Journal of Natural Sciences Research
ISSN 2224-3186 (Paper) ISSN 2225-0921 (Online)
Vol.2, No.8, 2012

Identification of Competencies for Training: A case study on Physiotherapy Course at Kenya Medical Training College Nairobi

Gladys J. Mengich [1*], Sabella J. Kiprono [2]

1. School of Health Sciences, Department of Health Professions Education, Masinde Muliro University of Science & Technology P.O. Box 190 - 50100, Kakamega, Kenya
2. Department of Medical Laboratory Science, Masinde Muliro University of science and Technology, P.O Box 190 – 50100, Kakamega, Kenya

* E-mail of the corresponding author: gladysjp@yahoo.co.nz

ABSTRACT

Background: Physiotherapists trained in Kenya evolved from masseurs to Kenya Registered Physiotherapists. The rapid developments of paramedical training programs led to training at diploma level in the current Kenya Medical Training College (KMTC). Physiotherapists should cope with current health challenges by acquiring clinical competencies in order to prevent, manage and provide adequate therapeutic and rehabilitative services for the whole population.

Objective: To identify competencies to be acquired through Physiotherapy training at the KMTC to be competent in hospital and community set-up.

Design: Descriptive educational research.

Setting: Physiotherapists in Ministry of Health, Kenya Medical Training College, public and private Hospitals in Kenya.

Sampling: A random sample of 30 respondents consisted: physiotherapy graduates, KMTC lecturers, public and private practitioners and administrators from Ministry of Health.

Data analysis: The competencies identified by the participants from first round were clustered and the second round of questionnaires was derived. From the second round of questionnaires, a consensus of a list of clinical competencies for training was derived.

Results: The response rate was 100%. A consensus was achieved when participants repeatedly identified all the areas of clinical competence to be added into curriculum. The participants rated 'Very Useful' on the following areas: research (86.6%), standards in physiotherapy (86.6%), community-based rehabilitation (83.3%), counseling of patients and relatives (80%), emergency and disaster management (80%), communication (80%), medical legal issues and professional ethics (70%).

Conclusion: There is a need to train physiotherapists to be competent in both community and hospital set-ups.

Recommendations: KMTC should identify areas of competences for training health professionals using modified Delphi technique. Courses developed should cope up with current health practices and prepare health professionals to work in both community and hospital set-ups.

Keywords: Physiotherapists, competences, competencies, modified Delphi technique, health professions, curriculum

Introduction

Physiotherapy was first introduced in Kenya in 1942 as a need to care the disabled ex-servicemen after the Second World War. That made the then Government see the usefulness of a Rehabilitation Centre. Physiotherapy is defined as a healthcare profession which emphasises the use of physical approaches in the promotion, maintenance and restoration of an individual's physical, psychological and social well-being encompassing variations in health status (CSP, 1996).

The main objective of Government of Kenya for the development of health services since independence. These were: to strengthen and carry out measures for eradication, prevention and control of diseases; to provide adequate and effective diagnostic, therapeutic and rehabilitative services for the whole population. To carry out biomedical and health services, research is a means of identifying more efficient and cost-effective methods for the delivery of health services (Mutema et al., 1992; KMTC 1980).

The aim of physiotherapy course is to train physiotherapists who are able to prevent, rehabilitate and treat diseases by use of physical methods such as therapeutic exercises, soft tissue manipulation and electro physical agents (KMTC, 1980).

There is need for physiotherapy services in the changing world in relation to diseases and complications. Physiotherapists need to cope with the health and disease trends by applying the acquired knowledge, clinical skills and attitudes during training.

Physiotherapy course in KMTC train for three years and it is expected to train for competence in community and hospital set-ups, because the needs of the people vary and there is a need to adapt to changes in health, disease and health status (Teager, 1994).

However, the curriculum for training physiotherapists does not specify the competencies to be acquired, therefore, there is a need to identify the competencies from the physiotherapy course at KMTC Nairobi.

The purpose of this project was, to identify the competencies to be acquired through the diploma in the physiotherapy course at KMTC.

