

## Knowledge, perception and attitude of physiotherapy and medical undergraduates in Nigeria towards people with disability

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### Abstract

**Background:** Knowledge, perception and attitude of healthcare professionals could constitute barriers that could affect healthcare provision for, and social life of People with Disability (PWD). Knowledge, perception and attitude towards PWD was investigated among physiotherapy and medical undergraduates of the University of Ibadan, Nigeria using a mixed-method design.

**Methods:** Knowledge and perception of first and final year physiotherapy and medical undergraduates about PWD were assessed using a validated questionnaire while attitude was assessed using the Attitude Towards Disabled Persons scales (Forms A and O). Focus Group Discussion (FGD) was held with eight purposively selected students from the survey sample. Data were analysed using Man-Whitney U test at  $p$ -value  $< 0.05$ . Transcripts from the discussion were analysed thematically.

**Results:** 187 undergraduates (106 males) aged  $20.35 \pm 2.67$  years participated in the survey. Majority of the participants (88.0%) were knowledgeable about physical disabilities but had poor perception and negative stereotypes about PWD. Only 38 (20.3%) of the participants reported that PWD experienced disparities in accessing healthcare. First-year physiotherapy undergraduates had more positive attitudes towards PWD than first-year medical students (68.2% vs 35.0%,  $p < 0.01$ ) whereas final year medical students had more positive attitude than final year physiotherapy students (68.2% vs 52.6%,  $p = 0.29$ ) on form O. Participants in the FGD believed disability could be socially constructed and not just on account of physical impairments. They considered treating PWD as being more stressful than treating people without disability.

**Conclusion:** Participants had good knowledge, ambivalent attitude and poor perception about PWD. Their perception and attitude could be improved through adequate exposure and contact with PWD.

**Keywords:** Knowledge; perception; attitude; undergraduates; people with disabilities

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## Introduction

Disability refers to the negative aspects of the interaction between an individual (with a health condition) and his/her contextual factors (environmental and personal factors) [1]. About 15% of the world's population live with some form of disability [2]. People with Disability (PWD) constitute one of the poorest, most marginalized and socially excluded groups in any society [3]. They are often subjected to violence, abuse and isolation more than the rest of society and have limited knowledge about their rights or how to access basic services to assist them [4,5]. Negative imagery and language, stereotypes and stigma towards PWD persist in many countries across the world [6]. PWD experience poor levels of health [7], unequal access to health care services and unmet health care needs [8] compared with the general population. They often encounter attitudinal and environmental barriers when trying to access healthcare services [9]. Knowledge and attitude of service providers are important environmental factors that affect all aspects of service provision to PWD [2].

Attitude plays an important role in the quality of care rendered by healthcare professionals [10]. Negative attitude of healthcare professionals has been reported to be an important barrier to accessing healthcare among PWD [2,11]. They cited negative attitudes and behaviors of healthcare professionals as the most formidable barrier to accessing healthcare [12]. Communication difficulties between PWD and health-care providers are also frequently reported source of concern [13]. In the review by Katz and Hayout [14], it was alluded to that healthcare professionals view PWD negatively. Negative health provider's attitudes could result in rendering inferior healthcare services and lead to less aggressive treatments even in the face of an acute medical problem [15]. PWD reported that healthcare providers are insensitive and unware of their needs [16]. It has been suggested that attitude of medical practitioners towards PWD are formed during their training [17]. Unfortunately, training of healthcare professionals does not provide adequate and balanced information about disability and how to relate to PWD [18]. Hence, many healthcare professionals were not adequately prepared to meet the needs of PWD [19].

Attitude of students in different healthcare disciplines towards PWD have been extensively reported in the literature [20-23]. Most of these studies were conducted in high income countries and may not reflect the attitude of health professionals

in low- and middle-income-countries like Nigeria. The few studies conducted so far in Nigeria were conducted among specific groups of healthcare students and were from different regions and culture. For instance, Vincent-Onabajo and Malgwi [24] investigated the attitude of physiotherapy students only in Northern Nigeria while Ajuwon *et al* [25] investigated the attitude of medical students only in Southwestern Nigeria. Given the influence of values and culture on attitude, it is important to compare the attitude and perception of health care professions students with similar culture about PWD during their educational program. To the best of our knowledge, no study has compared the attitude of physiotherapy and medical students in Nigeria.

