Curriculum objectives and contents as precursors of procedure competence of community Health Extension Worker Trainees in Public Colleges of Health Technology, Southwestern, Nigeria

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Abstract
There have been challenges of competence among Curriculum Health Extension Workers Trainees (CHEWT) in handling basic health procedures. This might be attributable to the inadequacy of the curriculum contents and objectives. This study therefore examined curriculum contents and objectives as precursors of procedure competence of CHEWT in Public Colleges of Health Technology (CoHT), South-Western Nigeria. The study adopted the descriptive research design (the correlational type) while purposive sampling technique was used to select 226 of the 300level CHEWT (final year students that have almost completed the programme based on the contents and objectives of the curriculum) in the community health department (the only department that trains community health extension trainees) in six public CoHT, in each state. Student questionnaire with reliability coefficient of 0.93 and Student Practical Skills Test with reliability coefficient of 0.93 were used for data collection and multiple regression for the analysis at 0.05 level of significance. Adequate and relevant curriculum contents (ARCC) (F2,223 = 0.75) and Adequate and relevant curriculum objectives (ARCO) (F2,223 = 1.79) had no significant joint and relative contributions to procedure competence of CHEWT. The four variables when collectively taken together had no composite and relative contribution (F2,223 = 1.10) to procedure competence. Curriculum objectives and contents are not sufficient to determine procedure competence of CHEWT. Other factors can be investigated to understand the reason for the challenges in the procedure competence of CHEWT.

Keywords: Community health curriculum, curriculum contents, curriculum objectives, Procedure competence, Community health extension worker trainee,

Introduction

Nigeria is one of the countries in Africa whose health system rely on services provided by a group of health workers known as mid-level health workers like the Community health extension workers. This is because the training of these mid-level health workers and utilization is cost effective and they can cover the rural and sub-urban areas where majority of the populace reside. This had made the Curriculum Health Extension (CHE) one of the frontline health care providers and not just a stopgap as considered by many. However, the training programme content and methodology have been found to be significantly deficient and inadequate. Globally, literature has been silent on the appropriateness and relevance of curricula and teaching methods for educating personnel for mid-level health workers **(**Couper et al 2018). Couper is also of the opinion that training may not be tailored to the practice of these workers to meet needs of the communities they serve.

The adoption of the Primary Health Care (PHC) delivery services in Nigeria, following the Alma-Ata declaration of 1978, made it more apparent for the identification and training of a category of health workers who would be willing to provide health services at the rural and community levels. These groups of health workers are known as community health extension workers and community health

officers and are trained to provide basic, promotive, preventive, curative and rehabilitative health services to individuals, families and community members at the grassroots. With the dearth of health care providers, CHEWs are critical to reaching individuals and families mostly at the rural areas.

Community Health Extension Workers (CHEW) are trained in the Colleges of Health Technology (CoHT) which focus on health oriented programmes. Trainees receive quality health training which prepares them to function as grassroots' health care providers. The objectives of CHEW training include acquisition of basic community health knowledge, practical skills, and training/supervisory skills. These enable the trained person to provide Primary Health Care (PHC) services recognised as the solution to achieving "health for all" at the community level. The community health curriculum in Nigeria is a comprehensive guide for all government and privately owned Colleges of Health Technology training community health workers to provide health care to where people work and live at the grassroots.

Community Health workers curriculum should address the contents and objectives that are aimed at acquiring necessary knowledge and skills; the numerous challenges emerging as a result of incompetence cannot be overemphasized. The CHEWT of today are the CHEW expected to deliver health care at the grassroots in future. It is important they have adequate grasp of the curriculum contents and objectives that will enable them acquire necessary skills and attitudes in order to become competent.

A curriculum is important to educational system as it provides direction for the training package and when it is properly implemented will lead to the achievement of students' academic success which is the utmost goal of any educational institution. Moronkola, Akinsola and Abe (2018) viewed curriculum as the reconstruction of knowledge and experience which is a reflection of what people think, feel, believe or do, systematically developed with the guidance of the school or relevant agencies which enable the learner to have better mastery of learning experiences for the learner's and the society's wellbeing. A curriculum is a blueprint of any educational system and is usually designed to meet the needs of the society. A curriculum comprises of contents, expected objectives as well as duration of the programme and what learners are expected to learn (progress) at any stage of the programme. A curriculum consists of continuous chain of activities needed to translate educational goals into concrete activities, materials and observable change in behaviour.