Materials and Methods

A descriptive educational research was conducted in order to identify the clinical competencies to be acquired through the physiotherapy training at KMTC, Nairobi. Modified Delphi technique was used to identify the competencies physiotherapists acquired during training. The technique involved a panel of 30 physiotherapists trained in KMTC and considered to have had experience, expertise and with a commitment to continued education in physiotherapy.

A self administered questionnaire was administered in two rounds. The questionnaires were completed by the same group of participants (respondents). The questionnaires consisted areas of competences the students should acquire during training. The questionnaires also had open and closed-ended questions to elicit more responses. The respondents were asked to rate the competencies using a four- point Likert scale.

The physiotherapists who participated in the first round of questionnaire were 30 and the response was good with (30) 100% returned rate. The second round of questionnaire was administered to the physiotherapists and they all responded.

The respondents were physiotherapists with experience and who have interest in the physiotherapy profession. Of the thirty (30) participants, ten (10) were lecturers teaching in the physiotherapy course at KMTC, ten (10) were physiotherapists in-charges working with the Ministry of Health and ten (10) were physiotherapists working in private hospitals and clinics in Kenya. Physiotherapists' in-charge are physiotherapists given responsibilities to direct and supervise other physiotherapists and supportive staff working in the same department.

Modified Delphi technique has been used as a popular application in the sphere of policy making and identifying opinions and ideas towards clarification of a problem (Maxwell,1995). The competencies for training physiotherapists were derived on and recommended for use during training at KMTC.

Questionnaires: round one

There were 23 areas of tasks indicated by the participants that physiotherapists should be trained on. The lists of areas of competence in questionnaire round one were as follows:

1) Community Based Rehabilitation.
2) Research.
3) Medical legal issues and professional ethics.
4) Quality/standards in physiotherapy.
5) Counselling of patients and relatives.
6) STI/ HIV and AIDS management
7) Geriatrics management.
8) Management and Office administration.
9) Computer operations and information technology.
10) Emergency and disaster management.
11) Clinical supervision of physiotherapy students.
12) Laser therapy.
13) Paediatrics management in physiotherapy.
14) Sports medicine.
15) Intensive Care Unit management.

16) Orthopaedic medicine.
17) Acupuncture.
18) Ordering and reporting of X-rays.
19) Knowledge in pharmaceuticals.
20) Occupational health safety.
21) Management of the terminally ill patients.
22) Manipulative therapy
23) Mental health.

The participants were also asked to list areas of tasks that were not included on the list given. The last part was to list areas they think physiotherapists should have competence in and were not covered during the training of physiotherapists at KMTC.
The areas of tasks listed were clustered to develop a second round of questionnaire. The areas of tasks were clustered as:

1. Community Based Rehabilitation.
2. Research
3. Information technology and computer operations
4. Quality / standardisation in physiotherapy
5. Counselling of patients and relatives
6. Management of the terminally ill / HIV and AIDS patient
7. Emergency and disaster management
8. Medical legal issues and professional ethics
9. Geriatrics management
10. Intensive Care Unit management.
11. Manipulative therapy/ manual therapy
12. Orthopaedic medicine
13. Sports medicine
14. Occupational health safety

Questionnaire: round two
In questionnaire round two, the responses from questionnaire round one were developed into questionnaire round two. The questionnaires were purposively distributed to the 30 participants who responded to questionnaire round one. The list of areas of competence indicated by all the participants and a self-explanatory letter was enclosed with the questionnaire. This was to allow the respondents have an opportunity to see what other physiotherapists had in their views. This also helped to validate the responses by suggesting on areas that needed urgent attention during the training of physiotherapists at basic training and in continued learning.
According to Maxwell (1995), questionnaire round two in modified Delphi technique is developed from round one and the respondents had opportunity to see how other experts responded to the questions, and to validate and suggest additional responses which appeared to be important.
The areas of competences identified were rated using a Likert type of scale: for example questions relating to a scale ranging from ‘Very useful’ to ‘Not useful’ was used.
From the same list, the participants were asked to specify areas of competence in order of priority that need to be given attention during physiotherapy training. Out of the thirty (30) participants, twenty four (24) indicated common areas of competence to be very useful. The areas of competence to be given attention and for inclusion during the training were as follows:

