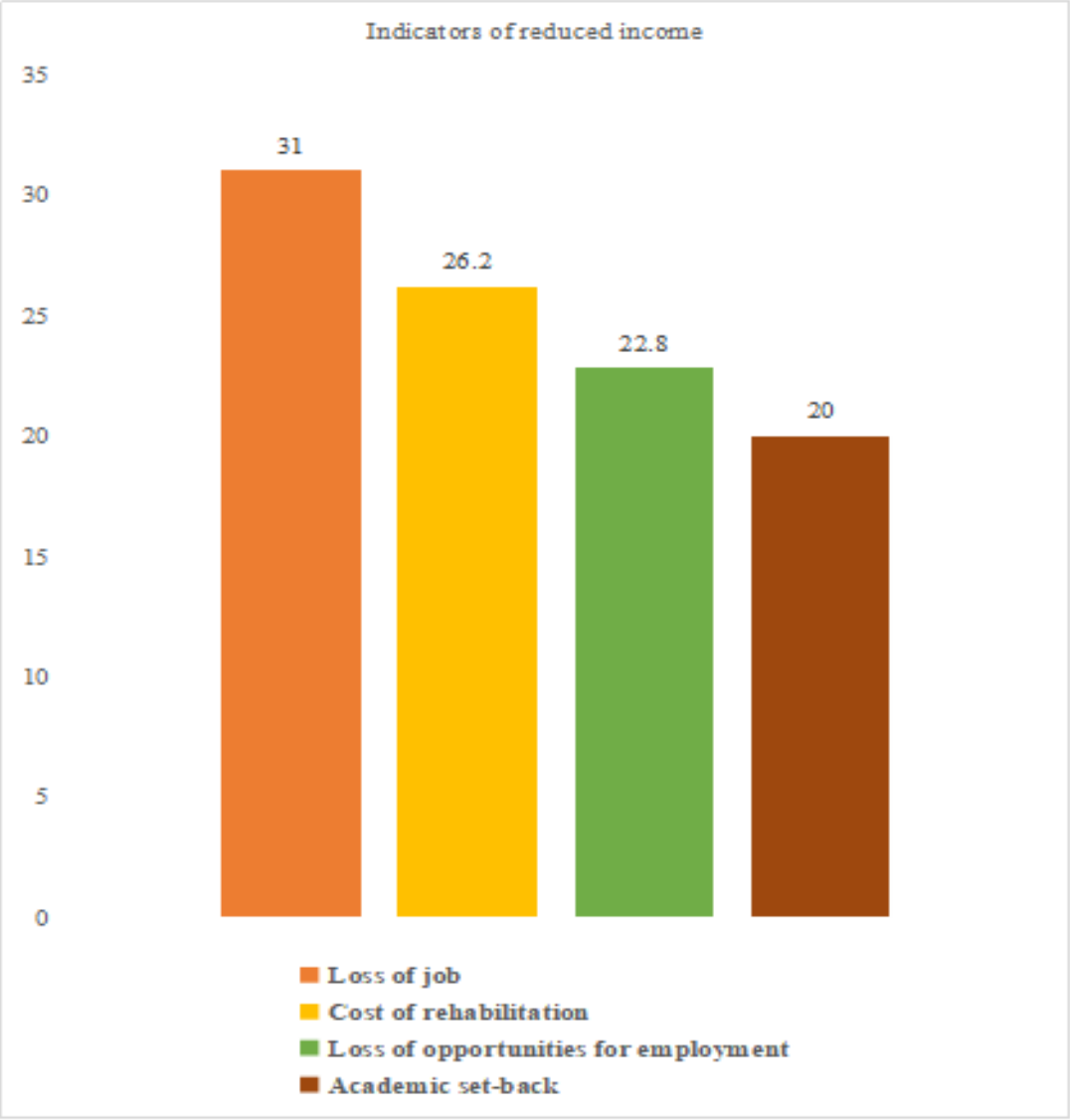

Fig. 2: Indices of Reduced Income

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"There is nothing like being in good health. Since I have been in this condition, I have been depending on others to live my daily life, so I don't have any privacy. I can't go anywhere on my own, someone has to wheel me, and if they are not around, I have to wait till they are around. I am like a baby now. My people do virtually everything for me."

