

**KNOWLEDGE, ATTITUDE AND PRACTICE OF HEALTH PROMOTION AMONG
PHYSIOTHERAPISTS IN SELECTED TERTIARY HOSPITALS IN SOUTH EAST,
NIGERIA**

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Abstract

Background: Health promotion involves multiple strategies that can be employed to improve the individual's life condition generally, and the physiotherapy profession has been shown to be highly relevant in health promotion activities.

Aim: The aim of this study was to determine the level of knowledge, attitude and practice of health promotion among physiotherapists in South-East Nigeria.

Method: One hundred and five (105) participants involving 56 males and 49 females in selected tertiary hospitals in the South-East Nigeria were recruited through a consecutive sampling technique. The study utilized a 19- item self-reported questionnaire adapted from a previously validated instrument utilized in Nigeria. Obtained data were summarized using descriptive Statistics presented in frequency distribution tables.

Results: A total of 105 physiotherapists responded with majority demonstrating a good knowledge of health promotion (97%). Most of the respondents (72.4%) agreed that their training offered lots of opportunity to explore health promotion. About 73.3% disagree that health promotion is less important than other aspects of the physiotherapist's role. Also 96.2% believe that health promotion is a fundamental part of physiotherapy. About 50.5% usually actively incorporate aspects of health promotion into delivery of care to clients, while 43.8% of them have good attitude towards health promotion.

Conclusion: The outcome of this study showed that the participants have good knowledge, a fair attitude and possess good practice of health promotion.

Keywords: *Health Promotion, knowledge, attitude, practice, physiotherapists*

Introduction

Health as defined by Proulx,¹ is the intersection of one's physical, mental, emotional economic and spiritual state of being at any particular point in time. The most established modern day definition of health is that which has been termed by the World Health Organization² and it defines health as a state of complete physical, mental and social well-being, not merely the absence of disease and infirmity.

Health promotion is described as those activities that are undertaken to enhance well-being that are directed towards actualizing an individual's potential³. WHO has termed health promotion as "the process of enabling people to increase control over, and to improve their health and it also goes beyond a focus on one's attitude towards a wide range of social and environmental interventions that are made to benefit and protect individual people's health and quality of life by addressing and preventing the main causes of ill health, and not just focusing on its treatment and cure⁴. One of the major control measures to the rising prevalence of non-communicable diseases (NCDs) in the world according to the World Health Organization ⁵ is by the primary prevention aspect of health promotion, which is specifically aimed at doing the following; eradicating, eliminating or minimizing the impact of diseases through comprehensive population based programs.

All health professionals, irrespective of their site or area of practice as noted by Zenzano,⁶ have a key role to play in health promotion, either as individual practitioners or as a member of an inter-professional health care team. The Physiotherapy profession has been shown to be highly relevant in health promotional activities and there's a strong need for the Physiotherapists to make health promotion practice a priority⁷. The Ontario Physiotherapy Leadership Consortium (OPLC) described the model of health

promotion in physiotherapy practice as one in which the Physiotherapists have high input in health promotion at the level of the determinants of health, and this includes lifestyle and disease, injury and illness⁸. Dean *et al*,⁹ also noted that in order to educate patients and clients on the basic principles of health promotion, Physiotherapists need knowledge in the epidemiology of injury and disease, risk factors, and the major factors that are influencing the safety and injury prevention. This study thus served to identify and bridge the gaps between the required knowledge needed for proper health promotion and the accepted practice of health promotion among physiotherapists.

Materials And Methods

Study Design and Setting

This study was a cross- sectional survey. The study population comprised of physiotherapists in federal tertiary hospitals in South-East Nigeria. A purposive sampling technique was used and the physiotherapists were consecutively selected. The total number of physiotherapists in the selected Federal tertiary hospitals in the South-East Nigeria was 124.

Inclusion Criteria

Physiotherapists who have at least two years of working experience in the selected federal tertiary hospital in South-East Nigeria and who were willing to participate in the study.