1. Community Based Rehabilitation
2. Research
3. Information technology and computer operations
4. Quality/standards in physiotherapy
5. Counselling of patients and relatives
6. Medical legal issues and professional ethics
7. Management of the terminally ill /HIV and AIDS
8. Emergency and Disaster management

Management/Office administration From the same list, the respondents were also asked to specify areas in order of priority that need to be given attention during physiotherapy training. The response was the same to that of 80% of the respondents who had indicated those areas to be very useful and for consideration for the training in order of priority. The areas indicated by 20% of the respondents in order of priority, depended on the areas of interest and where they are working in. For example: Intensive Care Unit, management of HIV/AIDS cases and the need for post graduate courses in paediatrics, sports medicine, acupuncture, orthopaedic medicine, geriatrics management and health education.

Results

All the thirty 30 (100%) participants responded in the first, and second round questionnaire. With time and considerations given by all the participants, it was considered appropriate to come up with a list of competencies physiotherapists to be trained on for competence during practice.

In round two, the participants were asked to rate the areas to be trained on in order of how useful from a category of 'Very Useful' to 'Not Useful'.

The preferred method of analysing was to consider each of the thirty (30) participants who scored each statement from 4 to 1 as Very useful, Useful, Fairly useful and Not useful.

All the areas were scored either very useful or useful. From the responses the findings from the participants were the same. The table below shows how the participants responded.

Degree level of usefulness i.e.: Very Useful = **VU**, Useful = **U**, Fairly Useful =**FU**, Not Useful = **NU** (Table 1)

The participants rated very useful (81%) on all the areas of competence listed. 11% of the participants rated useful and 8% rated fairly useful. There were no areas of competence indicated not useful as shown on the pie chart . **Pie chart showing the % response rates (figure 1)**

The majority of the participants rated Very Useful on these areas of competence as follows; Community Based Rehabilitation 83.3%, Research 86.6%, Quality/ Standards in physiotherapy 86.6%, Medical legal issues and professional ethics 70%, counselling 80%, Emergency and disaster management 80%, Information technology and computer operations 76.6%, Administration and office management 83.3% and Communication 80%. This shows that there is need to include these areas in the curriculum.

The findings were presented using percentage responses and using descriptive statistics easily understood. Maxwell (1995) described percentage responses and categorisation of responses to be understood by a wide audience, administrators, clinicians and educationists. Understanding will promote dialogue regarding resolution to the problems arising. This justifies the use of modified Delphi technique to be very useful, because it provides considerable circumstantial and experimental evidence on the findings of the competencies identified.

The areas of competence and competencies identified

From the findings the competencies were not adequately identified on the current physiotherapy curriculum at KMTC. The physiotherapy course at KMTC, should aim at equipping physiotherapists with competencies under the areas of competence in order to be able to improve promotion of health, prevention, manage patients and rehabilitate persons with disabilities.

From the findings, the areas of competence identified and to be included during the training of physiotherapists were:

- Community Based Rehabilitation (CBR)
- Research
- Information technology and computer operations
- Quality/standards in physiotherapy
- Medical legal issues and professional ethics in physiotherapy
- Counseling
- Emergency and disaster management

Discussions

Physiotherapy training in Africa is at diploma and at degree level. The aim of the diploma course is to prepare competent practitioners capable of advancement to degree level. According to the journal of the Chartered Society of Physiotherapy (CSP, 1996), physiotherapy is a health care profession which emphasing the use of physical approaches in the promotion, maintenance and restoration of an individual's physical, psychological and social well being encompassing variations in health status. To train physiotherapists to meet the needs of the people, there is need for training and be competent at the place of work.

