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Are Undergraduate Medical Students Taking Leadership Training Courses In Nigeria Universities?

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Abstract

Introduction

The Medical and Dental Council of Nigeria (MDCN) and the National Universities Commission (NUC) designed the medical undergraduate curriculum with one of its core objectives being *"To produce medical and dental practitioners with sufficient managerial ability to play a leadership role in health care delivery"*. The extent to which this is implemented in Nigeria medical schools is yet to be explored.

The aim of this study was to assess whether leadership and management courses were taught to students during their studies

Methods

Eighty-three medical students in their 5th and 6th year in 3 randomly selected medical schools in Nigeria responded to an online self-administered questionnaire from February 20, 2020 to March 2, 2020. Information on whether any formal leadership and management courses were taught in their syllabus was sought, and they also answered questions on how well instructors taught their general courses. Application of perceived knowledge of leadership using 4Cs (communication, critical thinking, collaboration and creativity) in 21st century learning was assessed using hypothetical leadership case scenario.

Results

Sixty-nine of the 83 respondents (83.1%) did not have leadership and management training in their study years, $p = 0.001$ and (74.7%) did not have faculty mentors. Few respondents (31.65%) thought their instructors were generally well organized, and thirty-three (40.74%) of respondents thought their instructors answered their questions above average. Many responders ticked the correct answers to the labels of 4 Cs of 21st century learning but application of this knowledge to a hypothetical leadership scenario was poor as only 7 respondents gave some plausible solutions to the problem.

Conclusion

Most medical students lack formal leadership training in Nigeria and these skills are needed in their early career to manage clinics and hospitals in rural and some urban settings. The implication is that should these doctors be sent to these clinics, they may fail to lead them properly, so training modules should be integrated into the already packed curriculum from the first year through the final year of study to improve the leadership of clinics.

Key words: *leadership, management, medical curriculum, Nigeria.*

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Introduction

The Medical and Dental Council of Nigeria (MDCN) and the National Universities Commission (NUC) designed the medical undergraduate curriculum with one of its core objectives being *"To produce medical and dental practitioners with sufficient managerial ability to play a leadership role in health care delivery"* (1). This curriculum is robust and it is expected that the student spends at least 148 weeks in training, which equates to 6 years without breaks. The contents of the curriculum make it almost impossible to add any new items into it but modifying what is delivered and thought to be necessary, will prevent increasing the duration of studies as seen also in United Kingdom medical schools' curriculum(2). Learning about leadership and management and acquiring these leadership and management skills in health care may be as important as learning the contents of medicine because in these austere times. It is now believed that while physician leaders help reduce hospital mortality, economic leaders improve hospital finances and there must be balance between the two goals and leadership styles (3, 4).

Leadership and management skills are needed for proper delivery of health care to patients in the country and active participation of medical doctors in the management of hospitals have seen improvements in both patient care and finances of the hospital (4–6). The newly graduated medical doctor in Nigeria is usually sent to rural clinics and hospitals to practice and manage; but many do not have the leadership and managerial skills to accomplish the latter (7). The job descriptions of these doctors include acting as medical officers of health directing environmental and personnel matters related to health services. They work with and train other members of allied health personnel, communities and families in rural settings; assess and obtain information on health problems and assist in planning, implementing and evaluating the basic health services scheme. However, unlike the undergraduate curriculum and syllabus, most post graduate syllabuses have leadership and management workshops embedded into them as prerequisites for completing rotations and eligibility for final assessments (6, 8). With the numerous tasks expected of the newly graduated doctor during their National youth service year, leaving the leadership and management training courses to the post graduate training may not give them the necessary tools to perform these tasks properly. In Nigeria and other African countries where doctor: patient ratio is poor, many doctors will need to learn to lead early in their career as they will have to serve rural and district clinics without supervision (9, 10). The study by Brady et al (11) reports 98% of students not having any entrepreneurial skill training in their undergraduate study which may not be far-fetched as these students are not really expected

to start up without supervision in their early careers post-graduation.

Leadership is a concept that moves beyond cognitive skills, so learning this will require more than the usual seminars, lectures and symposia (6). Workshops, situated learning and problem-based learning styles will be needed to develop the psychomotor and affective skills the students will need to go through the career path. In preparing the doctor for his or her tasks in the community, (s)he needs to develop some attributes that stand him out from the fray, challenge his reasoning and help him create solutions to problems he/she will encounter(12).

