

# **PERCEPTION OF PHYSIOTHERAPY STUDENTS TOWARDS SPECIALIZATION IN GERIATRIC PHYSIOTHERAPY IN SOUTH-WEST NIGERIA**

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## ABSTRACT

**Background:** As the global geriatric population increases, so does the demand for specialized physiotherapy services to address the unique health challenges of older individuals. However, there is a growing shortage of geriatric physiotherapist specialists, which may adversely affect the care of elderly individuals at risk of chronic conditions, immobility, and falls.

**Aim of the Study:** The study aimed to explore the perception of physiotherapy students towards specialization in Geriatric Physiotherapy, in South-West Nigeria

**Materials and Methods:** This is a cross-sectional survey involving 264 clinical physiotherapy undergraduates in South-West Nigeria. Participants were assessed using a questionnaire, adapted from a previous similar study. Data was analyzed using descriptive statistics and inferential statistics of Chi-square test, at  $<0.05$  level of significance.

**Results:** The participants' mean age was  $21.85 \pm 2.174$  years, with majority being males (53%). Majority (65.4%) had attended lectures on geriatrics or had clinical experience in the management of geriatric patients. There was a moderate level of interest in geriatrics specialization (17.7%) while job accessibility (29.7%) and potential salary (33.1%) were the top motivators of specialization in geriatrics physiotherapy. Clinical experience (22.9%) was the most significant factors that influenced participants' opinion on geriatric physiotherapy. There was no significant

association between the perception of the clinical physiotherapy undergraduates towards specialization in geriatrics physiotherapy and the sociodemographic variables- gender ( $p=0.473$ ), age ( $p=0.469$ ), level of study ( $p=0.776$ ) and school (0.128).

**Conclusion:** Clinical physiotherapy undergraduates generally value geriatric sessions and show moderate interest in specializing in geriatrics and there was no significant association between their perception and sociodemographic variables.

**Keywords:** Perception, Physiotherapy, Specialization, Geriatric Physiotherapy.

## INTRODUCTION

Physiotherapy plays a critical role in restoring and maintaining functional abilities, as well as enhancing the quality of life of older adults, particularly those with frailty or disabling impairments<sup>1</sup>. As the prevalence of age-related conditions such as musculoskeletal and neuro-degenerative disorders rises, the demand for specialized geriatric physiotherapy services is expected to increase significantly<sup>1,2</sup>. Physiotherapists engage in a variety of treatment approaches aimed at increasing mobility, preventing injuries, and supporting functional independence in older individuals<sup>3,4</sup>. This comprehensive approach is essential, particularly given the physical decline that accompanies ageing, which includes muscle strength loss, reduced stamina, balance, and bone density<sup>5</sup>.

As the geriatric population faces an increased risk of falls, functional decline, and chronic diseases, engaging in regular physical exercise has been shown to mitigate these age-related physiological changes, enhance cognitive function, and preserve the capacity for Activities of Daily Living (ADLs)<sup>6</sup>. Physiotherapists are essential in geriatric care, providing fall prevention strategies, pain management, post-operative rehabilitation, and promoting independent living<sup>7,8,9</sup>. The expanding the role of physiotherapy in the care of older adults highlights the need for more specialized training and expertise.

Despite the growing need for geriatric physiotherapy, the profession is experiencing a shortage of physiotherapists specializing in this field<sup>10</sup>. Studies reveal that while older adults represent a significant portion of patients requiring physiotherapy, physiotherapists that specialize in geriatric care are few<sup>3,11</sup>. Additionally, studies have indicated that positive clinical placements can enhance students' perceptions of geriatric physiotherapy and potentially increase interest in this specialty<sup>12</sup>. However, this area often ranks lower in preference compared to more popular specialties such as sports or musculoskeletal physiotherapy<sup>13</sup>.