This is important because physiotherapists play an important role in the rehabilitation of PWDs but mostly rely on referral from attending physicians to see patients. In addition, available studies on knowledge and perception of undergraduates about PWD in Nigeria were conducted using survey instruments alone. We investigated the knowledge, perception and compared the attitude of physiotherapy and medical students of the University of Ibadan, Nigeria, towards PWD using a mixed-method study. Using this study design, allowed participants to express their perceptions about PWDs from their own point of view, thereby encouraging in-depth understanding of the perception and attitude of participants.

## Methods

This convergent mixed-methods study (cross-sectional survey and exploratory qualitative study) involved first and final year physiotherapy and medical undergraduates of the University of Ibadan, Nigeria. Data was collected concurrently. Participants for the cross-sectional survey were recruited using proportional and convenience sampling techniques. Physiotherapy and medical undergraduates with mobility disabilities were excluded from the study. The study is reported in line with the Good Reporting of A Mixed-Methods Study (GRAMMS) guideline [26].

The total population of first and final year physiotherapy and medical undergraduates of the University of Ibadan as at the time of this study was 332 comprising 35 first- and 32 final year physiotherapy undergraduates and 146 first- and 119 final- year medical undergraduates. Minimum

sample size for the study was calculated using the formula:

$$n = \frac{N}{1+N(e)^2} \quad \text{where } N = 332 \text{ and } e = 0.05$$

$$n = 182$$

Proportional sampling was then used to determine the minimum number of first and final year physiotherapy undergraduates and first and final year medical undergraduates to be recruited for the survey as 20 and 18, and 80 and 66 respectively. The study was approved by the University of Ibadan/University College Hospital Joint Health Research Ethics Committee (UI/EC/18/0484). The purpose and rationale for the study was carefully explained to the participants and informed consents obtained.

A content-validated questionnaire was used to obtain information about the knowledge of participants about PWD. Items for the questionnaire were devised from a similar questionnaire used by the United Nations Children's Fund (UNICEF) to assess the knowledge of the public about children with disabilities in Turkey [27]. The Questionnaire was validated for content coverage and relevance by lecturers in the Department of Physiotherapy, University of Ibadan who are knowledgeable in instrument development before its use. The validated questionnaire comprises two sections. Section A consisted of items eliciting socio-demographic data such as age, sex, department of study and level of study of the participants. Section B had core items assessing participants' knowledge about people with disability. All items' responses were summarized in proportions and percentages.

Attitude of the students towards PWD was assessed using the Attitudes Towards Disabled Persons (ATDP) scales [28]. Two ATDP scale forms were used in this study. Forms A, made up of 30 items, assesses the degree to which PWDs are considered different from other individuals [29]. Form O, comprising 20 items, assesses the differences in emotional and social inclusiveness and expectations of PWD. The items of the scales are graded on a 6-point Likert scale from -3 to +3 indicating "I disagree very much" to "I agree very much". The scales are reliable, and possess good construct and content validity [30]. Each scale takes about 15 minutes to administer. The obtainable range of score for Form O is from 0 to 120. Scores are subsequently categorized into: 0-60 (negative attitude) and 61-120 (positive attitude). The range of scores for form A is from 0-180. Scores are categorized into: 0-90 (negative attitude) and 91-180 (positive attitude). These categories were used for

this study. The questionnaires for the survey were hand-distributed to the final year physiotherapy and medical undergraduates at their Hall of residence and were self-administered by the participants. Questionnaires were distributed to the first-year students at the lecture theatre where they usually receive lectures. Questionnaires were collected immediately upon completion by one of the researchers (OMS). Data collection spanned February to September, 2019.