Amosun (1994) reported that the expectations of physiotherapists in Africa were highlighted in the recommendations made at the end of a workshop organised in 1988 and 1989 by Africa Rehabilitation Institute (ARI). This recommended the development of a curriculum in physiotherapy training in Africa. The proposed curriculum was aimed at improving the quality of existing training facilities in the continent (ARI, 1993). The proposed objectives were:

•To prepare a competent professional person capable of performing therapeutic skills in varying capacities and in solving health problems of individual groups.

•To produce physiotherapists with relevant skills in scientific research and administration for those who will participate in continuing education to improve performance.

Amosun (1994) commented that the greatest expectation for physiotherapy education in Africa is the development of appropriate competence to meet the health needs of the people. The appropriate competence may be training to cope with the new trends of technology and diseases. The World Confederation for Physical Therapists (WCPT, 1998b) reported that education for physical therapy students should be sufficiently prepared to practice and support the context of Community Based Rehabilitation (CBR). It is argued that CBR can bring an improved quality of life not only to patients but also to their families.

Physiotherapy education should prepare physiotherapists to be autonomous practitioners. The World Confederation for Physical Therapist (WCPT, 1998a) identified the interrelationship between physiotherapy practice, education and research. These were identified as the key to the continuing strength and relevance of physiotherapy practice with health care and to offer a unique contribution within the multi-disciplinary team. This is an indication for physiotherapy education to develop appropriate competencies in meeting the health needs of the people (Simuzingili and Amosun 1998).

Education for physical therapy students should therefore be sufficiently prepared to practice and support the context of Community Based Rehabilitation (CBR). This is by ensuring the education outcomes achieved are of:

- Analytic skills.
- Communication, teaching and learning skills.
- Holistic, caring philosophy.
- Collaborative and reflective in practice.
- Ability to contribute and work within a health care team.

Amosun (1994b) was of the view that the community is the focal point where interventions to rehabilitate those with disabilities can be effectively directed and be applied by physiotherapists. This is the most effective agent to provide the changes necessary to overcome physical incapacity. This view is very applicable to start rural training for physiotherapists. This will meet the need of providing services to the community and not only in the hospital set-up. Health services have been concentrated in institutions placing particular emphasis on special services that tended to favour people in the central part of the country leaving rural dwellers unattended to. This has resulted in uneven distribution of health services.

Equal distribution of health services for all the people may be based on the Primary Health Care (PHC) system and Community Based Rehabilitation (CBR) which has become the major cornerstone in meeting the health needs of the people. For effective training of physiotherapists, competencies should be identified and included in the curriculum. The curriculum for training physiotherapists at KMTC may have been inadequate in preparing competent

physiotherapists. Based on the findings, the competencies identified will provide competence that will enable the learners to be competent and practice as physiotherapists (Fletcher, 1997; Kimmel,1992).

McGaghie et al (1978) described a competency-based curriculum to be organized around functions or competencies required for the practice of medicine in a specified setting. Competence includes a broad range of knowledge, attitudes, and observable patterns of behaviour to be able to deliver a specified health professional service. In this case, competence involves adoption of a professional role that values human life, improvement of the public health, and leadership in settings of healthcare and healthcare education.

Conclusions

From 1966 physiotherapy training has remained one of the most vital health care delivering health services (KMTC,1980). However, significant increase in incidence and prevalence of orthopaedic and trauma cases associated with lifestyles, increased motor accident injuries, and new trends of diseases, calls for the need to cope with the new approaches in patient management.

Based on the findings, the training should produce graduates with an accepted standard of competence to practice physiotherapy in all health care settings. To deliver health that is cost-effective, it is essential to maintain a certain number of health care personnel with relevant knowledge, skills and attitudes. The curriculum for training needs to address what the graduates will be doing at the end of the training. This implies that the specific competencies identified need to be implemented in the curriculum for training physiotherapists.

According to the Centre for Medical Education (CME, 1999), the recent European Union directives on education and recommendations of the World Federation for Medical Education were designed to reorient medical education and address the present and future health needs in the light of the current trends on health care. The health professional should have relevant knowledge, skills and attitudes to address issues on social, economic and political forces affecting health.