The community health curriculum is a training guide for community health trainees in achieving proficiency or competence in basic knowledge and practical skills needed to provide comprehensive health care at the grassroots. Hence, for a society to achieve its educational goals, it needs a curriculum that is functional, adequate and relevant to its needs. A curriculum can be organised into three major components: objective, content or subject matter and learning experiences.

Curriculum content is simply the sum of what is to be taught in an educational institution which can be in form of knowledge, skills, attitudes and values that learners are exposed to and are expected to be familiar with or exhibit competency or proficiency in. Curriculum contents refer to the key facts, principles and concepts to be taught and learned which should be in line with the learning experiences. It is important that the content of a curriculum has lucid objectives to be achieved by the end of each respective lesson. The curriculum contents consist of the training module, or courses broken down into units or subunits for easy translation of the overall curriculum.

Curriculum objectives describe the end-point or desired outcomes of the curriculum, a unit, a lesson plan or learning activity. Curriculum objectives further specify and describes curriculum outcome in more specific terms than goals or aims. Objectives are also the instruction or directions of what the instructors/educators want the students to be able to do as a result of the instructions. Objectives aid students,

teachers and parents by specifying the direction of the curriculum and goals. Curriculum objectives are the expected skills, knowledge in terms of cognitive (knowledge and information), affective (attitudes and appreciation) and psychomotor (skills and performance) domains. According to Moronkola, Akinsola and Abe (2018) objectives must be simple, realistic, measurable and specific enough so that there is no doubt as to the kind of behaviour expected, or the behaviour applied to; but must be broad enough to accommodate all types of outcomes for which the school is responsible.

Curriculum content is another main lever of education quality as such the community health curriculum or programme training content should balance community perceived and epidemiologically determined needs. The quality of any educational system is to a great degree dependent on the relevance and adequacy of its objectives and contents of the school curricula (Akuezuilo and Akudolu, 2006). Inappropriate training can lead to major disincentives to both the community and individuals. Appropriate authorities should address how material is taught to the community health workers, how and where it is carried out and other relevant skills which will strengthen their capabilities to translate information to the community. Many training programmes for community health workers are inadequate and there is need to update the curricula of community health worker in order for it to be relevant to procedure competence and practice as well as reflecting advances in education of health professional education (Couper et al 2018). Furthermore, Adegoke, Mani and Abubakar (2013) in a study carried out in three northern states, reviewed four pre-service education programmes curriculum which included Nursing, Midwifery, CHEW and Junior Community Health Extension Worker (JCHEW) programme in relation to training of skilled birth attendants discovered that the CHEW and JCHEW curricula are currently inadequate with regard to training skilled birth attendants and called for urgent need for modification without which the graduates of these programmes will have doubtful requisite competency needed to function adequately in health centres.

According to Labiran, Mafe, Onajole and Lambo, (2008), community health training programme faces similar difficulties to those of other pre-service programmes like lack of suitable teaching materials, largely irrelevant curricula, courses that are too long or too short, unsuitable training environment and badly-chosen or wrongly-used methods of training. Unfortunately, the curricula of most medical and health science schools are still over -burdened with the pursuit of knowledge that is irrelevant to the priority tasks that must be performed to meet the community health needs and only a few medical, nursing, and health sciences schools have developed explicit objectives for their training programme. (Labiran,et al. 2018)

According to Abdulraheem, Oladipo and Amodu (2011), Nigerians have a basic right to quality health care; however, the community health training and community health programme were implemented with little professional interest, leading to a gap in knowledge of rural health workers in responding satisfactorily to identified problems, therefore making it difficult to render quality health. They further identified that some rural health workers were unqualified and the qualified ones lacked the modern concept of PHC practice. As such adequate training is essential for community health workers to effectively carry out their work. Training does not only include learning how to provide preventive, curative or other relevant services to the community but also incorporate learning how to teach and communicate with both the community and learners.

Studies repeatedly show that students' perceptions are important determinant of student behaviour. Students learn better when they perceive the contents to be learnt positively. Students' perceptions include their thoughts, beliefs, feelings about persons, situations, events e.t.c. According to Balogun, 1997; Oladejo, Olosunde, Ojebisi and Ishola 2011; Duze, 2012, students' perception of a programme has been found to impinge on good academic performance. The attitude brought into any programme is very important. Positive