#### *Exploration of perception of physiotherapy and medical undergraduates about PWD*

Eight undergraduates, (four males; four females), were invited for a Focus Group Discussion (FGD) by OMS. OMS was a final year physiotherapy undergraduate as at the time of this study and resides in the same hostel as the final year students. She also approached the first-year students and invited them for the FGD. The FGD was moderated by a lecturer in the Department of Physiotherapy who had direct link with only the final year physiotherapy students as their lecturer. A focus guide comprising semi-structured, open-ended questions was used to facilitate the discussion. Probes from the moderator and comments from the discussants were used to further stimulate the discussion. Discussion was audio-taped and field notes were also taken. The FGD lasted about 90 minutes. Qualitative data was collected concurrently with quantitative data.

#### **Data analyses**

Data from the cross-sectional survey was entered, cleaned and analysed using the Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics was used to summarize survey data. Questionnaires with missing data were excluded from analyses. Mann-Whitney U test was used to compare attitude scores between first year and final year physiotherapy undergraduates; between first year and final year medical undergraduates; between first year physiotherapy and medical undergraduates and between final year physiotherapy and medical undergraduates. The level of significance was set at p-value < 0.05.

Data from the FGD was transcribed verbatim by a transcriptionist. The transcripts were coded and thematically analysed using the deductive approach by a professional qualitative data analyst. Transcripts and coding were compared and jointly validated by the researchers. Three themes emerged based on frequency and relevance to the objective of the study.

## Results

Data from the quantitative and qualitative aspects of the study were merged to produce a full description of the knowledge and perception of physiotherapy and medical undergraduates about PWD. Two hundred and ten copies of questionnaires were distributed to eligible participants. However, 190 copies of the questionnaires were retrieved giving a response rate of 90.5%. A total of 187 questionnaires, from 22 (11.8%) first year physiotherapy undergraduates, 19 (10.2%) final year physiotherapy undergraduates, 80 (42.7%) first year medical undergraduates and 66 (35.3%) final year physiotherapy undergraduates, were analysed. Three questionnaires were excluded from the analysis because they had missing values.

susceptible to societal risks and dangers than other children without disabilities. One hundred and fifty-seven (84.0%) participants agreed that the society and the government have a responsibility to restructure schools and jobs to meet the needs of PWD. Four-fifths (n=150; 80.2%) of the students agreed that there should be a legislation for the protection of the rights of PWD in Nigeria.

[Insert table 2 near here]

Government and her officials, the healthcare systems and families of children with disabilities were expected to be most responsible for improving the quality of life and ensuring social inclusion for PWD by 132 (70.6%), 114(61.0%) and 104(55.6%) of the participants respectively. Majority of the participants (n=144,77.0%) were willing to

**Table 1:** Socio-Demographic Characteristics of the Participants (N = 187)

| Variable       | Category                 | N   | %    |
|----------------|--------------------------|-----|------|
| Sex            | Male                     | 106 | 56.7 |
|                | Female                   | 81  | 43.3 |
| Age            | < 17 years               | 3   | 1.6  |
|                | 17 – 23 years            | 164 | 87.7 |
|                | > 23 years               | 20  | 10.7 |
| Department     | Physiotherapy            | 41  | 21.9 |
|                | Medicine and Surgery     | 146 | 78.1 |
| Level of Study | 1st Year Physiotherapy   | 22  | 11.7 |
|                | 1st Year Medicine        | 80  | 42.8 |
|                | Final Year Physiotherapy | 19  | 10.2 |
|                | Final Year Medicine      | 66  | 35.3 |

Participants were aged between 16 and 29 years with a mean age of 20.35±2.6 years. Most of the participants (n=106; 56.7%) were males (Table 1). Majority of the undergraduates were knowledgeable about physical disability. People with mobility disabilities from congenital or acquired neurological conditions, total loss of vision and complete loss of auditory sense were considered as PWD by 178(95.2%), 179 (95.7%) and 175(94.1%) participants respectively.

