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Attitude toward contact with people with disabilities and knowledge of disability among health science undergraduates in a Nigerian University

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ABSTRACT

Background: This study assessed health sciences undergraduates attitude toward and contact with people with disability (PWD), knowledge of disability (KD) as well as their association with each of gender, ethnicity, level and program of study. **Methods:** Using a stratified random sampling technique, 267 undergraduates of the College of Health Sciences, Obafemi Awolowo University, Ile-Ife, responded to this cross-sectional survey yielding a response rate of 89%. A structured self-administered questionnaire on attitude toward contact with PWDs and KD was used to assess attitude, contact, and knowledge of the respondents. Procedure was explained to respondents who consented for this study and data were subsequently obtained. Data were analyzed using descriptive statistics and inferential statistics at $P < 0.05$. **Results:** About 62.9% of the respondents had positive attitude toward PWDs with the majority being females (68.9%), students of Igbo ethnicity (89.7%), 4th year students (86.1%) and nursing students (70.5%). Over 70% had good KD, however, the majority (91.4%) had little or no contact with PWDs. KD was significantly associated with respondents ethnicity ($\chi^2 = 8.57$; $P < 0.05$) and year of study ($\chi^2 = 38.34$; $P < 0.05$). Furthermore, there was a relationship between the attitude toward PWDs and KD of respondents ($r = 0.24$; $P < 0.001$). **Conclusion:** The authors, therefore, concluded that Nigerian health sciences undergraduates have positive attitude toward PWDs, good KD but low contact with PWDs.

KEY WORDS: Attitude, disability, health science, Nigeria, knowledge, undergraduate

INTRODUCTION

The biopsychosocial framework of the World Health Organization [1] conceptualized disability as a multidimensional phenomenon used to denote the limitation in activity performance and participation restriction that occur during the interaction between people and their environment. For the purpose of this study, disability refers to any decrement in functioning in a chosen set of domains, irrespective of health conditions. Depending on the definition adopted for disability, it is estimated that one in 5 people around the world has a disability. Although, a lower percentage is reported for the Nigeria population with an estimate of 3.2% of her population having a disability resulting from either physical, sensory and/or psychiatric impairments [2]. This may reflect diverse approaches to measuring and defining disability between countries. What is common, irrespective of the definition assumed for disability is that people with disability (PWDs) are disproportionately poor and have historically experienced diverse forms of social exclusion [3]. With the advances and expertise achieve in medical and rehabilitation science as well as the available evidence of its effectiveness, so many people still continues to

live with disabilities across the globe, especially in Africa [4,5]. Population growth, aging, emergence of chronic diseases and medical advances that preserve and prolong life have contributed significantly to this high prevalence of disability. There has been a globally concerted effort toward facilitating the participation and integration of PWDs more fully into the society in recent years. The upsurge of disability rights movement, the establishment of disability discrimination legislation in many countries, and the advent of the UN convention on the rights of persons with disabilities have all contributed to a changing view of disability and the increasing removal of barriers to the participation of disabled people in everyday life. Thus, perceptions of disability are neither fixed nor similar but varied significantly across culture and nations. While several successes have been achieved in the developed countries there have, however, been some drawbacks recorded in developing countries as having a disability in the developing country still exposes the individual to neglect, stigma and discrimination [6]. This invariably limits PWDs access to quality health care, education, employment and other opportunities available within the society. A major reason ascribed for the drawbacks is negative attitude of the society toward PWDs [6-9]. Altman [10] posits that attitude, as reflections of beliefs, shapes the way society describes a person's flaws and impacts the framework within which their behavior occurs. Thus, negative attitudes toward PWDs will often influence PWDs development and the occupational roles they assume within society.

To function optimally within the society, the majority of PWDs receive/need medical, rehabilitative and supportive services from health professionals. For this reason, they rely on the attitudes, knowledge, and decisions of health professionals to gain access to vital services. McDaniel [11] asserts that the attitudes of professionals in rehabilitation are more significant in defining the response of PWDs to rehabilitation/treatment compared to any other factors. To illustrate this, negative attitude and inadequate knowledge of disability (KD) by a health professional may limit the treatment options and alternatives generated for PWDs. Lam *et al.* [12] on the other hand identified not only attitudes and misperceptions about disability, but discomfort with working with PWDs and lack of disability-specific knowledge as important interrelated factors hindering access of PWDs to quality health care. Consequently, health-care professionals could be regarded as the gatekeepers of both information and services in disability management.