Implications

Physiotherapy course should aim at training physiotherapists able and willing to serve the society according to their needs. The graduates should have competence in preventive, rehabilitative, promotive and curative services to the patients. The course must produce competent graduates who can decide in relation to community needs and serve best at primary, secondary or tertiary level.

To meet challenges on health trends, the curriculum for training physiotherapists needs to be reviewed and the areas of competence identified need to be included in the curriculum for training physiotherapists. This may result in provision of effective quality services and reduction of health costs from qualified physiotherapists.

Recommendations

Based on the findings, observations and conclusions, recommendations on physiotherapy training at KMTC were as follows:

- The curriculum for training physiotherapists needs to be reviewed.
- The competencies identified need to be implemented in the curriculum for training physiotherapists at KMTC.
- Continuing Education/Life-long learning need to be implemented to update the professional competence of health care providers.
- Assessments on professional competence need to be established for accreditation
- Professional standards of competence need to be regulated by a statutory board.

Acknowledgements

Thanks to those who have been instrumental in the success of this research: The University of Dundee for participating in this research study and for their support of this study.

References

Amosun, S.L (1994a) Physiotherapy Education in Africa, The experience in Nigeria. South African *Journal of Physiotherapy*, Vol. 50., pp 60-61.

Amosun, S.L (1994b) *Uplifting Physiotherapy Education in Africa in relation to World Confederation of Physical Therapy* (WCPT) Policy-current and Future Strategies. University of the Western Cape, Private Bag 17, Bellville 7535, South Africa.
CME (1999) *Community Oriented Medical Education (COME).* (Unpublished course notes) Centre for Medical Education, University of Dundee.
CSP (1994a) Professional Education and Professional Practice Today "A Scholarly Paper". Physiotherapy, the *Journal of the Chartered Society of Physiotherapy.* Vol. 78, No.1, pp 23-25.
CSP (1994b) Continuing Professional Development: what is it and what does it mean? Physiotherapy, the *Journal of the Chartered Society of Physiotherapy,* , Vol. 80, No. 9, pp 623-625.
Cross, V. (1992) 'Clinical Needs in Clinical Education: A report on a need analysis workshop', A scholarly paper in Physiotherapy, *The Journal of the Chartered Society of Physiotherapy*, Vol. 78, No. 10 pp 758-761.
Fletcher, S. (1997) *Designing competence Based Training*. 2nd Edition, Kogan Page, London.
French, S. (1993) *Practical Research: A guide for therapists*, Butterworth Heinemann, Oxford.
Garcia-Barbero, M. (1995) Medical Education in the light of the World Health Organisation, Health for All strategy and the European Union. *Medical Education*, Vol. 29 pp 3-12.
Gonczi, A. (1994) Competency-based assessment in the Professions in Australia. *Assessment in Education* Vol.1 pp 27-44.
Kimmel, D. (1992) A Comparison of Physiotherapy in Canada and United States, *Physiotherapy Journal* Vol.44, pp 9-14.
KMTC (1980) The Curriculum for Training in Physiotherapy to State Examination (Unpublished). Faculty of Physical Medicine, Medical Training Centre. *Kenya Medical Training College*, Nairobi.
KMTC (1985) A Proposal for Curriculum Content for faculty of Physiotherapy, (Unpublished), *Kenya Medical Training College*, Nairobi.
KMTC (1999) Graduation Day Programme, December (Unpublished) *Kenya Medical Training College*, Nairobi pp 5.
Maxwell, M. (1995) "Problems Associated with the Clinical Education of Physiotherapy students: A research report on Delphi Survey". *Journal of the Chartered Society of Physiotherapy*, Vol. 81, No. 10, pp 582-583.
McGaghie, W. C., Miller, G. E., Sajid, A. W. and Telder, T. V. (1978) Competency-Based Curriculum Development in Medical Education: An Introduction, In *Public Health Paper* No. 68, WHO Geneva.
Mutema M. A., Kivanguli G. N. and Kangethe S. (1992) Curriculum Development and Change: A systematic approach. Kenya National Health Learning Materials project (Unpublished), *Ministry of Health,* Nairobi, Kenya
Palu, D. (1977) Training in Medical Education disciplines, In K.M. Parry 1977 (ed.) Medical education Magazine, Changing Medical Education in Western Europe. *International Medical Symposium* No. 2, Blackwell Scientific Publications, Oxford London.
Teager, D. (1994) 'Community-based rehabilitation is part of our competence'. *World Confederation for Physical Therapists,* Issue No. 2, pp 4.
Vaughan, B. (1989) *Writing for Competencies, In Open Distance learning for Nurses,* Longman Group UK.
Walldren, A.W. (1974) 'Curriculum Theory and Curriculum Practice: Educational Strategies for the Health professionals, *Public Health Papers* No. 61, pp 16, WHO, Geneva.
WCPT (1998) 'Why CBR is important?' *The World Confederation for Physical Therapists,* Workshop held in October 12-14, News Region, Kampala Uganda.