Most of the participants (n=131, 70.1%) indicated that PWD were mostly excluded from professional life. Only about a fifth (n=38; 20.3%) reported that PWD were excluded from healthcare services (Table 2). The undergraduates in this study obtained information about PWD from multiple sources. The most frequently used source of information (n=144; 77.0%) was the media (TV, newspaper, radio, internet). Majority of the participants (n=170, 90.9%) believed PWD are

**Table 2:** Knowledge of Participants on Areas of Exclusion of People with Disability (N = 187)

| Area of Exclusion | Yes<br>n (%) | No<br>n (%) |
|-------------------|--------------|-------------|
| Education         | 97 (51.9)    | 90 (48.1)   |
| Health            | 38 (20.3)    | 149 (79.7)  |
| Social Life       | 124 (66.7)   | 62 (33.3)   |
| Professional Life | 131 (70.1)   | 56 (29.9)   |
| Home              | 21 (11.2)    | 166 (88.8)  |
| All               | 27 (14.4)    | 160 (85.6)  |
| None              | 9 (4.8)      | 178 (95.2)  |

support actions proposed to support or improve the lives of PWDs. Common phrases often used by participants to describe PWD were: sad/unhappy (n=114; 61.0%), insecure (n=111; 59.4%) and depressed (n=103; 55.1%). In addition, participants perceived PWD as dependent (n=167; 89.3%), unsociable (n=178; 95.2%), pessimistic

(n=165,88.2%), and as people without strong character (n=152; 81.3%).

There was a significant difference between the attitude scores of first year physiotherapy

**Table 3:** Participants' Scores on Attitude Towards Disabled Persons (ATDP) Forms O and A

| Attitude Scores | Physiotherapy UG (N = 41) |                     | Medical UG (N = 146) |                     | Total (N = 187)<br>n (%) |
|-----------------|---------------------------|---------------------|----------------------|---------------------|--------------------------|
|                 | 1st Year<br>n (%)         | Final Year<br>n (%) | 1st Year<br>n (%)    | Final Year<br>n (%) |                          |
| <b>ATDP O</b>   |                           |                     |                      |                     |                          |
| Positive (> 60) | 15(68.2)                  | 10(52.6)            | 28(35.0)             | 45(68.2)            | 98(52.4)                 |
| Negative (≤ 60) | 7(31.8)                   | 9(47.4)             | 52(65.0)             | 21(31.8)            | 89(47.8)                 |
| Total           | 22(100)                   | 19(100)             | 80(100)              | 66(100)             | 187(100)                 |
| <b>ATDP A</b>   |                           |                     |                      |                     |                          |
| Positive (> 90) | 15(68.2)                  | 15(78.9)            | 42(52.2)             | 46(69.7)            | 118(63.1)                |
| Negative (≤ 90) | 7(31.8)                   | 4(21.1)             | 38(47.5)             | 20(30.3)            | 69(36.9)                 |
| Total           | 22(100)                   | 19(100)             | 80(100)              | 66(100)             | 187(100)                 |

Key: UG - Undergraduates

Just above half of the participants (n=98; 52.4%) had positive attitude towards PWD on the ATDP O scale, while almost two-thirds of the participants (n=118; 63.1%) had positive attitude towards PWD on the ATDP A scale. Less than half of the first year students (n=43; 42.2%) in both courses of study had positive attitude towards PWD whereas almost two-thirds of the final year students (n=55; 64.7%) had positive attitude on ATDP O scale (Table 3). Similarly, less than half of the first-year students (n=45; 44.1%) in both courses of study had positive attitude towards PWD while about three-fifths (n=61; 71.8%) of final year students had positive attitude on ATDP A scale. More first year physiotherapy students than first year medical students had positive attitude on both forms O and A (68.2% vs 35.0% and 68.2% vs 52.5% respectively).

students and first year medical students ( $p < 0.01$ ) on form O (Table 4). Contrarily, no significant difference ( $p = 0.09$ ) was found between the attitude scores of first year physiotherapy and first year medical undergraduates on form A (Table 4). More final year medical students had positive attitude compared to final year physiotherapy students (68.2% Vs 52.6%) on form O, whereas more final year physiotherapy students had positive attitude on the ATDP A compared to the final year medical students (78.9% Vs 69.7%). There was however, no significant difference in the attitude of the final year physiotherapy and medical undergraduates on both forms (Table 4).