Study Location

The study was conducted in selected federal tertiary hospitals in the South-East region of Nigeria. The South-East region is one of the six geo-political zones in Nigeria and consists of five states; Abia, Anambra, Ebonyi, Enugu and Imo. There are seven Federal tertiary hospitals in South-East Nigeria, which are: Alex Ekwueme Federal Teaching Hospital, Abakaliki (FETHA); Federal Medical Center (FMC), Owerri;

Federal Medical Center (FMC), Umuahia; Federal Neuropsychiatric Hospital Enugu; National Orthopaedic Hospital, Enugu (NOHE); Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi; and University of Nigeria Teaching Hospital (UNTH), Enugu. All except the Federal Neuropsychiatric Hospital offer Physiotherapy services; therefore, these six hospitals; FETHA; FMC, Owerri; FMC, Umuahia; NOHE; NAUTH and UNTH were selected for the study.

Research Instruments

The Knowledge, Attitude and Practice (KAP) on Health Promotion Questionnaire was used for this study. The Questionnaire was adopted from a previous study KAP of Physiotherapists towards Health promotion in Nigeria by Abaraogu et al.,¹⁰. It is a 19 item self-reported Questionnaire comprising of four sections.

Section A: This section includes seven questions relating to the socio-demographic characteristics. It gathers information on the physiotherapist's age, gender, qualified years of practice as a Chartered Physiotherapist, city of the Physiotherapist, post qualification, work population group and total years of practice of the Physiotherapist.

Section B

This includes three sub questions on Knowledge of Health promotion by the Physiotherapists answered using a Likert scale for 'Agree, neutral and disagree'

Section C

This includes three sub questions on Attitude of Physiotherapists towards Health promotion answered using a Likert scale for 'often, sometimes, rarely and Never'

Section D

This includes seven questions on the Practice of Physiotherapists towards Health promotion answered using a Likert scale for 'often, sometimes, rarely and Never'

Psychometric Properties

Validity: This instrument has been content Validated in a previous study carried out in the Nigerian environment, which was piloted, modified and used by McMahon and Connolly to assess the Health promotion knowledge, Attitude and Practice of Chartered Physiotherapists in Ireland, and the authors granted Abaraogu¹⁰ the permission to modify and use the version.

Reliability: This instrument was also reported to have a good test-retest reliability with a coefficient range between 0.6 and 1.0 for sub-domains and 0.71 for the whole instrumental at 2- weeks interval among 18 Nigerian Physiotherapists that were chosen to represent different genders, practice orientations, and years of practice indicated a range of moderate to excellent scores¹⁰ Questions contained all through the survey instrument were adapted to suit the peculiarities of the Nigerian environment¹⁰

Procedure for Data Collection

Ethical approval was obtained from the Ethics Review committee of Faculty of Health science and Technology, Nnamdi Azikiwe University Nnewi before the commencement of the study. The informed consent of the participants was obtained prior to the study. Confidentiality of the participants was fully ensured using their initials instead of their full names. Afterwards, the researchers met with the participants in their clinics to explain the reason for the research to them and explain the questionnaire to them for clarity sake. The questionnaire was distributed to the various facilities by the principal researcher through recruited research assistants and each respondent was given three days to respond and return questionnaire via already mapped out courier services which were finally weigh-billed down to the location of the principal researcher.

Analysis of Data

Descriptive statistics of frequency, mean and standard deviation were employed to summarize the data.

Results

Participant's profile

Out of the one hundred and twenty-four (124) total population, a total of one hundred and five (comprising 56 males and 49 females) participated in this study with a response rate of 76.44%. Fifty participants (47.6%) had Bachelor degree, 35 persons (33.3%) had an MSc degree, 20 persons (19.0%) had PhD degree. In the population group, musculoskeletal specialty was 12 (39%), Neurology 31(37.1%), Peripheral arterial disease/Geriatrics 16 (10.5%), In-patient 5(4.8%), women health 8 (7.5%), others 1(1.0%). The result also showed that majority of the participants fall in the age range 30-39 (57.1%), had 16 years of practice (15.2%) and had been licensed physiotherapists within the range of 10-19 years (52.4%) as shown in table 1.