The global rise in life expectancy and the increasing geriatric population have created a heightened demand for specialized geriatric physiotherapy services to address the complex healthcare needs of older adults<sup>14</sup>. This shortage of physiotherapists

specializing in geriatrics, may negatively impact the quality of life and functional independence of elderly individuals, who are at an increased risk of chronic conditions, falls, and immobility<sup>10,15</sup>. In Nigeria, where the ageing population is increasing, understanding the perceptions of physiotherapy students toward geriatric physiotherapy is critical for shaping future healthcare services. Also, research focusing specifically on the perception of physiotherapy students towards specialization in geriatric physiotherapy is sparse. This knowledge gap is crucial for developing educational programmes and strategies that can incentivize students to pursue this specialty. Inadequate study data on physiotherapy students' career preferences hampers effective workforce planning and presents a significant barrier to addressing the healthcare needs of Nigeria's ageing population.

This study, therefore, aimed to explore the perception of physiotherapy students towards specialization in geriatric physiotherapy in South-West Nigeria

## **MATERIALS AND METHODS**

### **Study Design**

This study was a cross-sectional study involving 264 students selected from physiotherapy departments in seven universities in South-West Nigeria. The sample size was calculated using Slovin's formula<sup>16</sup> to give a sample size of 264. Quota sampling method was used to recruit clinical physiotherapy undergraduates for

this study from the various physiotherapy departments in universities in South-West Nigeria.

**Study Area:** Participants in this study were clinical physiotherapy undergraduates from the various physiotherapy departments in universities in South-West Nigeria (Bowen University, Iwo; Chrisland University, Ogun State; Obafemi Awolowo University, Ife; Redeemers University, Ede; University of Ibadan, Ibadan; University of Lagos, Lagos; University of Medical Sciences, Ondo State).

**Study Population:** The participants of this study were clinical physiotherapy students, who were aged 15 years and older. The participants excluded from this study were undergraduate students who had suspended studies or taken a gap year. Consent was obtained from each of the participants after the aims of the study had been explained to them. The participants' sociodemographic variables (gender, age, training institution, and level of study) were documented.

**Ethical approval:** This study was approved by Bowen University Teaching Hospital (BUTH) Health Research and Ethics Committee (HREC) (BUTH/REC-1112).

### Research Instruments

A modified version of the questionnaire developed by Marques et al.<sup>17</sup> titled "Perception of Final Year Physiotherapy Students on Specialization in Cardiorespiratory Physiotherapy" was used

to obtain data from the students on their perceptions and towards specialization in geriatric physiotherapy. The questionnaire was adapted and validated. In Section A, questions on 'cardiopulmonary' placements were replaced with questions on "geriatric" placements while in Section C, questions on interest in specialization in 'cardiopulmonary' physiotherapy were replaced with questions on interest in specialization in 'geriatric' physiotherapy. The questionnaire consisted of 3 sections: clinical placement information, physiotherapy career intentions, interest or not in geriatric physiotherapy specialization, opinions of geriatric physiotherapy, and general questions and suggestions. Most questions were of a closed or categorical nature, using 5-point Likert scales, but offering participants an opportunity to comment openly where appropriate.

### Data Analysis

Descriptive statistics of frequency count, percentage, range, mean, standard deviation, and charts were used to summarize participants' sociodemographic data and their perceptions towards specialization in geriatric physiotherapy. Inferential statistics of the Chi-square test of association were used to determine the association between selected socio-demographic variables (age, gender, institution of training, and level of study) and the perception of the participants' students towards specialization in geriatric physiotherapy. The alpha level was set at 0.05.

## RESULTS

### Socio-Demographic Profiles

A total of 264 clinical physiotherapy undergraduates (53% males; mean age=  $21.85 \pm 2.174$  years) from seven physiotherapy departments in universities in South-West Nigeria participated in this study. The university with the highest number of participants was Bowen University, Iwo (30.5%) and majority of the participants (51.9%) were in their penultimate year (Table 1).

### Geriatric lectures or geriatric physiotherapy clinical experience of participants

Approximately 65.4% of the participants had attended lectures on geriatrics or had clinical experience in the management of geriatric patients. These sessions were most frequently held during the fourth year of study (40.6%) and primarily occurred in institutional settings like teaching hospitals (24.8%) and general hospitals (11.7%). The perceived value of these sessions was mixed, with 25.9% finding them very valuable, while a smaller group (2.3%) found them not valuable at all. Enjoyment levels followed a similar pattern, with 18.8% rating the experience as very enjoyable (Table 2).