Comparison of attitude between levels on the same program indicated that more first year physiotherapy students had positive attitude towards

**Table 4:** Within- and between-groups comparison of participants' scores on the attitude towards disabled persons (ATDP) Forms O and A (N = 187)

| Variables                     | First Year<br>(N=102) | Final Year<br>(N=85) | U-value | p-value |
|-------------------------------|-----------------------|----------------------|---------|---------|
| <b>Form O</b>                 |                       |                      |         |         |
| Physiotherapy Students (N=41) | 22                    | 19                   | 174.00  | 0.36    |
| Medical Students (N=146)      | 80                    | 66                   | 1544.50 | <0.01*  |
| U-value                       | 485.50                | 538.00               | -       | -       |
| p-value                       | <0.01*                | 0.35                 | -       | -       |
| <b>Form A</b>                 |                       |                      |         |         |
| Physiotherapy Students (N=41) | 22                    | 19                   | 181.00  | 0.46    |
| Medical Students (N=146)      | 80                    | 66                   | 2049.00 | 0.02*   |
| U-value                       | 674.00                | 526.50               | -       | -       |
| p-value                       | 0.09                  | 0.29                 | -       | -       |

\*significant at  $p < 0.05$

PWDs on ATDP O than final year physiotherapy students (68.2% Vs 52.6%). More first year physiotherapy students had negative attitude (31.8%) compared to final year physiotherapy students (21.1%) on ATDP A. The difference in attitude score between first year and final year physiotherapy students was however, not significant (p>0.05). More final year medical students had positive attitude than first year medical students on both forms O and A (Table 3).

There was a significant difference (p<0.05) between the attitude scores of first year medical students and final year medical students on the ATDP O and A (Table 4). Overall, 25(61.0%) physiotherapy undergraduates had positive attitude while 73(50.0%) medical undergraduates had positive attitude on ATDP O scale (Table 3), whereas, 30(73.2%) physiotherapy undergraduates had positive attitude on ATDP A while 88(75.9%) medical undergraduates had positive attitude on ATDP A scale.

**Perception of Physiotherapy and Medical Undergraduates about PWD**

Eight students (4 males) aged 18.75±2.55 participated in a FGD to further explore the knowledge, perception and attitude of physiotherapy and medical undergraduates towards PWD. Participants were identified as discussants(D) 1, 2, 3 to 8 for anonymity (Table 5).

physical or mental. One of the participants stated that:

*“disability is a defect or having a defect in certain body parts... like in the legs for example, the legs could be crippled and in the eyes when you can’t see. Body part issues basically, they have an impairment one way or the other...issues with one part of the body” (D1, medical student, 1st Year, 17years, Male)*

This was corroborated by other participants:

*“a disability is like an impairment to normal body function, it can be acquired from birth or maybe acquired during a person’s lifetime...a disabled person is someone who the defect has actually limited or impaired the person in a particular way. sometimes that might be what makes it obvious to people, so to an extent it has affected the person maybe physically or mentally” (D7, medical student, 1st Year, 17years, Female)*

*Someone that has an obvious challenge, you can refer to the person as someone with disability” (D5, medical student, 1st Year,17years, Male)*

Some of the discussants expressed that disability is defined by the society. Thus suggesting a social construct dimension to disability. A discussant argued that though the society defines disability, impairments contribute to the development of disability:

*“I think disability is what society calls disability. It’s society that makes something a disability.*