Majority of the respondents (95.2% 100 of 105) agreed that health promotion enables people to cope with health problems and attain the best possible quality of life; 92.4% believe that health promotion is about preventing disease; 72.4% believe that health promotion seeks to create a more equitable society; 76.2% believe that the role of health promotion is to alleviate the economic strain on the health service; 70.5 % believed that health promotion is predominately concerned with changing people's behavior; 60% believe that health promotion is about changing public policy; 61.9% believe that health promotion is about empowering individuals; 91.4% believe that

health promotion aims to reduce health inequalities; 97.1% believe that all Health professionals should promote a healthy lifestyle as shown in table 2 below.

About 95.2 %(100 of 105) believe that health promotion requires the physiotherapist to have an understanding of the clients' lives; 96.2% believe that health promotion is a fundamental part of physiotherapy; details of the respondents' attitudes toward health promotion are presented in Table 3. Furthermore, slightly fewer than half (43.8%, 46 of 105) had sometimes worked with physiotherapists who had a health promotion remit; 49.5% sometimes work with health professionals who were responsible for health promotion; 38.1 % usually worked with physiotherapy managers who saw health promotion as an important aspect of physiotherapy, and 50.5% usually actively incorporated aspects of health promotion into delivery of care to clients. Table 4 presents details of respondents' practice of health promotion.

Majority of the respondents (72.4%; 76 of 140) agreed that their training offered lots of opportunity to explore health promotion. Only 52.4% agreed that health promotion was well embedded in their course structure. A total of 79% agreed that health promotion should be incorporated into students' physiotherapy courses as a part of their undergraduate program in third or fourth year, and the majority (87.6%; 92 of 132) agreed that health promotion should be offered as a clearly de-fined theme. A total 84.8% agreed that careful consideration of policy implementation and guidelines for health promotion should be included in physiotherapy training programs as seen in table 5 below.

Table 1: Respondent's Sociodemographic Data

Variables	Category	Frequency	Percentage (%)
Sex	Male	56	53.3
	Female	49	46.7
Age	20-29	17	16.2
	30-39	60	57.1
	40-49	27	25.7
	50-59	1	1.0
PG	Musculoskeletal	12	39.0
	Neurology	31	37.1
	PAD/Geriatrics	16	10.5
	Women's health	8	7.6
	In-patients	5	4.8
	Others	1	1.0
Licensed Physiotherapist	<5yrs	25	23.8
	5-9	23	21.9
	10-19	55	52.4
	>20	2	1.9
Qualification	Bachelor degree	50	47.6
	Master's degree	35	33.3
	Doctor of Philosophy	20	19.0

Table 2: Respondent's Knowledge of Health Promotion

What is Health Promotion?	Agree	Neutral	Disagree	
Health promotion enables people to cope with health problems and attain the best possible quality of life.	100(95.2)	3(2.8)	2(1.9)	
Health promotion is about preventing disease	97(92.4)	2(1.9)	6(5.7)	
Health promotion seeks to create a more equitable society	76(72.4)	25(23.8)	4(3.8)	
The role of health promotion is to alleviate the economic strain on the health service.	60(76.2)	16(15.2)	9(8.6)	
Health promotion is predominately concerned with changing people's behavior	74(70.5)	13(12.4)	18(17.1)	
Health promotion is about changing public policy	63(60.0)	22(21.0)	20(19.0)	
Health promotion is about empowering individuals	65(61.9)	31(29.5)	9(8.5)	
Health promotion aims to reduce health inequalities.	96(91.4)	4(3.8)	5(4.8)	
All Health professionals should promote a healthy lifestyle.	102(97.1)	2(1.9)	1(1.0)	
How often do you encounter the following publications in your practice?	Often	Sometimes	Rarely	Never
The National Health Promotion Strategy documents	11(10.5)	24(22.9)	37(35.2)	33(31.4)
Changing Cardiovascular Health: National Cardiovascular Health Policies	14(13.3)	26(24.8)	31(29.5)	34(32.4)
The Ottawa Charter for Health Promotion (WHO, 1986)	13(12.4)	23(21.9)	34(32.4)	35(33.3)
Survey of Lifestyles, Attitudes and Nutrition	12(11.4)	36(34.3)	29(27.6)	28(26.7)
Do you believe you have sufficient knowledge of the following to engage in HP with clients?	Yes	No		
Concepts and Principles of Health Promotion	77(73.3)	26(24.8)		
Biological Determinants of Health	80(76.2)	25(23.2)		
Psychological Determinants of Health	76(74.3)	26(24.8)		
Socioecological Determinants of Health	70(66.7)	35(33.3)		
Behavior Change Theory	63(60.0)	42(40.0)		
Key Action Areas of Health Promotion	72(65.3)	38(31.0)		

