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## Models of Physiotherapy Clinical Education in South-West Nigeria

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### Abstract

**Background:** Clinical education is an essential component of physiotherapy education programs worldwide. Different models of providing clinical education exist all over the world. It appears that there is no published literature on the models of clinical education used in the training of physiotherapy undergraduates in Nigeria.

**Aim:** The study investigated the models of physiotherapy clinical education in South West Nigeria.

**Methods:** Seventy four (45 males, 29 females) physiotherapy educators participated in this cross-sectional population-based survey. They were recruited from the three university institutions in South-West Nigeria that run physiotherapy programs and their associated teaching hospitals. A self-developed, validated questionnaire was used to solicit information on the models of clinical education being used in undergraduate physiotherapy training in South Western Nigeria. Data was analysed using descriptive statistics of mean, standard deviation and percentages.

**Results:** Participants were aged 38±7 years. 53 (71%) participants had postgraduate qualifications. 22 (29.7%) participants reported that they had received formal training in clinical education prior to this study. Over half of the participants (40, 54.1%) reported the shared responsibility model (both clinician and lecturer based) to be the most commonly used model of clinical education. The least reported (8.1%) model was the designated clinical educator model (clinician based).

**Conclusion:** It can be concluded from this study that the most commonly reported model of clinical education is the shared responsibility model (both clinician and lecturer based). The development of a standardized model of physiotherapy clinical education is recommended. Training programmes should be organized for physiotherapy educators on clinical education.

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### Introduction

Clinical education is the practical integration and application of knowledge, skills and attitudes learned at university, to professional practice in the real world (The University of Queensland, 2005). It enables the student to become a competent and autonomously practicing entry level practitioner with a sense of responsibility for a lifelong learning (World Confederation of Physical Therapists, 2011).

To help physiotherapy undergraduates achieve the required levels of knowledge and skills to adequately practice upon graduation, the teacher is expected to utilize effective educational methods that foster learning. The outcome of physiotherapy education is partly a reflection of the model of clinical education used in the training and partly a reflection of the quality of clinical educators who help prepare graduates to deliver quality and cost effective services to meet the needs and demands of society within a dynamic health care environment (Gandy, 1995).

Different models of providing clinical education exist all over the world (Stroschein *et al.*, 2002; Rowe *et al.*, 2012). These models include mentoring, collaborative, shared responsibility, combined collaborative, peer tutoring and

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designated clinical educator (Stiller *et al.*, 2004; Ayaia, 2009). Studies have been carried out in countries like Australia, United Kingdom and South Africa on the models of clinical education that are used in teaching undergraduates in physiotherapy and how they affect the students (Conrick *et al.*, 2001; Stiller *et al.*, 2004). Usually, models of clinical education supervision are based on the principle of a single educator working face-to-face with one, or a small number of students, instructing them in the management of a wide range of health conditions (Chartered Society of Physiotherapy, 2002). In Australia, there are two basic models of delivering clinical education although different models are used both within and between states. The first model is where a physiotherapist acts as a designated clinical educator (DCE) during the clinical placements of students while the second model involves a number of physiotherapy staff within the health unit sharing responsibility for the clinical supervision of undergraduates (Stiller *et al.*, 2004). Physiotherapy clinical educators are placed in the precarious position of trying to effectively balance and respond to two responsibilities. The first responsibility is the practice setting, which requires that the practitioner delivers cost-effective and quality patient services. The second responsibility is the higher education, which wants the clinical educator to respond to the needs of the student learner and the educational outcomes of the academic program (American Physical Therapy, 1992).

In some universities in South Africa, physiotherapy students are supported in their clinical education by both clinicians at the healthcare centre and clinical instructors. The model of clinical education that is used in those universities consists of external facilitation and internal facilitation. In internal facilitation the physiotherapist (clinician) supervises the student, the students report to and can ask advice from the physiotherapist; the physiotherapist (clinician) is responsible for writing a report on the students' progress on the clinical placement (Conrick *et al.*, 2001). In external facilitation, the clinical lecturer visits the student once a week and is responsible for assessing the student's clinical competence at the end of the clinical rotation (Conrick *et al.*, 2001).

In other parts of Africa and particularly in Nigeria, little is known about teaching- learning strategies that clinical educators use in clinical education, thus no guideline currently exists to

assist clinical teachers in physiotherapy on their mode of teaching and this leads to varied support and teaching by clinical teachers and varied learning by individual student thus leading to inconsistency and inequity of student learning experiences (Cross, 1995; Chan, 2001). The main objective of this study was to investigate the models of physiotherapy clinical education in South Western Nigeria.