### Participants' responses regarding career intentions in specializations in Physiotherapy

With respect to career intentions in physiotherapy specializations, the interest was highest in sports physiotherapy (36.5%)

and orthopaedics physiotherapy (29.7%) respectively as participants expressed strong interest ("very much"). On the other hand, interest was lowest in specialization in community physiotherapy (10.5%) Geriatrics specializations had a more moderate level of interest, reflecting a diverse range of preferences among the participants for their future careers (very much:17.7%; Somewhat (24.1%). Table 3 shows the participants' career intentions across various physiotherapy specialties.

### Participants' knowledge on geriatrics physiotherapy

Prior to entry into the physiotherapy programme, majority (52.6%) of the students were unaware of the role of physiotherapy in the management of geriatric conditions. A significant number (74.8%) did not have a clear idea of the specialty they wanted to pursue upon qualification. However, at their current stage, most of them (45.5%) had identified a specialty of interest, with sports physiotherapy (11.3%) and orthopaedics physiotherapy (10.5%) being the most popular choices. When asked about their interest in specializing in geriatrics physiotherapy, approximately half of them (50.4%) were unsure, indicating a potential for future specialization with proper exposure and guidance. Table 4 provides insights into participants' knowledge and awareness of geriatrics physiotherapy.

### **Factors influencing decision to consider specializing in geriatrics physiotherapy**

Job accessibility (29.7%) and potential salary (33.1%) were the top factors that could strongly motivate specialization in geriatrics physiotherapy. Field experiences and interest in the field were also important, with most of the participants rating these factors highly (23.3% and 21.8% respectively). However, research potential and influence from others were less compelling, with lower percentages of participants (12.8% and 11.3%) considering them as decisive factors (Table 5).

### **Factors that serve as deterrents to working in geriatrics physiotherapy after graduation**

The most common deterrent was a greater interest in another area of physiotherapy (22.6%). Poor job availability in the desired location (12%) and the potential for a better salary in another physiotherapy field (16.5%) were also significant factors. A smaller percentage (7.5%) reported that negative experiences in geriatrics physiotherapy could deter them, while 8.3% were certain they wanted to specialize in this field and would not be deterred (Figure 1).

### **Factors influencing opinion on geriatrics physiotherapy**

Clinical experience (22.9%) and evidence in the literature (18.4%) were the most significant factors that influenced participants' opinion on geriatric

physiotherapy as the students expressed that these factors were "very much" impactful. Peers, clinical instructors, and geriatrics lecturers were also influential but to a lesser degree, with these factors receiving mixed responses in terms of their impact on shaping participants' opinions. The data suggests that direct experience and academic resources are key in forming opinions on this specialization (Table 6).

### **Association between sociodemographic variables of physiotherapy students and their perception towards specialization in geriatrics physiotherapy**

There was no significant association between the perception of the clinical physiotherapy undergraduates towards specialization in geriatrics physiotherapy and the sociodemographic variables: gender ( $p=0.473$ ;  $X^2=1.499$ ), age group ( $p=0.469$ ;  $X^2=3.558$ ), level of study ( $p=0.776$ ;  $X^2=0.507$ ) and school ( $p=0.128$ ;  $X^2=17.604$ ) (Table 7).

Table 1: Sociodemographic variables for participants

Sociodemographic variable		Mean $\pm$ S.D	Minimum	Maximum
Age(years)		21.85 $\pm$ 2.174	18	30
		Frequency	%	
<b>Gender</b>	Male	141	53.0	
	Female	125	47.0	
<b>Age groups (years)</b>	18-21	132	49.6	
	22-25	115	43.2	
	26-30	19	7.1	
<b>School</b>	Bowen University	81	30.5	
	Chrisland University	19	7.1	
	Obafemi Awolowo University	41	15.4	
	Redeemers University	38	14.3	
	University of Ibadan	21	7.9	
	University of Lagos	29	10.9	
	University of Medical Sciences	37	13.9	
<b>Level of study</b>	400	138	51.9	
	500	128	48.1	