Students' training has been avowed to play a vital role in the enculturation of health-care professionals. Since trainees within the health profession will later play key roles in the management of PWD; it is understandable then that attitudinal/disability research is directed toward students as future professionals. Although significant discussion has been devoted to students' attitude toward specific conditions (such as HIV/AIDS, intellectual disability), little effort is directed toward attitude and knowledge regarding disability as a broad phenomenon and construct. Similarly, as views on disability are context-driven and context-specific, there is need to understand these constructs from the Nigerian context. To our knowledge, there is a dearth of studies on attitude toward, contact with PWDs and KD among students who are presumed to have imbibe a biopsychosocial paradigm of disability. Likewise, the relationship of these constructs has not been examined and compared across students from 5 different health-care programs within a training facility. This study, therefore, examined the attitude toward and contact with PWDs as well as KD among undergraduates of 5 different health professions in a Nigerian university.

METHODS

Participants

Students in undergraduates programs of the Department of Medicine, Nursing Science, Dentistry, and/or Medical Rehabilitation in the College of Health Sciences, Obafemi Awolowo University, Ile-Ife, Nigeria, participated in this cross-sectional survey. All of the participants were studying full-time. However, students in their 1st year of study were excluded.

Instrument

A four-fold self-administered questionnaire on attitude toward contact with PWDs and KD was used as survey instrument. The demographic characteristics of the respondents (such as gender, age, ethnicity, program and year of study) were obtained in the first section of the questionnaire. The second section sought information on respondents' attitude toward PWD using the attitude toward disabled persons scale (ATDPS) [13]. The third section used the contact with disabled persons scale (CDP) [14] to assess respondents' contact with PWDs while the fourth section sought information on the precision of the respondents' knowledge about disability using questionnaire KD.

ATDPS

The ATDPS is a 20 item scale that assesses global attitude toward PWDs on a 6-point Likert measure with a total score ranging from 0 (very negative attitude) to 120 (very positive attitude). It uses a one-dimensional single score method to ensure a generalized attitude and not limited by specificity like other attitude scales that only assesses attitude toward a particular disabling condition such as deafness. The ATDPS assumes that PWDs are perceived as being different from, and therefore, inferior to people without disability by individuals in the society. The psychometric properties of the ATDPS have been extensively discussed by Yuker and Block [15]. The scale is documented to be internally consistent with Cronbach's alpha coefficient ranging from 0.83 to 0.85 and reliable with test/retest reliability scores ranging from 0.66 to 0.89. Furthermore, in the Nigerian context, the ATDPS has been utilized in previous studies of attitudes of Nigerians toward persons with disabilities [16,17].

CDP

The CDP is a 20 item scale that assesses the extent of contact an individual has had with PWDs and was originally developed by Yuker and Hurley [18]. The CDP used in this study, however,

is the adapted version by Junco and Salter, [14] which only contains 8 questions out of the original 20 items developed by Yuker and Hurley [18]. It scores contact with PWDs on a 5 point Likert measure with a total score ranging from 8 (low contact) to 40 (high contact). Junco and Salter [14] further reported median Cronbach's alpha coefficients for the 8 items of the adapted CDP at 0.87.

KD Questionnaire

The KD questionnaire is a 6 item measure which was specifically designed for this study to evaluate the precision of knowledge of an individual about disability. The construction of the KD questionnaire was done by the authors. It comprises 6 multiple choice questions such as the various causes and types of disability and equating disability with poor health is normal. Response options were "Yes" and "No." The knowledge score was defined by the addition of correct responses to all the questions. Based on a total knowledge score of 6, knowledge was classified as poor (for a raw score of 0-2), moderate (for a score of 3 and 4), and good (for a score of 5 and 6). The knowledge score was determined by the summation of correct responses to all the questions. The KD questionnaire was validated in a pilot study among 20 undergraduates who were not part of the actual study. Its test-retest reliability yielded a Cronbach's alpha value of 0.74.