attitude is a major factor in the accomplishment of a programme. However, the reverse is the case in a negative attitude. Furthermore, Ferreira and Santoso (2008) observed that poor perceptions hinder learning as students may begin to dislike the instructor and lesson content. Conversely, higher perceptions can lead to greater performance and therefore concluded in their study that there was a relationship between negative perceptions and lower academic performance and concluded that students' perceptions have behavioural consequences on the learning approaches they adopt, which in turn influence learning outcomes. Practical skills are vital part of a health worker's daily routine which is very necessary for procedure competence. Having highly competent CHEWs is very paramount to effective health care delivery. Nevertheless, according to Vogel and Harendza (2016), procedure competence in performance of basic health skills is often below the expected showing signs of incompetence. There have been challenges of competence among Curriculum Health Extension Worker Trainee (CHEWT) in handling basic health procedures. This might be attributable to the way CHEWT perceive the curriculum contents and objectives. Thus, this study aimed to analyse the perception of CHEWT on the community health curriculum content and objectives to identify basic practical skills in health trainee education which provide evidence with respect to effective students' learning of these skills. Basic practical skills for procedure competence in this study were restricted to the performance of basic health procedures like estimation of blood pressure, measurement of mid-arm circumference for nutritional status estimation in children, visual acuity test and preparation of oral rehydration solution used in the replacement of body fluids and electrolyte due to diarrhoea especially in children,

Research questions:

The study answered the following research questions:

1. What are the joint and relative contributions of adequate and relevant curriculum contents to acquisition of procedure competence among community health extension trainee in public colleges of health technology, Southwestern Nigeria?

2. What are the joint and relative contributions of adequate and relevant curriculum objectives to acquisition of procedure competence among community health extension trainee in public colleges of health technology, Southwestern, Nigeria?

3. What are the joint contributions of adequate curriculum contents and objectives to acquisition of procedure competence among community health extension trainee in public colleges of health technology, Southwestern, Nigeria?

Methodology

This study adopted a descriptive research design (the correlational type). Purposive sampling technique was used to select six public colleges of health technology (CoHT) namely: Akure, Ondo State; Ibadan, Oyo State; Ijero-Ekiti, Ekiti State; Ilesa, Osun State; Ilese, Ogun State and Yaba, Lagos State in the South-western Nigeria because the public colleges have the largest number of students utilizing the community health curriculum. The community health department (the only department that train community health extension trainees) in each CoHT was purposively selected. 300 level (final year students who had almost completed the programme based on the contents and objectives of the curriculum) were purposively selected while total enumeration sampling technique was employed in selecting 256 students.

Self-developed, validated and reliable instruments were used for data collection. They are**: 1.** The Student's Questionnaire (SQ) with reliability coefficient of 0.93. This instrument is divided into 2 sections, A and B. Section A consists of items on adequacy and relevance of curriculum contents, while Section B consists of items on adequacy and relevance of objectives. Each item was graded using the 4 points Likert Scale.: 4 for Strongly Agree (SA), 3- Agree (A), 2- Disagree (D) and 1-Strongly Disagree (SD). 2. The practical procedure skills test with reliability coefficient of 0.93 was used to score the students on 4 different practical procedures

in the demonstration room. The test is graded in 0 for wrong procedure and 1 for right procedure. Data was analyzed using multiple regressions at 0.05 level of significance.

Results:

1. **Research question one:** What are the joint and relative contributions of adequate and relevant curriculum contents to acquisition of procedure competence among community health extension trainee in public colleges of health technology, Southwestern, Nigeria?

Table 1: Summary of Regression analysis showing joint contribution of adequate and relevant curriculum content on Procedure competence of students

R	R Square	Adjusted R Square	Std. Error of the Estimate
.082	.007	.002	4.385

A N O V A

Model	Sum of Squares	DF	Mean Square	F	Sig.	Remark
Regression	28.961	2	14.481	0.753	.472	Not Sig.
Residual	4288.813	223	19.232			
Total	4317.774	225				

Summary of regression analysis showing the relative contributions of adequate and relevant curriculum content on Procedure competence of students

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
	B	Std. Error	Beta Contribution		
(Constant)	25.957	1.738		14.936	.000
Curriculum content Adequacy	.087	.132	.047	.660	.510
Curriculum content Relevance	-.124	.103	-.084	-1.194	.234

Table 1 shows the joint contributions of adequate and relevant curriculum content to the prediction of Procedure competence of trainees. The table also shows a coefficient of multiple correlation (R = .082 and Adjusted R^2 of .002). This means that 0.2% of the variance in procedure competence of trainees was accounted for by two predictor variables when taken together. The significance of the composite contribution was tested at $\alpha = 0.05$. The table also shows that the analysis of variance for the regression yielded F-ratio of 0.753 (Not significant at 0.05 level). This implies that the joint contributions of adequate and relevant curriculum content to the prediction of procedure competence of students was not significant and that other variables not included in this model may have accounted for the remaining variance.