Table 1: **Analysis of Results for questionnaires round two.**

Areas of competence.	VU	U	FU	NU
Community Based Rehabilitation.	25	4	1	-
Research	26	2	2	-
Quality/ standards in physiotherapy.	26	2	4	-
Medical legal issues and professional ethics.	21	6	3	-
Counselling	24	5	1	-
Emergency & Disaster management	24	4	2	-
Information Technology and Computer operations	23	3	4	-
Administration and Office management	25	3	2	-
Communication	24	3	2	-
Totals	81%	11%	8%	

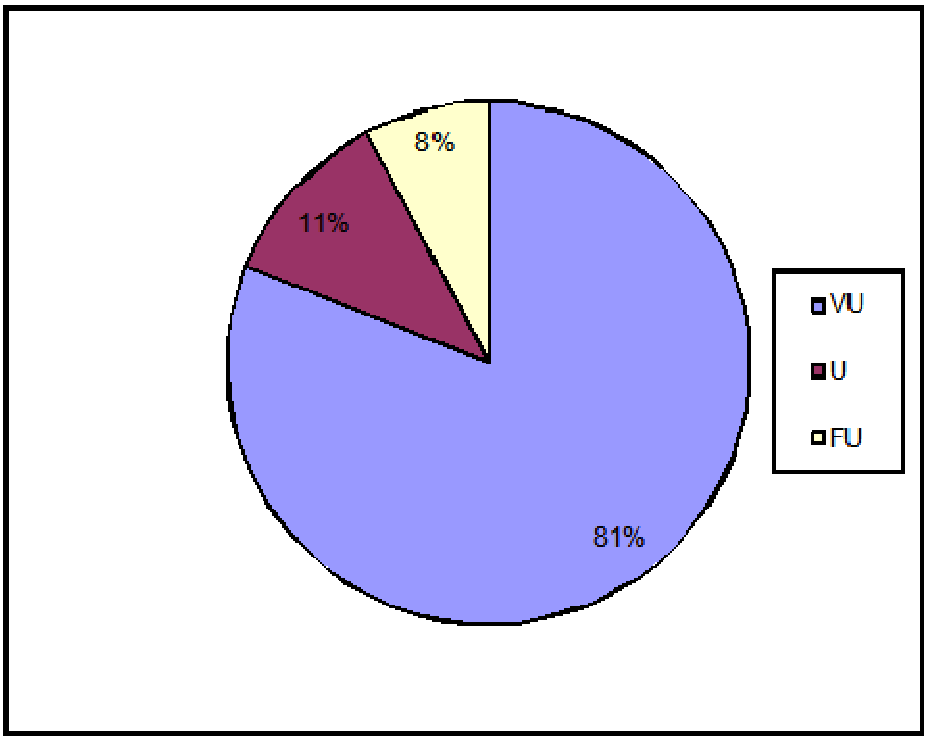

FIGURE 1: **Pie chart showing the % response rates (figure 1)**