## **Methodology**

### **Research design**

This study followed a cross-sectional survey design that involved all consenting physiotherapy educators in the three academic institutions and their associated teaching hospitals where physiotherapy is taught in South-West Nigeria.

### **Participants**

The participants for this study were 74 Physiotherapy educators who have had the opportunity of participating in clinical education for at least a semester in the three academic institutions in South Western Nigeria and their associated teaching hospitals. These academic training institutions are; University of Ibadan, Ibadan, Obafemi Awolowo university, Ile-Ife and University of Lagos, Lagos while the teaching hospitals are; University College Hospital, Ibadan, Obafemi Awolowo Teaching Hospital, Ile – Ife and Lagos University Teaching Hospital, Lagos.

### **Instrument for data collection**

A self-developed questionnaire was designed to elicit information on the models of clinical education being used in undergraduate physiotherapy training in Nigeria.

### **Development of the questionnaire**

The process of questionnaire development involved a review of published literature using PubMed and Google scholar databases. Search terms used were models of clinical education, physiotherapy education and clinical education. Search limits were set for only free articles in English language. Opinions were also sought from clinicians and lecturers on the models of clinical education being used in their institutions and five commonly used models of clinical education were identified. These are shared responsibility model (lecturer-based), shared responsibility model (clinician-based), shared responsibility model (both clinician and lecturers), designated clinical educator (lecturer-based), designated clinical educator (clinician-based).

In the shared responsibility model (clinician-based), clinicians are responsible for the clinical education of the students. The supervising clinicians maintain a full or near full clinical caseload, and the students treat some or all of these patients. Thus the supervisors divide their time between supervising students, treating patients, and overseeing their caseloads. In the shared responsibility model (lecturer-based), lecturers are responsible for the clinical education of the students while maintaining other academic work load. It involves the allocation of one or two lecturers to a group of students. The shared responsibility model (lecturer and clinician based) involves both the clinician (who are hospital employed) and lecturers (who are university employed). They are both responsible for the clinical education of the students. In this model of supervision, several clinical educators are involved in the education of students in the course of a student's placement at a particular site (Nolinske, 1995). In the designated clinical educator model (clinician-based), clinical physiotherapist(s) act as a designated clinical educator (DCE) during the clinical placements of students. This model involves allocation of one or more students to a clinical educator. This educator is ideally a skilled clinician employed by the hospital who seeks an opportunity to facilitate student learning. The DCE may or may not receive additional remuneration or recognition for this role and will have a considerably reduced patient load to enable them to specifically focus on educating students (Stiller *et al.*, 2004). The designated clinical educator model (lecturer-based) involves physiotherapy lecturers acting as designated clinical educators (DCE) during the clinical placements of students. The clinical educator receives additional remuneration or recognition for this role and is usually employed by the university (Stiller *et al.*, 2004). The main assignment or job description of the clinical educator is the education of the students.

The questionnaire was made up of 27 items and divided into two sections, Section A (which is made up of 7 items) obtained information on socio-demographic variables of age, gender, academic qualification, years of experience, institution, rank level and specialization. Section B (which is made up of 16 items) obtained information on the models of clinical education. Some of the items in section B were extracted from an existing questionnaire (questionnaire on models of

clinical education by Stiller *et al.*, 2004). The items were pooled and mingled together so as to avoid responder's bias. Items 8, 10, 12, 13, 14 obtained information on the shared responsibility model (clinician-based), shared responsibility model (lecturer-based) and shared responsibility model (both lecturer and clinician based). Items 7, 8, 9, 11, 15 obtained information on designated clinical educator model (clinician-based) and designated clinical educator model (lecturer-based). This developed questionnaire was assessed for content validity by an expert group of four physiotherapy lecturers and two physiotherapy clinicians who are knowledgeable in questionnaire development.

### **Data Analysis**

Descriptive statistics of mean, standard deviation, frequency was used to summarize age and years of experience. Percentages were used to summarize the models of clinical education.

### **Ethics**

The protocol for this study was approved by the University of Ibadan/ University College Hospital Research Ethics Committee, Ibadan, Nigeria. Permission to carry out the study was obtained from the heads of the physiotherapy departments involved. Informed consent was obtained from all participants.