Table 2: Geriatric lectures or geriatric physiotherapy clinical experience of participants

Variable		Frequency	%
<b>Have you had physiotherapy lecture or practical sessions in geriatrics</b>	No	92	34.6
	Yes	174	65.4
<b>If Yes,</b>			
<b>How many weeks?</b>	4 weeks	43	16.2
	<4weeks	57	21.4
	> 4 weeks	85	32.0
<b>In what year?</b>	300	42	15.8
	400	108	40.6
	500	30	11.3
<b>In what setting</b>	Federal Medical Centre	23	8.6
	Federal Teaching Hospital	26	9.8
	General Hospital	31	11.7
	In your training institution	66	24.8
	State Teaching Hospital	42	15.8
<b>I found my geriatrics physiotherapy lecture or practical valuable to my geriatrics physiotherapy knowledge</b>	Neutral	54	20.3
	Not at all	6	2.3
	Not really	18	6.8
	Somewhat	43	16.2
	Very much	69	25.9
<b>I found my geriatrics physiotherapy lecture or practical enjoyable</b>	Neutral	65	24.5
	Not at all	15	5.6
	Not really	15	5.3
	Somewhat	47	17.7
	Very much	50	18.8



**Table 3: Participants responses regarding career intentions in specialization in Physiotherapy**

Specialty	Frequency (%)									
	Neutral		Not at all		Not really		Somewhat		Very much	
	n	%	N	%	n	%	N	%	N	%
<b>Paediatrics</b>	93	35.0	42	15.8	30	11.3	50	18.8	51	19.2
<b>Community</b>	95	35.7	41	15.4	50	18.8	52	19.5	28	10.5
<b>Orthopaedics</b>	87	32.7	17	6.4	22	8.3	61	22.9	79	29.7
<b>Women's health</b>	84	31.6	42	15.8	34	12.8	60	22.6	46	17.3
<b>Neurology</b>	75	28.2	22	8.3	41	15.4	73	27.4	55	20.7
<b>Geriatrics</b>	88	33.1	28	10.5	39	14.7	64	24.1	47	17.7
<b>Cardiopulmonary</b>	76	28.6	35	13.2	44	16.5	61	22.9	50	18.8
<b>Sports</b>	65	24.4	16	6.0	22	8.3	66	24.8	97	36.5
<b>Others</b>	107	40.2	50	18.8	24	9.0	50	18.8	35	13.2

**Table 4: Participants knowledge on geriatrics physiotherapy**

Variable		Frequency	%
Prior to commencing your Physiotherapy study/practice, were you aware that Physiotherapists have a role in the management of geriatrics problems?	No	140	52.6
	Yes	126	47.4
Prior to beginning your Physiotherapy study/practice, did you know what specialty/area within Physiotherapy you wanted to work in upon qualification?	No	199	74.8
	Yes	67	25.2
If yes, what areas	Community	4	1.5
	Geriatrics	2	0.8
	Neurology	8	3.0
	Orthopaedics	18	6.8
	Paediatrics	6	2.3
	Sports	26	9.8
	Women's health	3	1.2
At this present stage of your study/practice, do you know what specialty/area within Physiotherapy you want to work in upon qualification?	No	145	54.5
	Yes	121	45.5
If yes, what areas	Cardio	12	4.5
	Community	2	0.8
	Geriatrics	7	2.6
	Neurology	21	7.9
	Orthopaedics	28	10.5
	Paediatrics	13	4.9
	Sports	30	11.3
	Women's health	3	1.2
After becoming a registered physiotherapist will you consider specializing in geriatrics s physiotherapy at some stage in your career?	I may be interested in specialising but I am unsure at this time	134	50.4
	No, I am not interested in specialising in geriatrics s physiotherapy at any stage	88	33.1
	Yes, I am definitely interested in specialising at some stage in my career	44	16.5

Table 5: Factors influencing decision to consider specializing in geriatrics physiotherapy