Furthermore, the relative contribution of the adequate and relevant curriculum content to the prediction of procedure competence of students expressed as beta weights, vis: Curriculum content adequacy (β = .047, P >.05) and curriculum content relevance (β = -.084, P >.05) respectively. Hence, it could be deduced that adequacy and relevance was not significant i.e. it could not independently and significantly predict procedure competence of trainees.

1. **Research question two:** What are the joint and relative contributions of adequate and relevant curriculum objectives to acquisition of procedure competence among community health extension trainees in public colleges of health technology, Southwestern, Nigeria?

Table 2: Summary of Regression analysis showing joint contribution of adequate and relevant curriculum objective on Procedure competence of students

R	R Square			Adjusted R Square	Std. Error of the Estimate	
.126	.016			.007	4.365	
A N O V A						
Model	**Sum of Squares**	**DF**	**Mean Square**	**F**	**Sig.**	**Remark**
Regression	68.106	2	34.053	1.787	.170	Not Sig.
Residual	4249.669	223	19.057			
Total	4317.774	225				

Summary of regression analysis showing the relative contributions of adequate and relevant curriculum objective to Procedure competence of trainees

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
	B	Std. Error	Beta Contribution		
(Constant)	28.671	1.915		14.969	.000
Curriculum objective adequacy	-.059	.155	-.030	-.378	.705
Curriculum objective relevance	-.229	.170	-.107	-1.351	.178

Table 2 shows the joint contributions of adequate and relevant curriculum objectives to the prediction of Procedure competence of trainees. The table also shows a coefficient of multiple correlation (R = .126 and Adjusted R^2 of .007. This means that 0.7% of the variance in procedure competence of trainees was accounted for by two predictor variables when taken together. The significance of the composite contribution was tested at $\alpha = 0.05$. The table also shows that the analysis of variance for the regression yielded F-ratio of 1.787 (Not significant at 0.05 level). This implies that the joint contribution of the

independent variables to the dependent variable was not significant and that other variables not included in this model may have accounted for the remaining variance.

Furthermore, the relative contribution of adequate and relevant curriculum objectives on procedure competence of trainees, expressed as beta weights, visz: Curriculum objective adequacy (β = -.030, P >.05) and Curriculum objective relevance (β = -.107, P >.05) respectively. Hence, it could be deduced that curriculum objective adequacy and relevance was not significant i.e. could not independently and significantly predict Procedure competence of trainees.

1. **Research question three:** What are the joint and relative contributions of adequate and relevant curriculum contents and objectives to acquisition of procedure competence among community health extension trainee in public colleges of health technology, Southwestern, Nigeria?

Table 3: Summary of Regression analysis showing joint contributions of adequacy and relevant curriculum objective and content variables on Procedure competence of students

R	R Square			Adjusted R Square	Std. Error of the Estimate	
.140	.019			.002	4.377	
A N O V A						
Model	**Sum of Squares**	**DF**	**Mean Square**	**F**	**Sig.**	**Remark**
Regression	84.096	4	21.024	1.097	.359	Not Sig.
Residual	4233.679	221	19.157			
Total	4317.774	225				

Summary of regression analysis showing the relative contribution of adequate and relevant curriculum objective and content variables on Procedure competence of trainees

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
	B	Std. Error	Beta Contribution		
(Constant)	28.006	2.117		13.230	.000
Curriculum content adequacy	.125	.137	.067	.913	.362
Curriculum content relevance	-.029	.119	-.020	-.242	.809
Curriculum objective adequacy	-.099	.162	-.051	-.609	.543
Curriculum objective relevance	-.217	.188	-.101	-1.151	.251

Table 3 shows the joint contributions of adequate and relevant curriculum objective and content to the prediction of Procedure competence of trainees. The table also shows a coefficient of multiple correlation (R = .140 and Adjusted R^2 of .002. This means that 0.2% of the variance was accounted for by four predictor variables when taken together. The significance of the composite contribution was tested at α = 0.05. The table also shows that the analysis of variance for the regression yielded F-ratio of 1.097 (Not significant at 0.05 level). This implies that the joint contribution of the independent variables to the dependent variable was not significant and that other variables not included in this model might have accounted for the remaining variance.

Furthermore, the relative contribution of adequate and relevant curriculum objective and content to prediction of trainees' procedure competence, expressed as beta weights, vis: Curriculum content adequacy (β = .067, P >.05) and Curriculum content relevance (β = -.020, P >.05), Curriculum objective adequacy (β = -.051, P >.05) and curriculum objective relevance (β = -.101, P >.05) respectively. Hence, it could be deduced that curriculum objective and content adequacy and relevance were not significant i.e. could not independently and significantly predict procedure competence of trainees.