### **Results**

Participants (45 males, 29 females) were aged  $38 \pm 7$  years. Nine participants were from the University of Ibadan, 26 participants were from the University College Hospital, seven were from University of Lagos, and eight participants were from Lagos University Teaching Hospital while 19 participants and five participants were from Obafemi Awolowo University and Obafemi Awolowo University Teaching Hospital respectively (table 1). All the institutions are based in Nigeria. Out of the 74 participants, 5.4% were professors/reader/associate professor, 6.8% were senior lecturers, 16.2% were lecturers (grade level one and two), 37.8% were basic physiotherapists, 14.9% were senior physiotherapists, 8.1% were Principal physiotherapists, 6.8% were Chief physiotherapists and 4.1% were assistant directors of physiotherapy (table 1). Over 70% of the participants had post-graduate qualifications and 29% of the participants had bachelor's degree (table 1). Thirty participants had between 1 to 5 years of clinical education

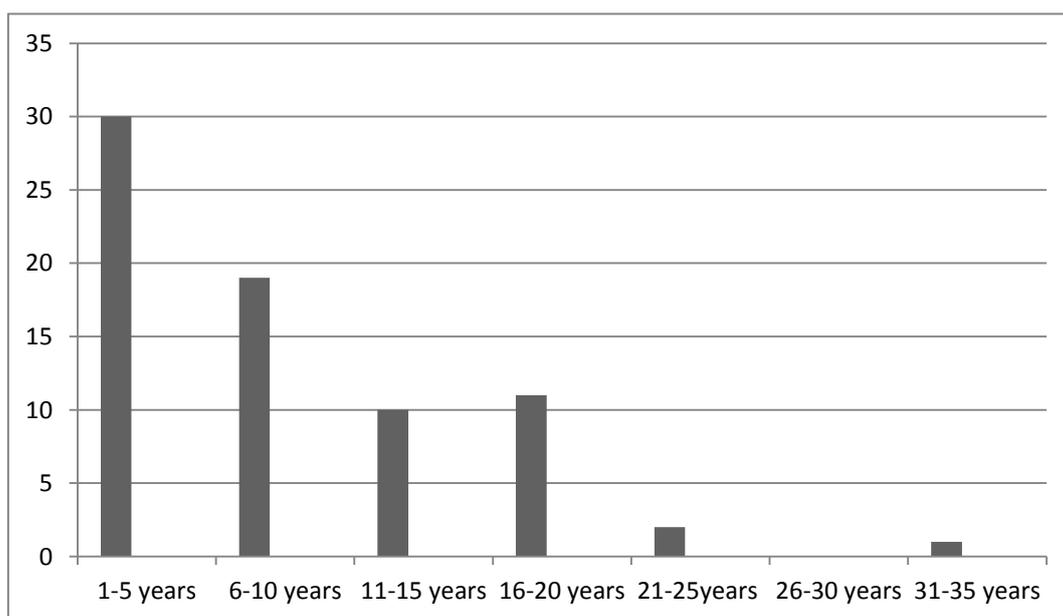
while only two participants had 20-25 years of experience as clinical educator (figure 1). About 34.7% of the participants had orthopaedics and musculoskeletal and 2.8% of the participants had burns and obstetrics and gynaecology as their areas of specialization. Over two-thirds (69%) of the participants reported that clinical educator and student ratio should not be more than one to four. A third (29.7%) of the participants reported to have received formal training on clinical education prior to this study, 64.9% reported no formal training on clinical education prior to this study while the remaining 5.4% were undecided. About one tenth (11.4%) of the participants reported that on the average they attended to 1-2 students at a time, while 28.6% of the participants reported that on the average they attended to 3-5 students at a time, 37.1% of the participants attended to 6-10 students and 22.9% of the participants reported that on the average they attend to more than 10 students at a time.

### Models of Clinical Education

Fifty two (70.3%) participants reported that both clinicians and lecturers are responsible for the clinical education of physiotherapy students, while 16.2% of the participants reported that clinicians are responsible for the clinical education of physiotherapy students and 12.2% of the participants reported that lecturers are responsible for the clinical education of physiotherapy students. Almost

one-fifth (18.1%) of the participants reported to have a reduced patient load that enables them to focus specifically on treating patients, while 75% of the participants reported not to have a reduced patient load and the remaining 6.9% were undecided. Majority (74.3%) of the participants reported they are responsible for the assessment of the clinical competence of the students while 23% reported not to be responsible for that and the remaining 2.7% were undecided. In the use of a standardized scale for the assessment of the effectiveness and efficiency of the student's clinical education, 82.2% of the participants reported that they do not use standardized scales in their assessment. Out of 74 participants in the study, 40 (54.1%) participants reported the use of the shared responsibility (both clinician-and lecturer-based) model of clinical education (table 1). Ten participants reported the use of shared responsibility (clinician-based) model of clinical education (table 2), while seven participants reported the use of shared responsibility (lecturer-based) model of clinical education (table 3). Few (8.1%) participants reported the use of the designated clinical educator (clinician-based) model of clinical education (table 4) and about one-tenth (10.8%) of the participants reported the use of the designated clinical educator (lecturer-based) model of clinical education (table 5). The mostly reported model of clinical education in this study was the shared responsibility model (both clinician-and lecturer-based).