Specialty	Frequency (%)									
	Neutral		Not at all		Not really		Somewhat		Very much	
	n	%	n	%	N	%	n	%	N	%
<b>Job accessibility</b>	40	15.0	12	4.5	9	3.4	41	15.4	79	29.7
<b>Potential salary</b>	32	12.0	4	1.5	15	5.6	43	16.2	88	33.1
<b>Field experiences</b>	47	17.7	8	3.0	11	4.1	53	19.9	62	23.3
<b>Interesting aspect of field</b>	43	16.2	11	4.1	22	8.3	46	17.3	58	21.8
<b>Research potential</b>	46	17.3	20	7.5	33	12.4	48	18.0	34	12.8
<b>Influence from others</b>	44	16.5	29	10.9	36	13.5	42	15.8	30	11.3
<b>Others</b>	44	16.5	38	14.3	30	11.3	40	15.0	28	10.5

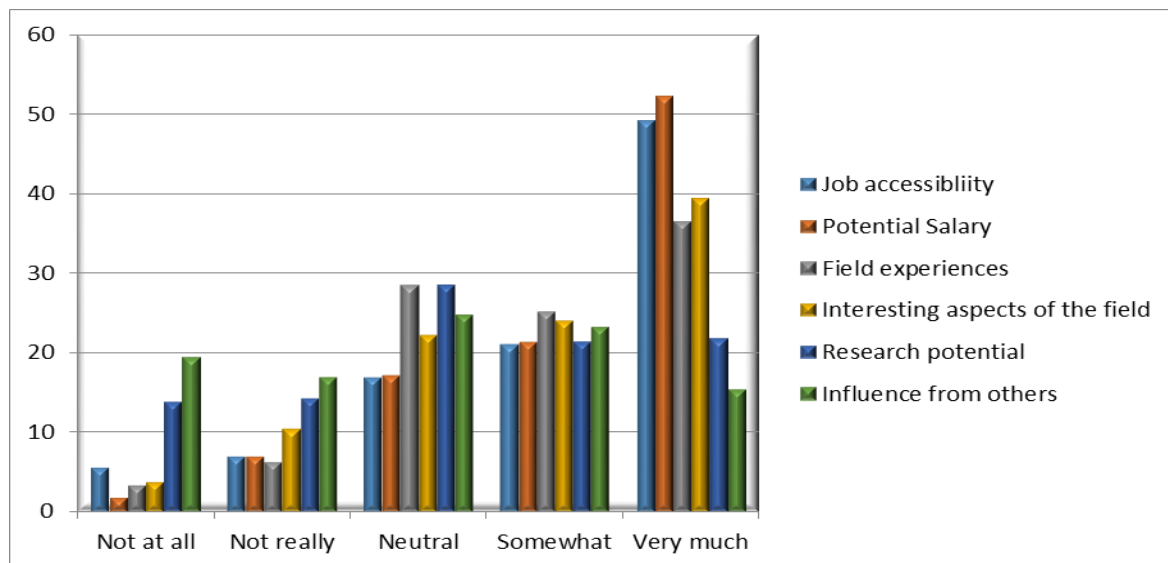


Figure 1: Factors that serve as deterrents to working in geriatrics physiotherapy after graduation

**Table 6: Factors influencing opinion on geriatrics physiotherapy among participants**

Specialty	Frequency (%)									
	Neutral		Not at all		Not really		Somewhat		Very much	
	N	%	N	%	N	%	n	%	N	%
Clinical experience	38	14.3	19	7.1	27	10.2	34	12.8	61	22.9
Evidence in the literature	49	18.4	20	7.5	38	14.3	41	15.4	27	10.2
Peers	50	18.8	26	9.8	41	15.4	37	13.9	23	8.6
Clinical instructor	37	13.9	27	10.2	26	9.8	41	15.4	44	16.5
Geriatrics lecturer	32	12.0	34	12.8	29	10.9	38	14.3	42	15.8

**Table 7: Association between sociodemographic variables of clinical physiotherapy undergraduates and their perception towards specialization in geriatrics**