**Table 5:** Socio-demographic characteristics of participants in the focus group discussion (N = 8)

| Participants | Sex    | Department    | Age | Level of study |
|--------------|--------|---------------|-----|----------------|
| D1           | Male   | Medicine      | 17  | 100            |
| D2           | Male   | Physiotherapy | 21  | 500            |
| D3           | Male   | Medicine      | 23  | 600            |
| D4           | Female | Physiotherapy | 21  | 500            |
| D5           | Male   | Medicine      | 17  | 100            |
| D6           | Female | Physiotherapy | 18  | 100            |
| D7           | Female | Medicine      | 17  | 100            |
| D8           | Female | Physiotherapy | 16  | 100            |

Three themes emerged from the discussion. Specific quotations for each theme are as stated below:

**Theme 1: Disability is more than just physical impairment**

All eight participants posited that disability is a defect or an impairment in normal body function. They indicated that these impairments could be

*Sometimes, it’s not actually the presence of impairment or something like that, if the society, environment is not conducive for such, it makes it a disability” (D5, medical student, 1st Year, 17years, Male)*

*“well, I agree with what he said but I won’t rule out the aspect of impairment. Impairment is a major aspect of disability because there is usually no reason why the society will see something as disability if*

*there is no initial reason such as impairments, so I won't rule out the fact that impairment is a major contributor to disability (D4, Physiotherapy student, Final Year, 21years, Female)*

A discussant opined that the society had a set standard of normalcy and therefore, regards any deviation from this standard as disability. According to this participant, deviation from normalcy might not be an impairment of bodily structure or function:

*"I think there is a set standard of normalcy that people ...that the laws fit people into... the criteria of normalcy as seen as being disabled..." (D2, physiotherapy student final year, 21years, male)*

This assertion was corroborated by another participant who also opined that perception of disability has a lot to do with what considered normal by the society:

*"and it's like some people view disability as being less than the normal standard that you feel ... people should be" (D7, medical student, 1st year, 17years, female)*

According to a discussant, the standard of human normalcy was promoted largely by the media and the society;

*"it is basically about the societal perception of what normalcy is. The society, I mean the media mostly, are the promoters of abnormal, dis-normal. Dis-normal is totally deviating from normal ...they are like a continuum. So the worst one is abnormal, disnormal is still close to normal but the criteria is sort of vague, ...It's just what the society thinks (D2, physiotherapy student final year, 21years, male)*

### **Theme 2: Perception of Participants about People with Disability**

Participants held different stereotypical perception about PWD. While trying to describe these perception as formed by the society, the attitude and mannerism of some of the participants indicated that they also held such perceptions. For example, a discussant while describing her aunty was visually impaired described her as emotionally challenged and dependent because of her visual disability:

*"I have an aunty that is blind. She started having emotional issues, she felt, she could see before and then now she has a problem with her eyes, so she always low, moody, she doesn't feel good. People have to be with her to support her and encourage her..." (D6, physiotherapy student, 1st year, 16years, female)*

The discussants unanimously agreed that people with disabilities experienced a lot of name calling and were often described with unpleasant words:

*"Actually, I remember but I have a second cousin who has intellectual disability. I have not exactly met him but at a family gathering, I remember somebody describing him as "arindin" (imbecile) or something like that and I try to correct the person that it is not the boy's fault... He just needs special care and attention that's all" (D4, physiotherapy student, final year, 21years, female)*

*"PWDs are stigmatized and discriminated against in different regions of Africa...the society is not inclusive for PWD. The roads and buildings are not disability friendly and accessible for PWD.... comparing it to developed countries that are more inclusive. In Nigeria, having disability is almost like being close to end of life, it's like you are useless, you are a nobody and you don't have any worth" (D2, physiotherapy student, final year, 21years, male)*

### **Theme 3: 'Treating People with Disability could be Stressful'**

The discussants were presented with a clinical vignette of two patients including one with disability, with similar clinical conditions and asked who they would readily attend to in the clinic. This was with a view to accessing participants' attitude towards PWD.