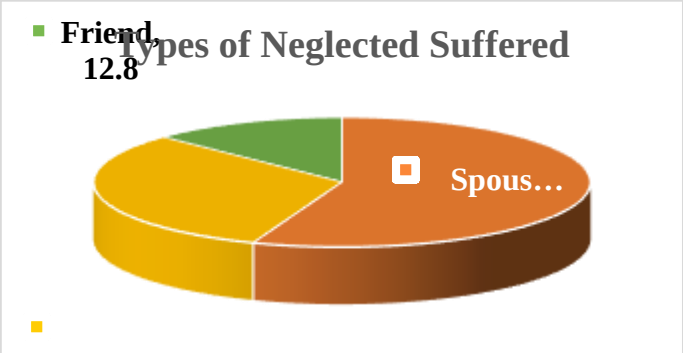

Fig 4: Types of Neglects

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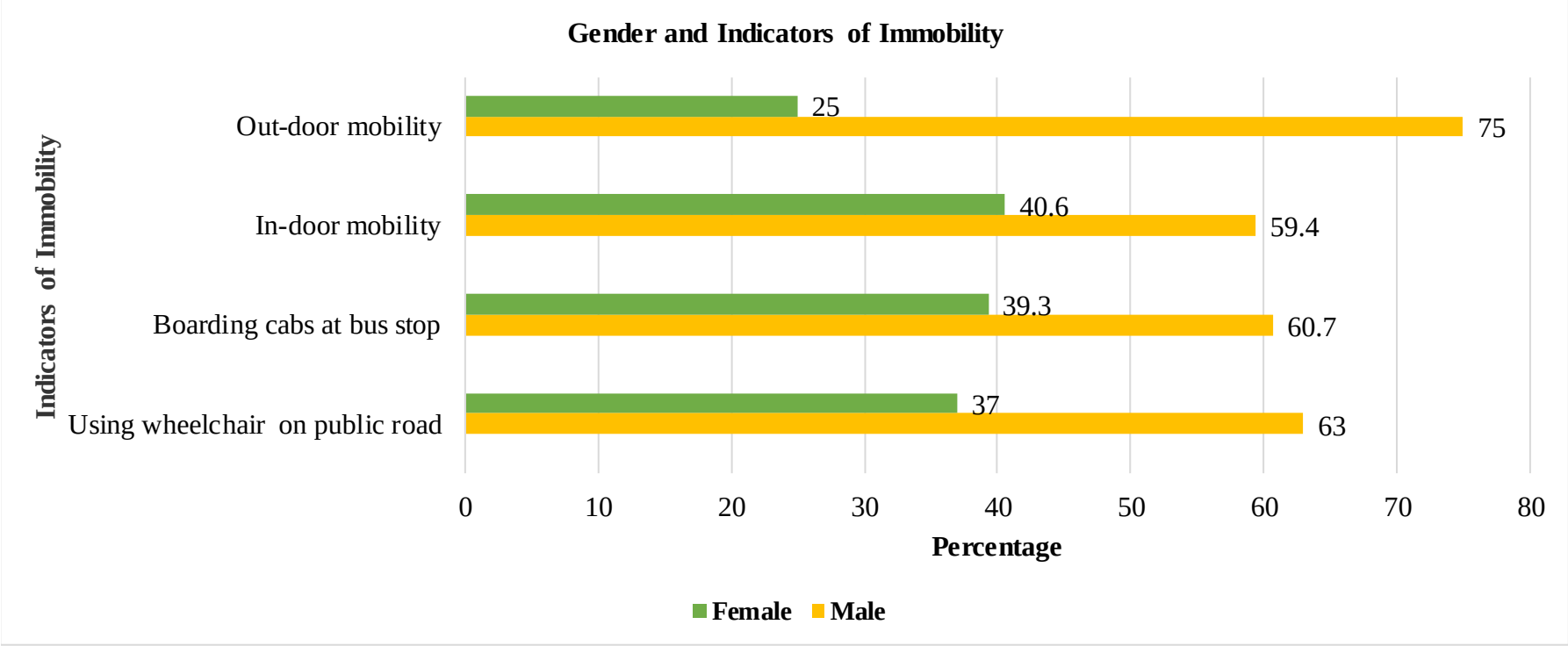