Table 3. Respondent's attitude towards health promotion and Health Promotion Action

Questions	Agree	Neutral	Disagree
Health promotion requires the physiotherapist to have an understanding of the clients' lives	100(95.2)	3(2.9)	2(1.9)
Health promotion is a fundamental part of physiotherapy	101(96.2)	3(2.9)	1(1.0)
Health promotion is less important than other aspects of the physiotherapist's role	15(14.3)	13(12.4)	77(73.3)
Physiotherapists are well placed to respond to the client's health promotion needs	78(74.3)	16(15.2)	10(9.5)
Physiotherapists usually have too much else to do to be able to offer health promotion	26(24.8)	32(30.5)	47(44.8)
Physiotherapists empower clients to change unhealthy aspects of their lives	97(92.4)	5(4.8)	3(2.9)
Physiotherapists' health promotion practice is not supported by a strong evidence base	26(24.8)	26(24.8)	53(50.5)
Physiotherapists should 'model' good health behavior in order to give health promotion advice	98(93.3)	2(1.9)	5(4.8)
Physiotherapists should be required to engage in health promotion as part of government policy	101(96.2)	1(1.0)	3(2.9)
All physiotherapists should promote a healthy lifestyle	102(97.1)	1(1.0)	2(1.9)
A physiotherapist who is a smoker is just as good a health promoter as one who is not a smoker	35(33.3)	23(21.9)	47(44.8)
Physiotherapy students have a role in health promotion	99(94.3)	6(5.7)	2(1.9)
Physiotherapists should enable individuals, groups, communities and organizations to build capacity for health promotion action to improve health and reduce health inequities.	103(98.1)	2(1.9)	0(0.0)
Physiotherapists should advocate with, and on behalf, of individuals, communities and organizations to improve health and well-being and build capacity for health promotion action.	100(95.2)	5(4.8)	1(1.0)
Physiotherapists should work collaboratively across disciplines, sectors and partners to enhance the impact and sustainability of health promotion action.	103(98.1)	1(1.9)	2(1.0)
Physiotherapists should communicate health promotion action effectively, using appropriate techniques and technologies for diverse audiences.	102(97.2)	3(2.9)	0(0.0)
Physiotherapists should contribute to the development of a shared vision and strategic direction for health promotion action.	103(98.1)	2(1.9)	0(0.0)

Table 4. Respondent's practice of Health Promotion

Questions	Often	Sometimes	Rarely	Never
How often have you worked with physiotherapists who have a specific health promotion remit?	21(20.0)	46(43.3)	34(32.4)	4(3.8)
How often have you worked with health professionals who are responsible for health promotion?	30(28.6)	52(49.5)	18(17.1)	5(4.9)
How often have you worked with physiotherapy managers who see health promotion as an important aspect of physiotherapy?	40(38.1)	36(34.3)	27(25.7)	2(1.9)
Do you actively incorporate aspects of health promotion in the delivery of care to clients?	49(45.7)	53(50.5)	2(1.9)	1(1.0)

Table 5. Respondent's view on Physiotherapy Training

	Agree	Neutral	Disagree
My training offered lots of opportunities to explore health promotion	76(72.4)	12(11.4)	16(15.2)
Health promotion was well embedded in the course structure	55(52.4)	27(25.7)	23(21.9)
Health promotion was predominantly taught in one module	48(45.7)	28(24.8)	30(28.6)
Specific health promotion module in first year	61(58.1)	22(21.0)	22(21.0)
Specific health promotion module in third or fourth year	83(79.0)	12(11.4)	10(9.5)
Health promotion offered as a clearly defined theme within key modules on the course	92(87.6)	6(5.7)	7(6.7)
Specific health promotion placements	89(84.8)	11(10.5)	5(4.8)
Careful consideration of policy implementation/guidelines	89(84.8)	12(11.4)	3(2.9)
Exploration of how policy relates to practice	88(83.8)	13(12.4)	4(3.8)

Discussion

This is a descriptive study that determined the knowledge, attitudes, and practice of health promotion among physiotherapists in the South-East of Nigeria. From the result, majority of the population possess sound knowledge and implement health promotion in their practice. First, we considered how the sample represents the population of physiotherapists in South-East Nigeria, then we related the findings with the result from other studies.