The 4Cs of 21st century learning (communication, critical thinking, collaboration and creativity) are some leadership skills that learners may need to develop in his journey through the educational career (13–15). No one attribute is more important than the other and the process of development or utilization in not stepwise but integrated. Critical thinking (ability to reason beyond applications and evaluation), communication (delivery of one's vision, thoughts and ideas to others so they understand), collaboration (working with diverse group of people in harmony to solve problems) and creativity (producing solutions to problems) should be learnt, taught, evaluated in some way during the leadership and management training of the undergraduate doctor because with these skills, (s)he will navigate the managerial world better equipped (8).

As part of data driven instructional design for syllabus modification in our institution and some others in Nigeria, we sought to assess whether leadership and management courses were taught to students during their studies. We hypothesized that though the MDCN curriculum has a core objective to graduate doctors with leadership and management skills, medical schools are yet to find ways of including them in their already overloaded syllabuses.

Methods

Study design

We conducted a descriptive cohort study, by using an online self-administered questionnaire survey among medical students in their 5th and 6th year in Nigeria (Public medical schools across 3 geographical regions; South South, South West and North Central) from February 20, 2020 to March 2, 2020 through survey monkey website. Using a multi-staged sampling technique, 3 regions were selected from the 6 geopolitical regions in Nigeria and 3 schools were selected from each of the 3 geopolitical regions. The email addresses of the medical students in the 5th and 6th years were retrieved from the medical students' association data

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and links to the survey were sent out to individual students. A sample size of 100 students was calculated using the formula for simple proportion with an estimated prevalence of 50%, and a standard error of 5%. Respondents had a chance to win one of five tickets to a movie (as incentive to complete the survey).

Quantitative data

Survey retrieved information on age, gender and whether any form of leadership and management were taught in the course of their undergraduate learning. Students were also asked if they had faculty mentors and information about how well general medical courses were taught, answers to queries by the instructors and types of learning activities utilized were also retrieved.

Qualitative data

Authors created a scenario of consumables lack in the clinic and asked how respondents will use the 4Cs of 21st century learning to solve the problem. The open-ended question allowed respondents to describe what they would do in such a scenario, bringing in whatever leadership skills they may have learnt or imbibed.

"*How can you apply the 4 Cs of 21st-century learning in the leadership of a clinic crisis where consumables are unavailable due to budget cuts? (200 words)"*

The survey closed one week after it was opened and data was analysed as percentages and means. Two of the authors (YIE, and OE) reviewed the responses for the survey and created themes and subthemes following a grounded theory approach. The work was carried out with no human or animal biological samples in accordance to the Declaration of Helsinki. The respondents gave consent and their email addresses and phone numbers were collected for a draw to win 5 movie tickets. Data was analysed using the survey monkey tool and presentations of results were mainly in proportions.

Results

Eighty-three respondents (83% response rate) completed the survey with 47 (56.6%) females with 36 (43.4%) males, and most of them were in the age range of 21 – 29 years (89.2%). Sixty-two respondents (74.7%) did not have general faculty mentors to guide them during their tutelage and 83.1% had students' handbook with their course codes, contents and credit units.

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Quantitative data results

Table 1: Responders answers to the knowledge-based questions

Questions to test knowledge	Yes	No	p value
Do you have a Faculty Handbook with course contents/codes/ credit units?	69 (83.1)	14 (16.9)	0.001*
Were Leadership and management courses taught/included in your syllabus?	14 (16.9)	69(83.1)	0.001*
Do you have a general faculty-assigned mentor?	21 (25)	62(74.7)	0.001*

Leadership and management

A significant proportion of the respondents, 69 (83.1%) did not have leadership and management training in their study years, p <0.001, table 1.

Asked when these courses should be taught if included in the curriculum, 54 respondents (65.85%) thought this should be in the 3rd year of study and only 18.29% believed the 6th year should be the year when these courses are taught, table 2.