Some discussants expressed that treating PWD could be stressful and they would prefer not treat PWD:

*"yes, I'll rather not treat them because it's too much hassle dealing with them...with the disability burden" (D3, medical Student, final year, 23years, male)*

*"I'll go with his opinion; I'll treat the person without disability because it is more stressful to treat people with disabilities" (D6, physiotherapy, 1st year, 17years, female)*

A discussant also stated further that the medical complication of disability already put PWD at a lesser chance of survival than the persons without disability.

*"Normally it's easier to look after a patient without disability and it has been shown that disability may complicate a medical condition, it's harder to tell the patient to even turn around and it's usually more stressful handling patients with disabilities. It's even harder to carry out tests, they may have lost a limb..., and it's just harder to treat them" (D3, medical student, final year, 23years, male)*

Other participants held a contrary view. They believed that the choice of who to treat is an ethical issue:

*“NO, NO, NO!!! I’m not allowed to neglect another patient for the other, the ethics of the profession won’t allow that. I’ll go with equity. Whoever has a higher chance of survival between PWD and person without disability is the person. I’ll treat I believe that is the method used in emergency, the triage method, treat the person that can survive” (D2, physiotherapy student, final year, 21years, male)*

*“yes, I’ll treat the PWD no matter how stressful it will be. I’ll treat PWD...” (D1, medical student, 1st year, 17years, male)*

*“treating the PWD is better though it’s actually stressful but if you leave them, they might feel neglected and that is a problem.... psychological imbalance” (D5, medical student, 1st year, 17years, male).*

## Discussion

Participants in this study were knowledgeable about PWDs. Majority of the participants agreed that people with loss of vision, loss of auditory sense, missing limbs, physical distortions, paralysis and people who were wheelchair-bound were physically disabled. This was also alluded to by participants in the focus group discussion. This is in line with the report by WHO [2], that PWD are people with impairments which could be physical, mental or sensory. Participants however, did not consider people with mild to moderate visual or auditory impairments as being physically disabled. This could be because these people were not societally or environmentally perceived as disabled in our community. Disability is a complex phenomenon, reflecting an interaction between features of a person’s body and features of the society in which he/she lives [2]. The use of visual or hearing aids does not greatly reduce participation in the Nigerian society as much as mobility impairments. This could have influenced participants’ knowledge.

The majority of the undergraduates in this study felt that PWD were not more excluded from healthcare than their non-disabled counterparts. This was rather surprising and indicated a high level of unawareness of the well-documented healthcare disparities faced by PWD. It has been reported that PWDs were not largely viewed as requiring public health attention [31]. Yet, studies have reported disparities in healthcare access and delivery among PWD [7,8,32]. This finding suggests a need for education on the social determinants of health as it relates to PWD. The major source of information

about PWDs among participants in this study was the media (TV, newspapers, radio, internet, etc.) rather than everyday life experience and public institutions. The media often project a negative imagery and stereotypes of PWDS. Providing interactive contact hours between PWD and medical and physiotherapy undergraduates during their training could broaden their knowledge of PWD beyond what is glean from the media.

Majority of the participants posited that PWD were more susceptible to risks and dangers within the society compared with people without disabilities. Previous studies had similarly reported that PWD are often susceptible to violence, abuse and isolation from the rest of the society [3,4]. It was unanimously agreed upon that the society and the government had a responsibility to restructure schools and jobs to be inclusive and meet the needs of PWD. The rights and privileges of PWD in Nigeria had largely been neglected until recently when the Federal Government passed the Discrimination Against Persons with Disability (Prohibition) Act of 2019 in January, 2020. The participants largely agreed that the government had a responsibility to provide accessible buildings, public transportation system and schools for PWDs. This suggests a positive attitude towards inclusivity and improving access for PWD among participants. Further, participants were willing to advocate for PWD. According to Miller [32], health care providers become effective advocates for PWD when they are knowledgeable and aware of the needs of PWD.