Discussions

This study examined the perception of adequacy and relevance of curriculum contents and objectives as precursors of procedure competence of Community Health Extension worker Trainee in Public Colleges of Health Technology (CoHT), Southwestern Nigeria. Findings of this study revealed that students' perception of adequate and relevant curriculum contents and adequate and relevant curriculum objectives had no significant joint and relative contributions to procedure competence of CHEWT, The four variables when collectively taken together had no composite and relative contribution to procedure competence. Perception of curriculum objectives and contents are not sufficient to determine procedure competence of CHEWT. finding disagrees with the findings of Igbojinwaekwu in 2012 that students' prior knowledge of lesson objectives method had significant higher academic achievement.

Conclusion

The study revealed that student's perception of adequacy and relevance of curriculum objectives and content to prediction of students' procedure competence could not jointly or relatively significantly influence students' procedure competence among Community Health Extension Trainees in Public Colleges of Health Technology (CoHT), South-western, Nigeria. Curriculum objectives and contents are not sufficient to determine procedure competence of Community Health Extension workers in training.

The study therefore recommends that curriculum contents should be reviewed to accommodate health specialties so that students can make a choice based on interests and inherent skills possessed to enhance competence. Finally, clinical instructors should use competency-based method of instruction to accommodate the skills and abilities of individual trainees.

References

Abdulraheem, I. S, Oladipo, A. R., &Amodu, M. O. (2011). Primary Health Care services in Nigeria: critical issues and strategies for enhancing the use by the rural communities. *Journal of Public Health Epidemiology, 4* (1), 5-13.

Adegoke A.A., Mani S., Abubakar, A., & Van Den Broek .N. (2013) Capacity building of skilled birth attendants. A review of pre-service education curricula in three states in northern Nigeria. Retrieved from www.ncbi.nlm.nih.gov/pubmed/231995322.

Basic practical skills teaching and learning in undergraduate medical education a review on methodological evidence Akuezuilo, E.,&Akudolu, L., R. (2006). The dividends, challenges and ways forward in the professionalization of teaching in Nigeria. Lead paper presented at the National ICT skills acquisition summits and campaigns. Awka, Nnamdi Azikiwe University

Balogun, T.A. (1997). Educational research and quality of life; a science education perspective.A paper presented at the seventh BOLESWA symposium on Educational research quality for quality of life. University of Swaziland, Kwaliseni July 21-August 1st

Couper, I., Ray S., Blaauw D., Ng'wena G., Muchiri L., Oyungu E., Omigbodun A., Morhason-Bello I., Ibingira C., Tumwine J., Conco D.,&Fonn S. (2018). Curriculum and training needs of mid-level health workers in Africa: a situational review from Kenya, Nigeria, South Africa and Uganda. BMC Health

Services Research. Retrieved fromhttp://doi.org/10.1186/s12913-018-3362-9.

Duze, C. O. (2012). Principals' perception of educational inputs and students' academic performance in junior secondary schools in Delta state of Nigeria. *An international multidisciplinary journal*. Ethiopia 6(24), 360-379.

Ferreira, A., &Santoso, A. (2008) Do Students Perceptions Matter? A Study of the Effect of Students Perceptions on Academic Performance. Accounting & Finance, 48(2),209-231.Retrieved from https://ssrn.com/abstract=1131465 or http://dx.doi.org/10.1111/j.1467-629X.2007.00239.x

Igbojinwaekwu. P.C. (2012). Students' prior knowledge of behavioural objectives and academic achievement in senior school chemistry. Retrieved from www.globalacademicgroup.com/journal/nact/students%prior%20knowledeg%20BEH AVIO URAL%20objectivesand%20academic% Acdapdf.

Labiran, A., Mafe, M. Onajole, B., & Lambo, E. (2008). Health workforce country profile for Nigeria. Abuja: Africa health workforce.

Moronkola, O.A.,Akinsola M. K.,& Abe C.V. (2018). The nature of curriculum. Ibadan: Royal People Nigeria Ltd.

Oladejo, M. O., Olosunde, G.O., Ojebisi,A.O., & Ishola O.M. (2011). Instructional materials and students' academic achievement in physics: some policy implications. *European journal of humanities and social sciences, 2(1), 1-10*

Vogel D. &Harendza S. (2016) Basic practical skill teaching and learning in undergraduate medical education- a review on methodological evidence. GMS *Journal of medical education*. *33*(4)