Sociodemographic variables	I am not interested at any stage in my career	I am definitely interested at some stage in my career	I may be interested but I'm unsure at this time	X <sup>2</sup>	p-value
<b>Gender</b>					
Female	75	42	14	1.499	0.473
Male	59	46	20		
<b>Age group</b>					
18-21	66	46	20	3.558	0.469
22-25	60	37	18		
26-30	8	5	6		
<b>Level of study</b>					
400	72	43	23	0.507	0.776
500	62	45	21		
<b>School of study</b>					
Bowen University	41	29	11	17.604	0.128
Chrisland University	8	8	3		
Obafemi Awolowo University	18	12	11		
Redeemers University	21	15	2		
University of Ibadan	14	2	5		
University of Lagos	14	7	8		
University of Medical Sciences	18	15	4		

\*Significant at  $p \leq 0.05$

## DISCUSSION

The composition of this study sample revealed a higher proportion of males as participants. This discrepancy may be attributed to male students showing a higher interest to participate in the study. Most of the students were from Bowen University, this can be explained as a quota sampling technique was used and the sample population from each university is representative of the total population.

Findings of this study revealed that the majority of undergraduate physiotherapy participants had attended lectures on geriatric physiotherapy or geriatric placement before completing the survey. The fact that these sessions were often held during the fourth year indicates that they were likely part of advanced coursework, which could allow for deeper learning and hands-on experience in the specialty. Most geriatric-focused sessions occurred in teaching hospitals and general hospitals, aligning with the fact that geriatric physiotherapy is often practiced in institutional settings due to the clinical needs of older populations and the resources present in the institutions. The varied responses regarding perceived value and interest indicate that although students may acknowledge the significance of geriatrics in physiotherapy practice, geriatrics physiotherapy lectures or practical sessions were not so enjoyable. This variation in perceived value and enjoyment may stem from the quality of clinical exposure and the emphasis placed on geriatrics within the

curriculum. Also, practical exposure and quality teaching are critical factors in determining the effectiveness of geriatric training<sup>18</sup>. The low percentage of students who found these sessions not valuable could also indicate that geriatrics is still a relatively under-emphasized field in some programs, potentially due to the growing yet still limited integration of geriatric content into physiotherapy curricula worldwide.

Sports physiotherapy and orthopaedic physiotherapy were the most popular specialties among the participants, reflecting the broader trend in physiotherapy where students express a preference for areas that are perceived as more dynamic and widely practiced<sup>19</sup>. In contrast, geriatrics received moderate interest, showing that while not a primary focus, there is a significant awareness and potential interest in this field. The lower interest in community physiotherapy (10.5%) suggests that, compared to other areas, it is less emphasized and perhaps less perceived as a high-demand area, despite its growing importance in addressing global health challenges<sup>20</sup>. Geriatric physiotherapy, however, remains important in light of global ageing trends, and increasing exposure to the specialty could boost its appeal<sup>21</sup>.

Prior to entering the physiotherapy programme, a majority of the participants were unaware of the role of physiotherapy in managing geriatric conditions. Furthermore, the majority had no clear idea of the specialty they would pursue upon

graduation. At the time of the study, however, a significant number of them had identified a specialty of interest, with sports and orthopaedic physiotherapy being the most popular. When asked about geriatrics, most of the participants were unsure about specializing in this field. This demonstrates that while students may not initially be aware of the value of geriatrics in physiotherapy, exposure through the curriculum could lead to greater interest and awareness. This finding underscores the importance of early and continuous education on geriatric physiotherapy, especially as the global population ages and the need for geriatric care increases<sup>18</sup>.

The top factors influencing participants' decision to specialize in geriatrics physiotherapy were job accessibility and salary potential, reflecting the importance of practical considerations in career choices. Field experience and personal interest were also significant motivators. These results align with studies showing that career decisions in healthcare are often driven by economic factors and the availability of job opportunities<sup>22</sup>. The lower weight given to research potential and influence from others suggests that intrinsic factors, such as personal interest and direct exposure, play a larger role in career choices than external or academic factors. The growing demand for physiotherapists specializing in geriatrics in response to population ageing<sup>20</sup> could make this a more attractive option, particularly if greater job opportunities and competitive salaries become available.