Fig.3: Gender in relation to Immobility

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3.1.4: Non-Inclusive Building Designs in Relation to Gender and Age of Respondents

In Table 1, 63 (15%) of respondents listed non-inclusive building design as one of the indicators of challenges facing the respondents of this study. This section provides more details. The details will feature non- inclusive building design in relation to gender and age of respondents. This is presented in Table 2. Non-inclusive building designs were the fourth most common perceived challenge, with 15.0% of respondents reporting this as a challenge. From qualitative analysis, the most common problems with building designs were lack of ramps, narrow doorways, and inaccessible bathrooms., which is consistent with previous studies that have shown that people with disabilities are more likely to experience environmental barriers (Iwarsson et al., 2006). Table 2 reveals that 18 (64.3%) and 21 (60.0%) males respondents respectively perceived internal design of building and structure of the physical environment as a challenge to their sustainable living. Similarly, 25 (89.3%) and 31(88.6%) adults with TRD noted internal design of building and structure of the physical environment respectively as challenge to their sustainable living. This finding corroborates the submissions of Brandt and Pope (1997:146) and Iwarsson et al. (2006) that environmental barriers are viewed as those negative features of the environment that pose difficulties and constitutes disabling challenge to persons with functional impairment.

Table 2: Gender and Age Versus Non-Inclusive Building Designs

Attribute	Internal Design of building	The structure of the physical environment	Total
Sex			
Male	18 (64.3)	21 (60.0)	39
Female	10 (35.7)	14 (40.0)	24
Total	**28 (100)**	**35 (100)**	**63**
Age			
Non-adult	03 (10.7)	04 (11.4)	07
Adult	25 (89.3)	31 (88.6)	56
Total	**28 (100)**	**35 (100)**	**63**

Source: Author's Analysis, 2024

3.1.5 Cost of rehabilitation

Information in Figure 4 below shows that average monthly spending on rehabilitation was ₦12,981.00 ± ₦5,772.75. This amount covered consultation fee, drugs used, and transport fare to and from clinic. Comparing males with females in terms of monthly spending on rehabilitation, there were no differences in the costs incurred as both genders reported that their minimum spending on rehabilitation was N2,500 and the maximum was ≥N25,000