The male population was slightly more the females in the work force by 6.6%. This is consistent with the reports from other studies conducted in Nigeria ^{10,11,12,13}. This is because the pioneers of physiotherapy training in Nigeria were men. Although, the population sample is a good representation of physiotherapists in South-East Nigeria.

Almost all the participants gave a positive response on having the knowledge of health promotion in aiding people to manage health problems and achieve good quality of life. There was also positive affirmation from the physiotherapists about being aware that health promotion prevents the occurrence of disease and modifies the lifestyles of individuals to improve their health status. This is consistent with the results from other studies that indicated the role of health promotion in improving peoples' lifestyles and this should be the basis in tackling critical health issues in third world countries particularly Nigeria^{10,14,15,16}

Moreover, the study participants are majorly aware that health promotion reduces health inequalities and can lead to individual empowerment. Hence, it is capable of reducing the economic stress on the health service and creating an equitable society. An

interesting part of this analysis is that most of the respondents were aware that policy changes should be considered in order to encourage health promotion practices and activities. This is in contrast with the result from the study conducted by Abaraogu *et al*,¹⁰ which stated that few respondents are of the opinion that health promotion activities involved public policy changes to aid the improvement of practice. Explaining further on this, the study indicated that the reason behind this response is due to the fact that these respondents lack absolute knowledge of the factors that are known as the determinants of health.

Hence, it would be appropriate to state that the physiotherapists in South-East Nigeria have good knowledge about the determinants of health. Most of the respondents have positive attitude towards the implementation of health promotion activities in their clinical practice. This was evident in the response from 97% of the study population that physiotherapists empower clients to change some unhealthy lifestyles. In addition, it was indicated that physiotherapists should give health promotion advice by modelling good health behavior. This was supported by McMahon *et al*,¹⁴ that revealed that Physiotherapists appear to possess positive attitudes towards health promotion by adopting it as one of their basic role in clinical practice. It further identified some barriers that are against its implementation such as time constraints, absence of health promotion training and attitudes of patients towards the adoption of health promotion activities. However, the responses from the physiotherapists regarding whether they were adequately equipped with health promotion knowledge during their undergraduate training, have been inconclusive. Although 72.4% of the respondents agreed that their undergraduate training had offered them many opportunities to explore health promotion, only 45.7% of them stated that

health promotion was incorporated in the course structure, while 58.1% indicated that health promotion was taught in one of the modules. Following this, it's hereby suggested that health promotion training be incorporated into the education of health professionals at all levels, both undergraduate and postgraduate. This was supported by Mooney *et al*,¹⁷ they emphasized the need to include health promotion in the training of nursing students. It is important that Physiotherapy training should be well tailored to ensure that there is proper adoption of health promotion into their clinical practice, by exposing them to opportunities for the acquisition of knowledge about health promotion^{18,19}. This training enhances students' confidence in applying the acquired health promotion knowledge and skills to their clinical practice²⁰. There is also need for physiotherapists to go for continuing education programs that would improve their knowledge of health promotion practice²¹. In addition, physiotherapists' knowledge, expertise, and confidence in health promotion activities can be improved via entry-level curriculum reviews that bring in modules that are specific to health promotion into the system²²

Furthermore, majority of the respondents are of the opinion that health promotion is the basic aspect of physiotherapy. Hence, physiotherapists should adopt health promotion roles that would aid in improving health and minimize inequalities. On the other hand, most of them believed that they are in good position to respond to their clients' needs relating to health promotion and that they should participate in other health promotion activities, such as smoking cessation, physical activity and reduced alcohol consumption. The findings are consistent with the results from other studies that stated that physiotherapists play an

important role in several health promotion activities^{23,14}

The responses from the Physiotherapists in this study have various implications for the professional practice and role of physiotherapists in South-East Nigeria. Their positive attitudes towards health promotion was obvious in their clinical practice such that a greater part of the population indicated that they are actively implementing the practice of health promotion activities in client management. Although, this study did not determine the various inputs, processes or outcome measures for the health promotion activities that were delivered by the physiotherapists because it's not within the scope of this study.