Table 2: Responders answers to the academic year(s) in which leadership and management should be taught in the medical syllabus? (Multiple responses were allowed)

Year	N (%)
Year 1	42 (51.2%)
Year 2	41 (50.0%)
Year 3	54 (65.8%)
Year 4	32 (39.0%)
Year 5	19 (23.2%)
Year 6	15 (18.3%)

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Table 3: Responders' perception of facilitators' attitude towards organization of lectures and how they respond to learners' questions and queries

Questions	Likert scale	N (%)
How well organized were your facilitators for your classes generally?	Extremely	3 (3.6)
	Very	22 (26.2)
	Somewhat	37 (44.0)
	Not so well	22 (26.2)
How well did your facilitators answer your questions generally>	Extremely	9 (11.1)
	Very	24 (29.6)
	Somewhat	34 (41.9)
	Not so well	12 (14.8)

Instructors' attitudes to teaching generally

Using Likert scale, we asked about instructors' delivery and organization of the course contents generally, and 31.65% thought their instructors were well organised with majority being somewhat organised (46.84%). Thirty-three (40.74%) of respondents thought their instructors answered their questions above average while the 14.82% did not think their instructors answered their questions well enough and 4 responders did not give answer to that question.

Testing knowledge and application of leadership

Questions were asked to test prior knowledge (by ticking options) and application of leadership skills of respondents. For prior knowledge of leadership styles, many respondents, (89.2%) were familiar with the democratic and autocratic (71.95%) styles with only 25.61% knowing about transformational leadership styles. While majority ticked the correct responses to the labels of 4C's of 21st century learning, 9.76% included computing choices and 13.41% ticked construction, which were distracting responses. Some of the excerpts of responses from the problem-based learning scenario created are listed below;

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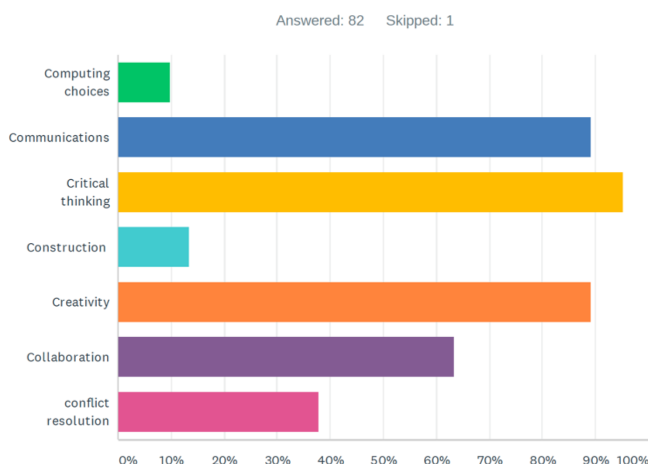

Figure 1: Respondents' knowledge of the 4 Cs of 21st century learning

According to figure 1, respondents' knowledge of the 4 Cs of 21st century learning to which distractors, like computing choices 8 (9.76%), construction 11 (13.41%) and conflict resolution 31 (37.80%) were added got responses indicating lack of knowledge of 4Cs in these respondents.

Qualitative data results

Categorizing the responses on practical application of knowledge

Four main categories (themes) of respondents were drawn from comments to the case scenario and these include;

A: Respondents who proffered solutions that were original and are termed systems thinker (7).

Seven respondents were categorized in this group. Some of these responders were not boxed in, and thought of generating funds from donor agencies. All 7 had received some leadership and management courses in their schools.

"I will communicate with the patient the crisis, what ought to be done. Then I'll think of what can be used to improvise the consumables, probably look for sources to borrow from. Then I'll look for various agencies that I can collaborate with to get these supplies such as nonprofit organizations. I would also write to some companies and well-meaning members of society who are able to make these donations" (Source No. 65)

Some tried to practice democratic leadership by involving stakeholders in the discussion of funds management, while others were pragmatic by offering to make available these consumables in collaboration with the industries. Their knowledge may be basic, but they have applied them in theory to problems, even attempting systems thinking of give and take and tradeoffs. A responder understood the concept of lobbying and its use in policy making and allocation of funds in budgeting.

"I will device means to influence the political class to allocate more money to the purchase of consumables. This will be achieved through intense lobbying and a coordinated advocacy program to get those in charge of budgetary allocation to see the need to our health first as no nation can grow without a healthy work force. At the same time, I'll put in place some measures to transfer a little bit of the cost to patients as the case may be. Partnership with non-governmental organizations and pharmaceutical companies will also go a long way to reduce the burden and channel the available funds to other solving other problems"
(Source No 56)

The inclusive or transformational leader is likely to bring together his team and inform them of the crises and ask for ideas to solve the problem. Regular and annual fund raising events have helped many large hospital continue service provision in the face of austerity which source No. 47 was able to articulate in his/her submission.