**Figure 1: Participants' Years of Teaching Experience**



**Table 1: Frequency Distribution of Participants' Response to Shared Responsibility (both clinicians and lecturers)/ Multiple Mentoring Model of Clinical Education**

<b>Academic Institutions and their associated Teaching Hospitals</b>	<b>Yes</b>	<b>n (%)</b>	<b>No</b>	<b>n (%)</b>	<b>Total</b>
University of Ibadan and University College Hospital	19	52.3%	16	45.7%	35
University of Lagos and Lagos University Teaching Hospital	10	66.7%	5	33.3%	15
Obafemi Awolowo University and Obafemi Awolowo University Teaching Hospital	11	45.8%	13	54.2%	24
<b>Total</b>	<b>40</b>	<b>54.1%</b>	<b>34</b>	<b>45.9%</b>	<b>74</b>

**Table 2: Frequency Distribution of Participants' Response to Shared Responsibility Model (clinician-based)**

<b>Academic Institutions and their associated Teaching Hospitals</b>	<b>Yes</b>	<b>n (%)</b>	<b>No</b>	<b>n (%)</b>	<b>Total</b>
University of Ibadan and University College Hospital	4	11.4%	31	88.6%	35
University of Lagos and Lagos University Teaching Hospital	0	0%	15	100%	15
Obafemi Awolowo University and Obafemi Awolowo University Teaching Hospital	6	25%	18	75%	24
<b>Total</b>	<b>10</b>	<b>13.5%</b>	<b>64</b>	<b>84.5%</b>	<b>74</b>

**Table 3: Frequency Distribution of Participants' Response to Shared Responsibility Model of Clinical Education (lecturer-based)**

<b>Academic Institutions and their associated Teaching Hospitals</b>	<b>Yes</b>	<b>n (%)</b>	<b>No</b>	<b>n (%)</b>	<b>Total</b>
University of Ibadan and University College Hospital	4	11.4%	31	88.6%	35
University of Lagos and Lagos University Teaching Hospital	2	13.3%	13	86.7%	15
Obafemi Awolowo University and Obafemi Awolowo University Teaching Hospital	1	4.2%	23	95.9%	24
<b>Total</b>	<b>7</b>	<b>9.5%</b>	<b>67</b>	<b>90.5%</b>	<b>74</b>

**Table 4: Frequency Distribution of Participants' Response to the Designated Clinical Educator Model of Clinical Education (clinician-based)**

Academic Institutions and their associated Teaching Hospitals	Yes	n (%)	No	n (%)	Total
University of Ibadan and University College Hospital	5	14.3%	30	85.7%	35
University of Lagos and Lagos University Teaching Hospital	1	6.7%	14	93.3%	15
Obafemi Awolowo University and Obafemi Awolowo University Teaching Hospital	0	0%	24	100%	24
<b>Total</b>	<b>6</b>	<b>8.1%</b>	<b>68</b>	<b>91.9%</b>	<b>74</b>

**Table 5: Frequency Distribution of Participants' Response to Designated Clinical Educator Model (lecturer-based)**

Academic Institutions and their associated Teaching Hospitals	Yes	n (%)	No	n (%)	Total
University of Ibadan and University College Hospital	3	8.6%	32	91.4%	35
University of Lagos and Lagos University Teaching Hospital	2	13.3%	13	86.7%	15
Obafemi Awolowo University and Obafemi Awolowo University Teaching Hospital	3	12.5%	31	87.5%	24
<b>Total</b>	<b>8</b>	<b>10.8%</b>	<b>66</b>	<b>89.2%</b>	<b>74</b>

## Discussion

The finding that 71% of the participants had postgraduate qualifications is in keeping with the high level of requirements for engagement in physiotherapy education in Nigeria. Amongst the clinical physiotherapists, the low ranked physiotherapists participated more than the high ranked physiotherapists. Some of the participants had more than one clinical area in which they undertake clinical education of undergraduate physiotherapy students and few of the participants had their areas of specialty different from the clinical area that they undertake the clinical education of undergraduate physiotherapy students. As this study is population based, it sought to include as many physiotherapists involved in clinical education as possible, but quite a number of physiotherapists were not included due to their relative inaccessibility. It implies that the subjects who participated may represent those with the most interest in clinical education and may not be representative of the entire

population of physiotherapists involved in clinical education.