According to The Ontario Physiotherapy Leadership Consortium model⁸, physiotherapists should have health promotion activities at the level of determinants of health; lifestyle, disease prevention, injury and the general health and wellness of the body. The inputs at the level of the determinants of health; lifestyle; and disease, injury, and illness through promotion, prevention, and rehabilitation to see outcomes at both the individual and the population level of health and wellness.

Conclusions

From the study, it can be concluded that Physiotherapists in South-East Nigeria have good knowledge of health promotion. Their attitude towards health promotion was fair and they possessed a good implementation of health promotion in their practice. Furthermore, the respondents also indicated that their undergraduate training had offered them many opportunities to explore health promotion.

Recommendations

More emphasis should be made in health promotion in the undergraduate curriculum in lieu of enhancing multidisciplinary team

empowerment with regard to health promotion in both public and private sectors. While this research considered the knowledge of practicing physiotherapist, more extensive research should be emphasized in conducting and planning evidence based approach in the line of health promotion among physiotherapists.

Furthermore, the use of health promotion models should be implemented for research purposes in physiotherapy profession when practicing health promotion or primary healthcare in order to discover indicators as a measuring tool and to provide constant follow-ups in developing the program. More media involvement to educate masses in both rural areas as part of capacity building with regard to health promotion, education and prevention.

References

1. Proulx K. What is health? HuffPost wellness blog [blog]. 3 June. Accessed November 19 2020. https://www.huffpost.com/entry/what-is-health_b_10248944; 2017.
2. WHO Global Health promotion conferences, 9th Global conference on Health promotion, shanghai. Health Promotion; 2016.
3. Gorin, S., and Arnold. (2006) *Health promotion in practice*. Jossey-Bass, San Francisco.
4. World Health Organization. Milestones in Health promotion, statements in Global Conferences. Accessed March 10, 2011. http://www.tricare.mil/PHMMSC/mm_guide/section3/item6.pdf; 2009. World Health Organization. (2011).
5. World Health Organization. Health Promotion. http://www.who.int/topics/health_promotion/en/; 2013.
6. Zenzano, T. (2011). The roles of healthcare professionals in implementing

clinical prevention and population health. *American Journal of preventive Medicine* 40(2), 261-267.

7. World Health Organization. Non-communicable Diseases Country Profiles. Geneva; 2014. doi:10.1111/j.1365-3156.2008.02150.x.dhfr.

8. Ontario Physiotherapy Leadership Consortium. Physiotherapists in health promotion: findings of a forum. *Physiother Can.* 2011; 63(4):391-394. doi:10.3138/physio.63.4.391.

9. Dean E, Al-Obaidi S, De Andrade AD, et al. The First Physical Therapy Summit on Global Health: implications and recommendations for the 21st century. *Physiother Theor Pract.* 2011; 27(8):531-547. doi:10.3109/09593985.2010.544052.

10. Abaraogu U, Uzo O, Onyinyechukwu D, Henrietta O. Knowledge, Attitudes and the practice of Health promotion among physiotherapists in Nigeria. *Physiotherapy Can.* 2019;68(1):37-45.

11. Akinpelu AO, Eluchie NC. Familiarity with, knowledge, and utilization of standardized outcome measures among physiotherapists in Nigeria. *Physiother Theor Pract.* 2006;22(2):61-72. doi:10.1080/09593980600564469. Medline:16703815.

12. Odebiyi, D.O., Adegoke, B.A. (2005). Gender distribution of physiotherapy graduates from Nigerian universities. *Journal Nigeria Society of Physiotherapy.*; 15:45-7.

13. Ibikunle PO, Kalu ME, Useh U. Professional motivation and plan amongst graduating Nigerian physiotherapy students. *J Hum Ecol.* 2013;44(2):203-206. doi:10.1080/09709274.2013.11906659.