The most common deterrent for not pursuing geriatrics physiotherapy was a perception that the specialty did not offer enough opportunities for growth or development. This finding highlights the need to reshape how geriatric physiotherapy is viewed in the professional landscape, particularly to make it appear more dynamic and forward-looking. Furthermore, low prestige and insufficient pay are recurring challenges in many healthcare disciplines, and more can be done to elevate the value and recognition of geriatric physiotherapy as a specialty.

There was no association between the students' perception towards specialization in geriatric physiotherapy, and their sociodemographic variables (gender, age-group, level of study and school). The lack of a significant association may be from limited exposure in geriatrics training or similar career motivations across groups, regardless of their demographics. Many students prioritize financial prospects and personal interests regardless of their age, gender, institution of training and even level of study. Additionally the dominance of more popular fields like sports or musculoskeletal physiotherapy may contribute to low interest in geriatrics. These factors collectively reduce the likelihood that gender, age, level of study or the institution of training significantly influence specialization choices<sup>17</sup>.

## **CONCLUSION**

This study found that clinical physiotherapy undergraduates generally value geriatric



sessions and show moderate interest in specializing in geriatrics. Job accessibility and potential salary were the main motivators for choosing this field, with field experiences and personal interest also playing significant roles. No significant associations were found between students' perceptions of geriatric specialization and their age, gender, institution of training, or level of study.

### RECOMMENDATION

We recommend evaluating and enhancing geriatric care training in university physiotherapy curricular, with a particular focus on the clinical aspect, to enhance students' interest. Emphasis should also be made on the increasing ageing population and the importance physiotherapy plays in maintaining and improving health care for the ageing population. Comparative studies on students' perceptions and attitudes towards geriatric physiotherapy across different regions are suggested. Additionally, ongoing research should track trends in specialization among physiotherapy students in South-West Nigeria.

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### REFERENCES

1. Lubbe AL, van Rijn M, Groen WG, Hilhorst S, Burchell GL, Hertogh CMPM, Pol MC. The quality of geriatric rehabilitation from the patients' perspective: a scoping review. *Age Ageing*. 2023 Mar 1;52(3):afad032. doi:10.1093/ageing/afad032.
2. Rungruangbaiyok C, Vongvaivanichakul P, Lektip C, Sutara W, Jumpathong P, Miyake E, et al. Prevalence and associated factors of musculoskeletal disorders among older patients treated at Walailak University Physical Therapy Clinic in Thailand: a retrospective study. *Int J Environ Res Public Health*. 2024 Sep 21;21(9):1253. doi:10.3390/ijerph21091253.
3. Reddy RS, Alahmari KA, Alshahrani MS, Alkhamis BA, Tedla JS, ALMohiza MA, et al. Exploring the impact of physiotherapy on health outcomes in older adults with chronic diseases: a cross-sectional analysis. *Front Public Health*. 2024 Sep 9;12:1415882. doi:10.3389/fpubh.2024.1415882 . PMID: 39314794; PMCID: PMC11416960.
4. Chang L, Thompson J, Williams A. Perceptions of geriatric