Procedure

The Ethics and Research Committee of the Institute of Public Health, O.A.U, Ile-Ife, Nigeria, gave approval for this study. The purpose of the study was explained verbally to respondents. This was further expounded with a written subject information sheet attached to the instrument for data collection which was distributed to the respondents in their respective lecture classrooms. Eligible volunteers gave verbal and signed consent. Using a stratified random sampling technique, 300 copies of the questionnaire were administered by hand to undergraduates in Nursing Science, Physiotherapy, occupational therapy (OT), Dentistry and Medicine degree programs of the College of Health Sciences, O.A.U, Ile-Ife, Nigeria, over a 2 months recruitment period. A total of 267 eligible volunteers responded thereby yielding a response rate of 89%. The majority of the questionnaires were collected on site while those not collected immediately after administration was returned through the respondents' class representatives. 30 copies of the questionnaires were not returned while 12 copies were invalidated because a significant part of the questionnaire was omitted or inappropriate filled.

Data Analysis

Data were summarized using descriptive statistics of mean, standard deviation and percentages. Inferential statistics of Pearson Chi-square was used to determine the association between the sociodemographic data of the respondents and each of the attitude toward PWDs, contact with PWDs and knowledge about disability. Similarly, one-way analysis of variance was used to test for difference in each of the mean score of respondents' attitude toward PWDs, contact with PWDs and knowledge about disability across various levels and program of study. The level of significance was set at 0.05. Data were analyzed using SPSS version 17.0 [19].

RESULTS

The mean age of the respondents was 22.96 ± 2.39 year with the range of 18-32 years. More males compared to females (55.4% vs. 44.6%) responded in this survey. The sociodemographic characteristics of the respondents and frequency distribution of respondents' attitude toward PWDs are presented in Table 1. The majority of the respondents were within the age range of 21-25 (67.4%), without disability (98.9%) and in their 5th year of study (31.1%). The results showed that 62.9% of the respondents had positive attitude toward PWDs. Students that were females (68.9%), from the Igbo tribe (89.7%), in the OT program (83.3%), and those in their 4th year of study (86.1%) exhibited a more positive attitude toward PWDs.

Distribution of respondents' contact with PWDs is presented in Table 2. 8.6% of the respondent had had high contact with PWDs. Higher contact rates were observed amongst males (11.5%), students with disability (100.0%), students in OT program (16.7) and those in their 3rd year of study (20.3%) [Table 2]. The majority of the respondent had had low contact with PWDs (91.4%). Table 3 shows the distribution of

Table 1: Sociodemographic characteristics and frequency distribution of respondents' attitude to PWDs

	Attitude toward PWDs				
Variables	Total *n* (%)	Positive *n* (%)	Negative *n* (%)	χ^2	*P*
Gender					
Male	148 (55.4)	86 (58.1)	62 (41.9)	3.297	0.070
Female	119 (44.6)	82 (68.9)	37 (31.1)		
Age (years)					
≤20	57 (21.3)	34 (59.6)	23 (40.4)		
21-25	180 (67.4)	116 (64.4)	64 (35.6)		
≥26	30 (11.2)	18 (60.0)	12 (40.0)	0.550	0.824
Ethnicity					
Yoruba	212 (79.4)	126 (59.4)	86 (40.6)		
Igbo	29 (10.9)	26 (89.7)	3 (10.3)		
Hausa	1 (0.4)	0 (0.0)	1 (100.0)		
Others	25 (9)	16 (64.0)	9 (36.0)	11.69	0.304
I have a disability					
Yes	3 (1.1)	3 (100.0)	0 (0.0)		
No	264 (98.9)	165 (62.5)	99 (37.5)	1.788	0.182
Program					
Physiotherapy	30 (11.2)	19 (63.3)	11 (36.7)		
Occupational therapy	12 (4.5)	20 (83.3)	2 (16.7)		
Nursing science	78 (29.2)	55 (70.5)	23 (29.5)		
Medicine	115 (43.1)	68 (59.1)	47 (40.9)		
Dentistry	32 (12)	16 (50.0)	16 (50.0)	7.070	0.082
Year of study					
2nd year	51 (19.1)	31 (60.8)	20 (39.2)		
3rd year	59 (22.1)	37 (62.7)	22 (37.3)		
4th year	36 (13.5)	31 (86.1)	5 (13.9)		
5th year	83 (31.1)	53 (63.9)	30 (36.1)		
6th year	38 (14.2)	16 (42.1)	22 (57.9)	15.49	0.238