14. McMahon N, Connolly C. Health promotion knowledge, attitudes and practices of chartered physiotherapists in Ireland: a national survey. *Physiother Pract Res.* 2013;34(1):21-28. doi: 10.3233/PPR-2012-0008.

15. Durstine JL, Gordon B, Wang Z, Luo X. Chronic disease and the link to physical activity. *J Sport Health Sci.* 2013;2(1):3-11. doi:10.1016/j.jshs.2012.07.009.

16. Van Dam RM, Li T, Spiegelman D. Combined impact of lifestyle factors on mortality: prospective cohort study in US women. *BM J Physiother.* 2008;337:a1440. doi:10.1136/bmj.a1440. Medline:18796495.

17. Mooney B, Timmins F, Byrne G. Nursing students' attitudes to health promotion to: implications for teaching practice. *Nurs Educ Today.* 2011;31(8):841-848. doi:10.1016/j.nedt.2010.12.004. Medline:21215497.

18. Adams R, Jones A, Lefmann S, Sheppard L. Rationing is a reality in rural physiotherapy: a qualitative exploration of service level decision-making. *BMC Health Serv Res.* 2015;15(1):121. doi:10.1186/s12913-015-0786-3.

19. Mazur J, Szumska-Olczak A. Health promotion indicators- selected model approaches. *Med Wieku Rozwoj.* 2000;4(4)(suppl 1):53-66.

20. Chen WW. The relationship between health education and health promotion: A personal perspective. *Am J Health Educ.* 2001;32(6):369-370. doi:10.1080/19325037.2001.10603499.

21. McMahon S, O'Donoghue G, Doody C. Standing on the precipice: evaluating final-year physiotherapy students' perspectives of their curriculum as preparation for primary health care practice. *Physiother Can.* 2016;68(2):188-196. doi:10.3138/ptc.2015-11E. Medline:27909366.

22. Litaker D, Cebul RD, Masters S. Disease prevention and health promotion in medical education: reflections from an academic health center. *Acad Med.* 2004;79(7):690-697. doi:10.1097/00001888-200407000-00017. Medline:15234923.

23. Goodgold S. Wellness promotion beliefs and practices of pediatric physical therapists. *Pediatr Phys Ther.* 2005;2(2):148-157.

<https://doi.org/10.1097/01.PEP.0000163076.97049.A8>. Medline:16357665.

24. Adaku E. Why FG must act on integrated healthcare, health promotion. Vanguard Newspaper: February 22, 2017: URL. 2017

25. Dean E, de Andrade AD, O'Donoghue G, et al.. The Second Physical Therapy Summit on Global Health: developing an action plan to promote health in daily practice and reduce the burden of non-communicable diseases. *Physiother Theor Pract*. 2014;30(4):261-275. doi:10.3109/09593985.2013.856977.

26. Murray NG, Low BJ, Hollis C, Cross AW, Davis SM. Coordinated school health programs and academic achievement: a systemic review of the literature. *J Sch Health*. 2007:589-600.

27. World Health Organization. The Ottawa charter for Health Promotion. Accessed November

21.[http://www.who.int/healthpromotion/con](http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index4.html)

[ferences/previous/ottawa/en/index4.html](http://www.who.int/healthpromotion/conferences/previous/ottawa/en/index4.html).28: First International Conference on Health Promotion. Ottawa; 1986.

28. Frantz JM. Advocating evidence based health promotion in physiotherapy. *S Afr J Physiother*. 2008;64(1):28-30. doi:10.4102/sajp.v64i1.97.

29. Fricke M. Physiotherapy and primary health care: evolving opportunities. http://www.manitobaphysio.com/pdf/FinalMBPHCReportJune_05_000.pdf; 2005. Department of Physical Therapy, School of Medical Rehabilitation, University of Manitoba:1-62.

30. Joseph PM. Knowledge, attitude and practice of physiotherapists regarding their role in health promotion in Gauteng Province, South Africa. University of Limpopo Institutional Respiratory. Accessed June 14 2016.

<http://hdl.handle.net/10386/446>; 2011. Faculty of Sciences, School of Health Sciences.