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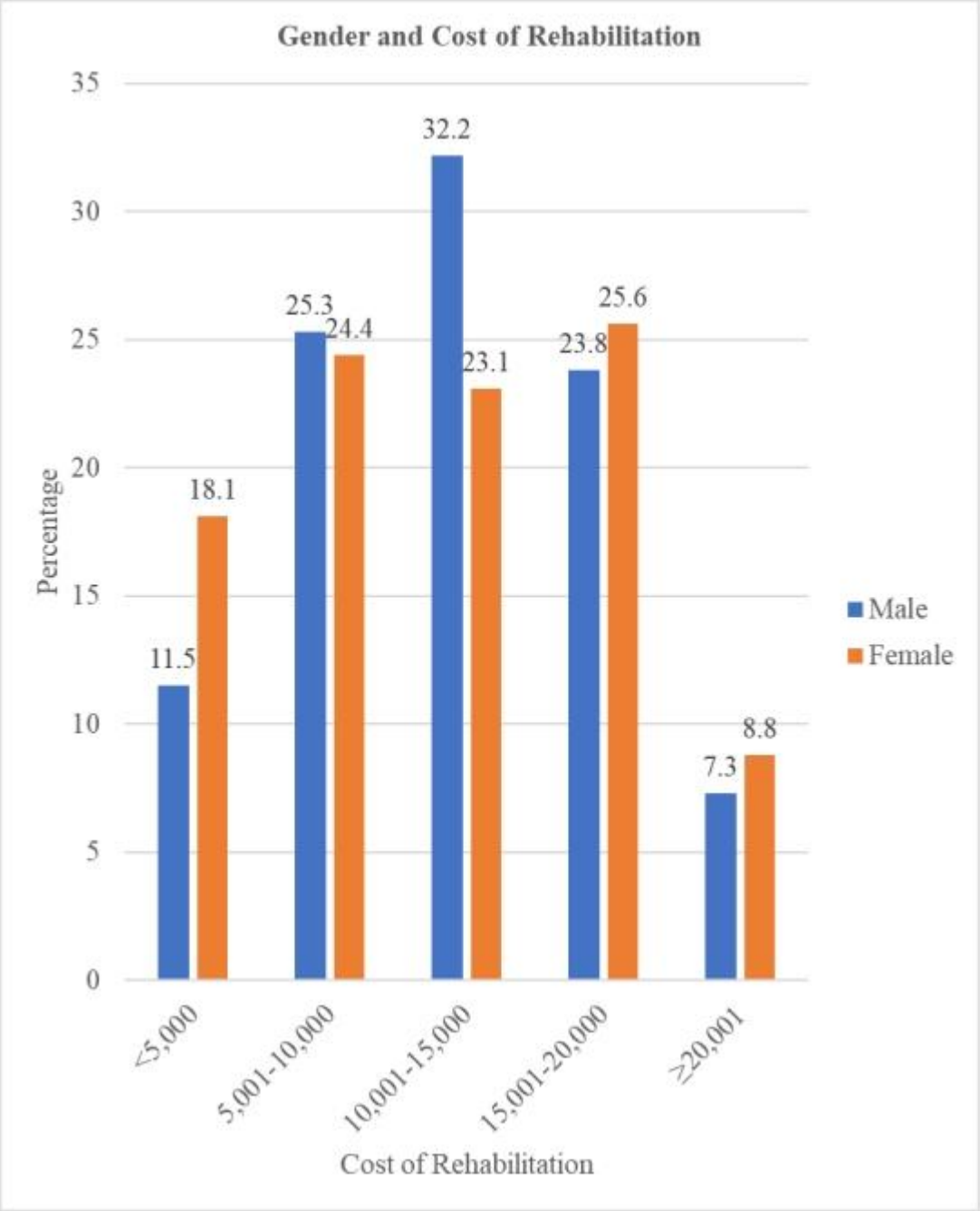

Figure 4: Gender and Costs of Rehabilitation

Furthermore, descriptive analyses in Table 3 seems to indicates that there was no significant difference in the cost of rehabilitation between males (M = 2.9, SD = 1.11) and females (M = 2.8, SD = 1.25. To further confirm this result, Welch t-test was conducted (Tables 4 & 5) to test this hypothesis. Welch's t-test (unequal variance or independent sample t-test Table 4) was carried out due to unequal variances of the two groups (male and female respondents). In Table 5, the results of the Welch's t-test $t(_{307.2}) = 0.393$, $p = 0.531$ reveal that there is no significant gender difference in relation to cost of rehabilitation. The result shows that males' cost of rehabilitation is not significantly different from that of the female counterparts ($t(307.2) = 0.393$, $p = 0.531$). This finding is inconsistent with previous studies that have

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shown that females with disabilities are more likely to experience higher costs of rehabilitation (Loprest & Maag, 2001). However, the current study did not find any evidence to support this claim.

Table 3: Descriptive Analysis of Cost of Rehabilitation

Cost of Rehabilitation	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Cost of Rehabilitation in Interval	421	22500	2500	25000	12980.9976	5772.74961	33324638.050
Valid N (listwise)	421						

Source: Author's Analysis, 2024

Table 4 Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
6.804	1	419	.009

Source: Author's Analysis, 2024

Table 5: Robust Tests of Equality of Means

	Statistic[a]	df1	df2	Sig.
Welch	.393	1	307.202	.531

a. Asymptotically F distributed.

Source: Author's Analysis, 2024

Conclusion and Recommendations

The challenges faced by people with TRDs are often interconnected and mutually reinforcing. For instance, where physical impairment meets with environmental, social and physical barriers, it can lead to economic hardship, thus hampering sustainable living, which in turn can contribute to social isolation and mental health problems. People with TRD face a number of challenges, including environmental/physical, economic, and social challenges. The findings of this study suggests the need for interventions, which should focus on improving access to public infrastructure, rehabilitation services, providing financial assistance, and promoting social inclusion, in order to address these challenges.

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