χ^2: Pearson Chi-square value; *P* value significant at $P<0.05$

respondents' knowledge about disability. The results showed that 71.9% had good knowledge regarding disability. There was higher level of KD among male respondents (75.0%), students that are older than 26 years (80.0%), students in OT program (83.3%) and those in their 6th year of study (89.5%) [Table 3]. This study further showed that respondents' contact with PWDs was significantly associated with their ethnicity ($\chi^2 = 26.4$; $P < 0.05$) [Table 2] while respondents' KD was significantly associated with each of age ($\chi^2 = 8.57$; $P < 0.05$) and year of study ($\chi^2 = 38.34$; $P < 0.05$) [Table 2]. Similarly, significant difference was observed in mean contact score of respondents with PWDs across each of gender ($t = 2.09$; $P < 0.05$); ethnicity ($f = 2.09$; $P < 0.05$), program ($f = 2.09$; $P < 0.05$) and year of study ($f = 2.09$; $P < 0.05$) while respondents' mean knowledge score significantly differ across program ($f = 6.44$; $P < 0.001$) and year of study ($f = 6.40$; $P < 0.001$) [Table 4]. Respondents' KD was found to have a positive relationship with their attitude toward PWDs ($r = 0.24$; $P < 0.001$).

DISCUSSION

A number of factors have been posited in literature (studies conducted over the years) to influence health professional trainees' attitudes and KD which include but are not limited to age, gender, education and training level, occupational classification, contact with PWDs as well as years in practice. The findings from these studies are not directly generalizable as they use research methodologies designed explicitly for the conditions being explored. Likewise, comparison and generalization of attitude to and KD across different culture and context (such as Nigerian vs. American context) might be inappropriate, thus the need for this study. Furthermore, this study is the first to investigate/survey the attitude to and KD as well as contact with PWDs among Nigerian health-care undergraduates across 5 professional disciplines as observed from our review of relevant literature.

The findings showed that most of the health sciences undergraduates have an overall positive attitude toward PWDs. This is consistent with the findings of Tervo *et al.* [20], Boyle *et al.* [21] as well as Sinai *et al.* [22]. Even though students in the OT program, from Igbo tribe and 4th year of study exhibited more positive attitude toward PWDs, this attitude statistically do not differ across nor is it associated with any of their sociodemographic characteristics (age, gender, tribe, program, and level of study). Most sociodemographic characteristic that has been studied over time with regards to attitude toward PWDs has been adduced to be relatively inconsequential [23-25]. More positive attitudes observed across rehabilitation specific program (such as OT, Nursing Science and physical therapy [PT]) might have resulted from their program curricula offering more courses that address disability. For instance, at each level of study considered in this study, at least 2 disability related courses are offered by the students in rehabilitation specific programs as compared with their nonrehabilitation specific discipline

Table 2: Frequency distribution of contact with person's with disability

Variables	Contact with PWDs		χ^2	*P*
	Low contact *n* (%)	High contact *n* (%)		
Gender				
Male	131 (88.5)	17 (11.5)		
Female	113 (95.0)	6 (5.0)	3.48	0.063
Age (years)				
≤20	54 (94.7)	3 (5.3)		
21-25	160 (88.9)	20 (11.1)		
≥26	30 (100.0)	0 (0.0)	5.07	0.794
Ethnicity				
Yoruba	200 (94.3)	12 (5.7)		
Igbo	27 (93.1)	2 (6.9)		
Hausa	1 (100.0)	0 (0.0)		
Others	16 (91.4)	9 (8.6)	26.37	0.000*
Disability				
Yes	0 (0.0)	3 (100.0)		
No	241 (91.3)	23 (8.7)	0.29	0.593
Course of study				
Physiotherapy	30 (100.0)	0 (0.0)		
Occupational therapy	10 (83.3)	2 (16.7)		
Nursing science	67 (85.9)	11 (14.1)		
Medicine	105 (91.3)	10 (8.7)		
Dentistry	32 (91.4)	0 (0.0)	9.82	0.812
Year of study				
2nd year	50 (98.0)	1 (2.0)		
3rd year	47 (79.7)	12 (20.3)		
4th year	34 (94.4)	2 (5.6)		
5th year	83 (100.0)	0 (0.0)		
6th year	30 (78.9)	8 (21.1)	28.90	0.593