"Try to discuss with all health workers involved to get their view on how to manage funds and supplies, devise new means of getting the work done with the few available yet reducing cost on patient, apply for aids from other organizations like NGOs. When it gets too bad, I'd ensure we raise our voices/take an action so the government would do something."
(Source No. 47)

Big corporations operating around large hospitals have the potentials of collaborating with hospitals as a way of outsourcing their basic needs of health care. While they send their employees to the hospitals for regular checks and health maintenance, they also donate equipment and endow research funds which source no. 23 alluded to.

"The 4C's include: Communication, critical thinking, creativity and collaboration I would think of ways that I could get these consumables without the budget, I would gather the

contacts of the industries that produce this consumables, firms that can help me get them and individuals that could donate and reach out to them. I would propose services that the clinic could offer to this firms after the clinic crisis in exchange for their support, then I would think of things that can replace those consumables and are readily available. I would also employ makeshift processes that could help the lack. I would also collaborate with other health institutions, NGOs, and institutions in other industries so they can help while also advertising themselves. Thanks" (Source No. 23)

B: Responders who used the key words but did not proffer solutions (53)

There were 53 respondents who were categorized in this group and 7 of these had received some leadership and management courses in their schools. These respondents rather went about defining the key words without applying them to the problem created. Some made efforts to proffer solutions e.g. improvising, but did not state what will be improvised. Delegating duties and responsibilities also characterized this group of responders showing that, with proper training on management and leadership, they may acquire skills on how to properly lead and manage all available resources to achieve results, see sources 64 and 51.

"By being critical in thinking, I would be able to bring up the main idea of which would be able to manage the clinic crisis, and then come up with a creative idea on how to carry out the process effectively which would be by improvising with available materials in the clinic. I would in turn then communicate my creative idea to other students who would be able to understand. This would make help me to collaborate properly with other students" (Source No. 64)

"You communicate with the patient; you do critical thinking based on the information from communication. Collaborate with other Doctors from various units in line with the information from communication. Then you create a plan for the diagnosis, management and treatment of your patient." (Source No. 51)

It is unlikely that communicating with the patients and / or their relatives will yield long term and meaningful overall results so while some respondents had knowledge of the processes, the utilization of this was inappropriate. This may be the process some managers of hospitals and units adopt, but passing the buck to the patients makes them inefficient managers.

"Ways of improvising will be thought of with critical thinking. Communication will be established with the patient involved and relatives/friends on the unavailability of the required consumables and the plan of improvising. With creativity and collaboration with other health personnel the plan of improvising will be carried out while ensuring effectiveness and efficacy." (Source No. 61)

C*: The political speaker*

Five respondents were categorized as political speakers

This set of responders may have been exposed to student or mainstream politics and gave responses showing their oratory and political knowledge, as stated by sources 55, and 49.

"Critical thinking, creativity, conflict resolution and collaboration are pivots to an effectively well run system. Although an individual is expected to have all this qualities (sic), It is almost impossible to find a good percentage with this qualities (sic). Continual blame driven in the direction of the government has further folded the arms of individuals as they believe that if the government is non-committal why should they care. But to allow for growth and progress... To allow for a system that not only survives but thrives i believe that if health care workers are taught on the benefits of triaging in emergencies and the basics of economics like opportunity cost and scale of preference are reminded health workers, we still can provide the best we can offer though not meeting the standards of s developed world but doing our best such that we sleep with clear consciences." (Source No. 55)

"The most logical thing to do in a scenario unfortunate enough to have unavailable consumable due to budget cuts is to put more effort to address the root of the cause than the complications of the cause. This would reduce the degree of complications to deal with. If there's an infestation of mosquitos it's better to clear gutters than to take antimalarial medicine." (Source No. 49)

Source No. 56, while not preferring any solutions, went ahead to criticize the management and these are the students who need workshops and seminars on how hospitals are administered and managed.

"Well, the management has to think very well before embarking on any projects. Barrage of unessential things should not be tolerated" (Source No. 56)

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D: The uninformed category

There were 18 respondents whose responses could be categorized as the uniformed. Their typical answer was: "I'm not sure" and some skipped the answer.