Majority of the participants in this study had not received formal training in clinical education. According to a study carried out by Strohschein *et al.*, (2002), inadequate formal preparation of clinicians for the important and complex role of clinical educator contributes to an inconsistency of approach in the method clinical education is delivered. In studies carried out by Onuoha (1994) and Higgs (1992), it was reported that expertise in clinical practice does not imply expertise in clinical education and that in becoming a clinical educator specific preparations and training are necessary. In another study carried out by Walker and Openshaw (1994), it was implied that as clinical educators lacked formal training in clinical education, they often learned the role primarily by trial and error. The American Physical Therapy Association addressed the need for instruction in clinical education through the development of guidelines and

self-assessments for clinical education to clarify roles, responsibilities, and expectations, allowing potential clinical educators to determine readiness for involvement in clinical education.

The manner in which clinical education is conceptualised and delivered varies (Lekkas *et al.*, 2007). It appears from this study that there is no distinct model that is used in the delivery of clinical education. Participants from the University of Ibadan and University of Lagos and their associated Teaching Hospitals, reported the shared responsibility model (clinician and lecturer based) as the most commonly used model of clinical education. In the Obafemi Awolowo University and its associated teaching hospital the shared responsibility model was not favoured. From the findings of this study 10 out of the 74 physiotherapy educators that participated favoured the shared responsibility model (clinician-based). Out of which were 4 participants from University of Ibadan and its associated teaching hospital, 6 participants from Obafemi Awolowo University and its associated teaching hospital while in the University of Lagos and the associated teaching hospital, it was not favoured. In a study carried out by Stiller *et al.*, (2004), the shared responsibility model was found to be the most commonly used method of delivering clinical education to Australian physiotherapy students. They also reported the designated clinical educator model as a method of delivering clinical education to physiotherapy students.

From the results of this study, there was a low response from all the participants as regards the designated clinical educator (lecturer-based and clinician-based) model of clinical education. Few of the participants reported the designated clinical educator model of clinical education. The mostly reported model of clinical education in this study was the shared responsibility model (both clinicians and lecturers based). The varied models of clinical education reported by the participants in this study supports the notion of Ernstzen *et al.*, (2009), who reported that no guideline exists to assist clinical educators on their methods of clinical education and every clinical educators' teaching differs and depends on the clinical educator's discretion. This leads to varied support and teaching by the clinical educator and varied learning by individual students and those under clinical posting. In a study by

McDonough and Osterbrink (2005) clinical teachers expressed their lack of knowledge on teaching and learning process thus determining what constitutes effective clinical education could help focus clinical education programmes for clinical educators. This model of clinical education reinforces the notion that clinical education is the responsibility of all (Lekkas *et al.*, 2007). It also encourages students to establish meaningful peer relationships and to use each other as resources (Strohschein *et al.*, 2002). In this model of clinical education, the clinical educator's responsibility regarding clinical education is reduced since the provision of clinical education is by more than one educator (Lekkas *et al.*, 2007).

The finding in this study that both clinicians and lecturers are responsible for the clinical education of physiotherapy students could support the report of Lekkas *et al.*, (2007). They reported that the involvement of clinicians and students during fieldwork could help students develop a diversity of relationships, experience a range of perspectives and approaches, identify appropriate role models, and benefit from the unique strengths and interests of a number of individuals. This model could help make efficient use of potentially scarce resources of staffing and time through the flexibility and creativity inherent in the structure (Strohschein *et al.*, 2002). This survey has provided empirical information on the models of physiotherapy clinical education in South Western Nigeria. It is hoped that this information may stimulate the interest of more researchers in conducting studies on the clinical education of physiotherapy students in Nigeria,

## Conclusion

It can be concluded from this study that many physiotherapy educators in South-West, Nigeria had not received formal training in clinical education. The shared responsibility model appears to be the most commonly reported model of clinical education in physiotherapy training institutions and their associated teaching hospitals in South-West Nigeria.

## Implications of findings

Efforts should be made by management of the various academic institutions and their

associated teaching hospitals to organize workshops and training programmes for educators who have no formal training and retrain those who have had formal training in clinical education. This is hoped to translate into better clinical education of students. A standardized model of clinical education of undergraduate physiotherapy students in South-West Nigeria should be developed.

**Conflicts of Interest:** None

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