χ^2: Pearson Chi-square value; *P* value significant at $P<0.05$, PWDs: People with disability

Table 3: Frequency distribution of knowledge about disability

Variables	Poor	Level of knowledge		χ^2	*P*
		Average	Good		
	n (%)	*n* (%)	*n* (%)		
Total	15 (5.6)	60 (22.5)	192 (71.9)		
Gender					
Male	6 (4.1)	31 (20.9)	111 (75.0)		
Female	9 (7.6)	29 (24.4)	81 (68.1)	2.23	0.144
Age (years)					
≤20	5 (8.8)	19 (33.3)	33 (57.9)		
21-25	10 (5.6)	35 (19.4)	135 (75.0)		
≥26	0 (0.0)	6 (20.0)	24 (80.0)	8.57	0.009*
Ethnicity					
Yoruba	11 (5.2)	43 (20.3)	158 (74.5)		
Igbo	0 (0.0)	12 (41.4)	17 (58.6)		
Hausa	0 (0.0)	0 (0.0)	1 (100)		
Others	4 (16.0)	5 (20.0)	16 (64.0)	13.15	0.073
Disability					
Yes	0 (0.0)	0 (0.0)	3 (100.0)		
No	15 (5.7)	56 (21.2)	193 (73.1)	1.10	0.330
Course of study					
Physiotherapy	0 (0.0)	8 (26.7)	22 (73.3)		
Occupational therapy	2 (16.7)	0 (0.0)	10 (83.3)		
Nursing science	12 (15.4)	22 (28.2)	44 (56.4)		
Medicine	0 (0.0)	24 (20.9)	91 (79.1)		
Dentistry	1 (3.1)	6 (18.8)	25 (78.1)	32.59	0.129
Year of study					
2nd year	1 (2.0)	13 (25.5)	37 (72.5)		
3rd year	7 (11.9)	21 (35.6)	31 (52.5)		
4th year	7 (19.4)	5 (13.9)	24 (66.7)		
5th year	0 (0.0)	17 (20.5)	66 (79.5)		
6th year	0 (0.0)	4 (10.5)	34 (89.5)	38.34	0.002*

χ^2: Pearson Chi-square value; *P* value significant at $P<0.05$

Table 4: Mean score of respondents' attitude toward and contact with PWDs as well as KD

Variables	Attitude toward PWDs		Contact with PWDs		Knowledge about disability	
	Mean score	*P*	Mean score	*P*	Mean score	*P*
Gender						
Male	63.16±12.43		17.55±5.38		34.92±0.91	
Female	64.39±13.03	0.434	16.21±5.03	0.038*	4.73±1.03	0.115
Age (years)						
≤20	63.70±13.39		16.31±5.51		4.61±1.10	
21-25	63.68±12.46		17.30±5.47		4.88±0.96	
≥26	63.87±13.11	0.997	16.07±2.77	0.288	5.00±0.64	0.122
Ethnicity						
Yoruba	62.76±13.46		16.44±4.94		4.87±0.94	
Igbo	68.03±7.83		18.65±4.57		4.79±0.77	
Hausa	60.00±0.00		15.00±0.00		5.00±0.00	
Others	66.84±8.90	0.104	19.40±7.43	0.014*	4.56±1.32	0.762
Disability						
Yes	69.00±2.65		14.67±4.62		4.67±0.58	
No	63.65±12.75	0.469	16.98±5.27	0.450	4.84±0.97	0.653
Program						
Physiotherapy	61.17±9.27		15.00±3.97		4.97±0.72	
Occupational therapy	66.75±8.20		16.92±7.63		4.75±1.36	
Nursing science	65.79±13.39		18.32±5.54		4.40±1.21	
Medicine	62.95±13.05		16.44±5.23		5.06±0.69	
Dentistry	62.56±13.46	0.325	17.31±3.91	0.030*	5.00±0.88	0.000*
Year of study						
2nd year	64.27±15.10		15.78±4.64		4.91±0.81	
3rd year	64.71±11.88		18.46±6.57		4.51±1.19	
4th year	66.19±7.79		17.81±4.94		4.39±1.29	
5th year	61.92±10.08		16.07±3.85		5.11±0.72	
6th year	62.95±18.16	0.458	17.31±6.17	0.028*	5.08±0.54	0.000*

t-test was used for mean score analysis; *P* value significant at $P<0.05$, PWDs: People with disability