- physiotherapy in undergraduate students: Challenges and opportunities. *Physiother Theory Pract.* 2022;38(4):540–8.
5. British Heart Foundation National Centre for Physical Activity and Health. Physical activity and health: A brief review of the evidence [Internet]. 2015 [cited 2024 Nov 5]. Available from: <https://www.bhf.org.uk>
6. Langhammer B, Bergland A, Rydwick E. The Importance of Physical Activity Exercise among Older People. *Biomed Res Int.* 2018 Dec 5;2018:7856823. doi: 10.1155/2018/7856823. PMID: 30627571; PMCID: PMC6304477.
7. Sherrington C, Tiedemann A. Physiotherapy in the prevention of falls in older people. *J Physiother.* 2015;61(2):54-60. doi:10.1016/j.jphys.2015.02.011.
8. McPhee JS, French DP, Jackson D, Nazroo J, Pendleton N, Degens H. Physical activity in older age: perspectives for healthy ageing and frailty. *Biogerontology.* 2016 Jun;17(3):567-80. doi:10.1007/s10522-016-9641-0
9. Giovannini S, Brau F, Galluzzo V, Santagada DA, Loreti C, Biscotti L, et al. Falls among older adults: screening, identification, rehabilitation, and management. *Appl Sci.* 2022;12(15):7934. doi:10.3390/app12157934.
10. Omaña H, Sureshkumar A, Äijö M, Hunter SW. Attitudes and beliefs of physical therapists and physical therapist students toward working with older adults: a systematic review. *Phys Ther.* 2024 Jul;104(7):pzae052. doi:10.1093/ptj/pzae052.
11. Jahan AM. Insight into functional decline assessment in older adults: a physiotherapist's perspective. *Arch Gerontol Geriatr Plus.* 2024;1(4):100048. doi:10.1016/j.aggp.2024.100048.
12. Watkins C, Waterfield J. An exploration of physiotherapy students' perceptions of older adult rehabilitation. *Phys Occup Ther Geriatr.* 2010;28(3):271-9. doi:10.3109/02703181.2010.512410
13. Torres Sánchez I, López López L, Rodríguez Torres J, Prados Román E, Granados Santiago M, Valenza MC. Influence of cardiorespiratory clinical placements on the specialty interest of physiotherapy students. *Healthcare (Basel).*

- 2019 Nov 17;7(4):148.  
doi:10.3390/healthcare7040148.
14. Wilson CM, Arena SK, Boright LE. State of the art physiotherapist-led approaches to safe aging in place. *Arch Physiother*. 2022;12:17. doi:10.1186/s40945-022-00142-5.
15. Vaishya R, Vaish A. Falls in older adults are serious. *Indian J Orthop*. 2020 Jan 24;54(1):69-74. doi:10.1007/s43465-019-00037-x. PMID: 32257019; PMCID: PMC7093636.
16. Sevilla CG, Ochave JA, Punsalan TG, Regala BP, Uriarte GG. *Research Methods*. Revised Edition. Manila: Rex Book Store; 2007.
17. Marques A, Silva P, Almeida J. Perception of final year physiotherapy students on specialisation in cardiorespiratory physiotherapy. *J Physiother Educ*. 2019;33(2):108–15.
18. Naidoo K, van Wyk J. The knowledge and attitudes of final-year medical students regarding care of older patients. *Afr J Health Prof Educ*. 2021;13(4). Available from: [https://hdl.handle.net/10520/ejc-m\\_ajhpe\\_v13\\_n4\\_a7](https://hdl.handle.net/10520/ejc-m_ajhpe_v13_n4_a7). Petterson M, MacInnes D, Ellis J. Specialization in physiotherapy: Perceptions of students and educators. *Physiother J*. 2009;29(5):240–6.
19. Fabunmi A, Adebajo B, Akinola T. Factors influencing study of physiotherapy and preferred choice of specialisation among final-year physiotherapy students in Nigeria. *J Health Sci Med*. 2020 Mar;3(2):102-8. doi:10.32322/jhsm.632717. Tiedemann A, Sherrington C, Close J. Physiotherapy interventions to prevent falls in older adults: A systematic review. *J Aging Phys Activ*. 2011;19(6):424–30.
20. Mbada C, Olawuyi A, Oyewole OO, Odole AC, Ogundele AO, Fatoye F. Characteristics and determinants of community physiotherapy utilization and supply. *BMC Health Serv Res*. 2019 Mar 14;19(1):168. doi:10.1186/s12913-019-3994-4. PMID: 30871529; PMCID: PMC6419371.
21. Liu-Ambrose T, Li LC. Physiotherapy for healthy aging. *Physiother Can*. 2022 Jan 1;74(1):1-3. doi:10.3138/ptc-2021-0106-gee. PMID: 35185240; PMCID: PMC8816357.

22. Yasin YM, Alomari A, MacNevin S, et al. From decision to destination: factors influencing healthcare students' career paths in Qatar. *BMC Med Educ.* 2024;24:1522. doi:10.1186/s12909-024-06527-3.