More than half of the participants perceived or described PWD as sad/unhappy, insecure and depressed. PWD were perceived as dependent, unsociable, pessimistic, and with weak character. These negative stereotypes and stigma are often associated with PWD by most non-disabled people globally [6]. It has been reported that PWD are the most marginalized and socially excluded groups in any society based on poor perception by people [3]. This finding was corroborated by one of the participant in the FGD who perceived PWD as emotionally challenged because of their disability. This perception was expressed in a way that was derogatory rather than empathetic. This negative view was expressed by a first year student. This is also in congruence with findings from a previous study, that medical students tend to describe PWD with depersonalised and negative words prior to a disability course [15]. Poor perception of prospective healthcare provider about PWD could lead to provision of low quality healthcare to PWD.



More than half of the students had an overall positive attitude towards PWD on the ATDP scales. Earlier studies reported similar findings among medical and physiotherapy students [21,24,25,33]. Contrary to the results from the survey, most participants in the FGD would rather not treat PWD. They stated that it would be more stressful than treating people without disability. This opinion reflected disparity, discrimination and unfavourable attitude towards PWD. Our findings reveal that less than half of the first year students had positive attitude towards PWD compared with more than half of the final year participants who had positive attitude. This correlates with the findings from previous studies that reported significant changes in attitude of students towards PWD over the course of their study [33,34]. It has been suggested that carefully designed curricula could alter the attitudes of students towards PWD.

Comparison between first year physiotherapy and medical undergraduates on both scales showed that physiotherapy undergraduates had more positive attitude than medical undergraduates. It is common knowledge that physiotherapists play important roles in the rehabilitation of PWD. It is plausible that prospective physiotherapy students obtained more information about PWD while researching about physiotherapy as a course of study. Final year medical students had a more positive attitude compared to the final year physiotherapy students on ATDP O scale. The ATDP O scale assesses differences in emotional and social inclusivity of PWD. The higher scores obtained by the medical students suggests that they had better perception of the emotional capability of PWD.

There is the tendency among rehabilitation therapists including physiotherapist to be sympathetic rather than empathetic with PWD and underestimate the emotional capability of PWD. Conversely, final year physiotherapy students had a more positive attitude compared to the final year medical students on ATDP A scale. ATDP A assesses the extent to which PWD are considered different from other people [29]. The findings of higher scores among physiotherapy undergraduates may be because physiotherapy students had more contact hours with PWD than their medical counterparts. Physiotherapy students of the University of Ibadan undertake specialized postings in care homes and centers for PWD in their penultimate year and take a course on disability issues in their final year whereas medical students do not have such postings.

## Conclusion

Physiotherapy and medical undergraduate of the University of Ibadan had good knowledge about PWD. Their knowledge about disability and PWD should be sustained through more contact hour and interaction with people with disability. The undergraduates have poor perception and their attitude is ambivalent at best. These could be improved upon through adequate exposure to PWDs in their environment or by introducing a more contact-based approach to learning about disability issues. There is need to change the societal influence on disability by raising positive awareness through the media. This will further help improve perception and attitude towards PWD both as individuals and prospective health care practitioners.

## Strengths and Limitations of the Study

Our study is the first mixed-methods study to investigate the perception and attitude of physiotherapy and medical undergraduates in Nigeria towards PWD. The use of a mixed-methods encouraged exploration of the undergraduates' perception of and attitudes towards PWD, thus providing a better understanding of their perception and attitude. This study was conducted among students of the premier University, with the best medical school in Nigeria.

There are however, certain limitations of the study. For instance, there are inherent differences in the curricula of both degree programs and the duration of academic training (5years Vs 6years) which may influence the findings from this study. The questionnaire used for assessing knowledge was only content validated, there was no pilot testing of the instrument. Participants' perceptions were expressed from their point of view which could be influenced by the level of exposure to people with disability and their value system and could vary depending on the type of disability. Further, findings from the survey were based on self-report by participants. This could introduce elements of response bias. Future studies should examine the effect of targeted course on disability on the perception of physiotherapy and medical undergraduates in Nigeria about people with disability.

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