(medicine and dentistry) that offers one or none. Exposure of health-care students to a longitudinal curriculum for caring for PWDs has a positive influence on comfort with and attitudes toward PWDs [26,27]. The curriculum of OT, Nursing science and PT programs accentuate the fundamental worth of PWDs thus resulting in the more positive attitude demonstrated by students in these programs. This suggests the need for further education and training of student in the nonrehabilitation specific program on disability and presumably a review of the medical and dental program curriculum. Professional education can provide experiences to influence the attitude of students in these programs. Cultural differences could have accounted for the more positive attitude demonstrated by students from the Igbo tribe. Diverse belief systems may result in varying attitudes and praxis relating to disability [28]. Likewise, at the 4th year of study, students commence their clinical training and exposure to patients in their various departments, this could have brought about the more positive attitude they showed at this level.

One interesting finding from this study is that the students' positive attitude to disability did not translate into having more contact with PWDs as the students indicated an overall low contact with PWDs. Similar study conducted among teacher trainees reported a higher rate of contact with PWDs [29] and health-care students [30]. Cultural differences might have accounted for this variation observed in our results. Often times disabilities are seen as an affliction from the gods thus leading to stigmatization and participation restriction in communal activities (such as education and leisure activities) of PWDs. This could have resulted in the low contact rate shown by the students. Consistent exposure of individuals within the society to PWDs has been avowed to result in full respect and inclusion consistent with disability rights principles [31-35]. However, when contact is nonexistent or insignificant, it may results in negative stereotypes of PWDs. In another vein, contact with PWDs in a rehabilitation setting compared with a social/personal setting may provide less positive effects on the attitude of health-care students as rehabilitation settings may reveal an individual's insufficiencies and disabilities rather than abilities. The health-care students' contact with PWDs was further observed to be influenced by/associated with ethnicity and to differ across each of gender, ethnicity, program as well as year of study. Tribal and cultural differences across the various ethnicities in the acceptance of PWDs as well as stigmatization could partially have explain the association observed between ethnicity and contact as well as the mean contact score difference across ethnicity.

The health-care students demonstrated an overall good KD. This is in some way consistent with the findings of Haskell [36] who reported that social work students have an average self-perceived KD. Inadequate self-perceived knowledge about intellectual disability was, however, found among psychiatrist by Werner *et al.* [37]. The various disciplines explored in this study have disability related courses offered in their curricula, it is therefore not strange that such courses would have informed the good knowledge they demonstrated. When disability related courses are, however, taught from the diagnostic viewpoint of medical model, it may have little or no effect on students' knowledge of the disabled population [38]. The result further

showed that the health-care students' age and level of study were associated with their KD. As the student advances in age and their program of study, they become more exposed to disability related issues which would have improved and informed their knowledge. Higher rates of good knowledge among students in their 6th year of study and those older than 26 years of age further buttressed this argument. The above reasons could also be adduced for the differences observed in the mean knowledge score across the various disciplines and level of study. Male and OT students had more accurate KD compared to female and other student population in this study. Higher rates of contact and positive attitude toward PWDs indicated by this set of students could have influenced their knowledge.

Knowledge and experience related to disability by health-care professionals has been avowed to influence the quality of care rendered to PWDs. Often times, when knowledge and experience of health professional is inadequate, they exhibit/display discriminative or inappropriate behavior resulting from stereotypes and wrong assumptions. This is affirmed in this study as the health-care students' KD was observed to positively influence their attitude toward PWDs.

CONCLUSION

Nigerian health science undergraduates had a positive attitude toward PWDs, good KD but low contact with PWDs. Contact with PWDs was significantly influenced by ethnicity while knowledge about disability was significantly associated with age and higher level of study. Furthermore, attitude toward PWDs was positively influenced by KD.

Limitations

The findings from this study may under report the attitude toward and contact with PWDs as well as KD as the respondents were medical and health science undergraduates who may be knowledgeable about these constructs. It is adduced that a similar study in the general population of students may give a different result. However, findings of this study may serve as reference report for studies on attitude toward and contact with PWDs as well as knowledge about disability in the Nigerian context. Replication of similar study among the general undergraduate population in different tertiary institutions is suggested.

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