Discussion

The study set out to explore medical students' exposure to leadership and management in their curriculum in Nigeria and over 80% of the respondents did not have training in leadership and management. Some medical schools in the developed economies have leadership and management integrated into the undergraduate curriculum even when these early career doctors may not undertake leadership roles early in their career (2, 6, 16, 17). Some early career doctors in the United Kingdom believe they are not equipped to undertake leadership roles though they had some training in leadership and management (2). However, for the early career doctor who has to manage a rural / district clinic in Nigeria,(7) and other African countries, these skills should be learnt and used from the undergraduate level even before their post-graduate careers. The several industrial strikes embarked upon by health workers in Nigeria may have been averted if the leadership of those health institutions had career training in leadership and management (conflict resolution) before taking their roles (18).

To further buttress the lack of training in leadership and management in medical undergraduate syllabus, most students recognized democratic leadership style, with very few knowing the transformational leadership style. Answering that question was possibly instinctive for most of the respondents as democratic leadership is the most popular in Nigeria today and the one most students will prefer to promote which should not be the case if they were well exposed (19, 20). Exposing undergraduate medical learners to various leadership styles, skills and competence, may help broaden their minds to the realities of the world and medicine. They would learn about the leaders who have used various styles, the outcomes of their leadership career and critically appraised which will work best in different organizations or structures. Using workshop models or situated learning, students will be exposed to various scenarios that are real or modeled, and are then asked to navigate the problems with solutions that could work (21–24).

From the responses posted to the hypothetical scenario of "lack", it is obvious that many students have not been exposed to the 4 Cs of 21st century learning and how these skills can be used to solve leadership and management problems. The responders in category A may have some experience in leadership and using the 4 Cs, or they used other concepts of

leadership to answer the problem. Whatever the reason, they have demonstrated knowledge and its application to the hypothetical scenario raised. These few respondents demonstrated some depth of knowledge and application of the 4Cs to leadership in times of lack. Should the rest of the respondents be sent to rural clinical and district hospitals during their National Youth service, to take up the tasks of organizing and managing resources, they may be overwhelmed and possibly fail in the tasks.

In this study, about a quarter of students have faculty mentors in their schools, a concept that has been shown to improve students' professionalism character and competence as some students in other institutions have (25–30). This proportion is small compared to the proportion in other developed countries and for the enormous benefits emanating from this type of relationship. Leadership and management training has been shown to help develop mentor-mentee relationships where the students learn various types of leadership traits from their teachers and use them as role models (26, 30).

Conclusion

The result of the survey (which students in the last 2 years of medical school responded to) revealed inadequate leadership /management training in Nigeria medical school. This was also confirmed in the application of theoretical knowledge to a hypothetical management scenario where only 7 of the respondents were able to proffer plausible solutions. So to prepare the Nigeria medical graduate to perform his role as a leader in the health care sector, faculties are encouraged to draw up syllabus that will include leadership and management training and also bridge the gap between them and their students as leadership styles can be emulated in this core and hidden curriculum.

Study limitations

The study is limited to the medical schools in Nigeria and thus cannot be generalized to other African countries or the rest of the world. The three schools used are public, and old generation, and the state of affairs in the private schools are unknown but can be extrapolated since these schools also derive their curriculum from the MDCN. The study design in retrieving the qualitative data i.e. responses to the scenario were hypothetical and this may not be able to show leadership skills in other areas of life by the students. Also, assessing leadership skills may be better done through watching the learner actively engage in such roles during a training session but this was not done and it opened up a line for future studies.

Declarations

Ethics approval and consent to participate

This study did not use any human or animal biological samples and however, ethical approval was obtained from the ethics and research board of the University of Port Harcourt Teaching Hospital. Students who responded were deemed to have given consent to having their data retrieved and analysed. They were assured that their responses are confidential and the information linking them to their responses was the email address and this was known only to the authors.

Consent for publication

Not applicable

Availability of data and materials

Data used for the research is available with the corresponding author on request.

Competing interests

There are no competing interests for this study.

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This research was not funded.

Authors' contributions

IEY conceptualized and designed the project with supervision from AEB. Authors YIE and OE contributed to data acquisition, analysis and interpretation of results. All authors were involved in drafting and revising the manuscript and have given final approval and have agreed to be accountable for all aspects of the work.

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