

Undergraduate physiotherapy education in Malawi – The views of students on disability

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Abstract

Background

The College of Medicine in Malawi offers an undergraduate physiotherapy programme which started in 2010. The programme aims at training competent physiotherapists who can address the needs of people with disabilities. Therefore it is important to ensure that the perceptions of physiotherapy students towards disability are appropriate.

Objectives

The study explored the views of the first cohort of physiotherapy students (n=19) in the pre-medical class in the College of Medicine, University of Malawi, on disability.

Methods

An audit of the views of premedical physiotherapy students was carried out in 2010 using the Q methodology.

Results

Two independent factors emerged which captured the views of 19 students on disability. Most of the views expressed suggest that the students empathised with people with disabilities. Participants perceived that people with disabilities can have a good quality of life like everyone else, and are as intelligent as people without disabilities. However, some participants also expressed some discomfort when around people with disabilities.

Conclusion

While there was consensus on some positive views, the negative viewpoints have the potential to act as a barrier to the rehabilitation of people with disabilities. The curriculum should ensure that the positive views are reinforced throughout the training programme, while the negative viewpoints are reversed.

Background

The College of Medicine, University of Malawi, was opened in 1991 to train the calibre of healthcare professionals, including physiotherapists, who would address the health needs of the people¹. The degree program in physiotherapy started in 2010 with the admission of 26 students into the one year pre-medical sciences program, which is a foundation program to which students enrol before their undergraduate courses². The successful students would then be admitted into the 4-year undergraduate honours programme. Although the World Confederation of Physical Therapy (WCPT) recognizes that the education of physiotherapists takes place in very diverse social, economic and political environments throughout the world³, every attempt was made to ensure that the curriculum developed was in line with the guidelines provided by the WCPT for professional entry level education. Particular attention was given to meet the expectation articulated by the WCPT that the entry-level curriculum allocated a minimum of 1000 hours to supervised

clinical education to prepare the students for the workplace⁴. For the purpose of this paper, the description of physiotherapy by the WCPT is pertinent - Physiotherapy provides services to individuals and populations to develop, maintain, and restore maximum movement and functional ability throughout the lifespan³. This includes providing services in circumstances where movement and function are threatened by ageing, injury, diseases, disorders, conditions or environmental factors. Physiotherapy is concerned with identifying and maximizing quality of life and functional movement potential, within the spheres of health promotion, disease and injury prevention, maintenance of wellness, treatment in illness, and rehabilitation of people with disability. This encompasses physical, psychological, emotional and social wellbeing. Physiotherapy practice involves the interaction between the physiotherapist, patients or clients, families, care givers, other health care providers and communities, in a process of assessing movement potential and in establishing agreed upon goals and objectives using knowledge and skills unique to physiotherapists³. The physiotherapist therefore plays a major role in the rehabilitation of people with disabilities.

The burden of disease in Malawi is made up of communicable diseases, non-communicable diseases, and injuries⁵. Disability due to an injury, illness, or chronic health problems is one of the most significant issues facing the country, with an under-reported prevalence of 4.18%⁶. It presents a considerable challenge, both in terms of financial and human loss, with enormous social and economic impact on the society. Existing knowledge and literature on disability in Malawi suggest that there is enormous lack of awareness about disability generally and the causes of various forms of disability⁷. This lack of information often led people to making up explanations about illness and disease. Bedford and others⁸ reported five theories of clubfoot, namely God, the devil, witchcraft or curses, biological reasons, and inherited condition. In addition, people with disabilities are often subjects of myths and discrimination in relation to their disability⁹, and face various challenges¹⁰. These reports are not peculiar to Malawi as they have been reported for other developed and developing countries.¹¹⁻¹⁵

The Ministry of Health in Malawi has committed itself to stabilize and improve the health status of Malawians by ensuring availability of an effective health care delivery system that is capable of promoting health, preventing disease, protecting life and fostering wellness. To achieve these goals, the Federation of Disability Organizations in Malawi (FEDOMA) committed itself to enhance the welfare of all persons with disabilities and enable them to assume their rightful role in society¹⁶. The importance of healthcare professionals (including physiotherapists) having positive attitudes towards people with disabilities has been highlighted, as the potential impact of the negative attitudes has been identified as a barrier to successful rehabilitation and reintegration into society¹⁷⁻¹⁹. Students who are enrolled in these professional programs may have inherent attitudes towards the clients they may work with in the future^{19,20}. These attitudes may be influenced by many factors, including the level of their professional education as well as their

cultural values²¹. It is therefore possible that if a student holds inappropriate attitudes toward people with disabilities beyond graduation, the attitudes may affect the student's ability to manage such clients.²²

A single site study conducted in the United Kingdom revealed that at the start of their studies, physiotherapy students' attitudes were significantly more negative than those of occupational therapy students¹⁷. The students expressed greater discomfort in social interaction with people with disabilities. However, the attitudes became significantly more positive by the end of their studies. In a follow up national study¹⁹, similar trends were observed. The attitudes of physiotherapy students were less positive than those of occupational therapy students at the beginning and end of their respective programs. Stachura and Garven¹⁹ had suggested that physiotherapy practice, with its focus at an impairment level and tendency to focus on what people with disabilities cannot do, could possibly engender negative attitudes. The authors therefore proposed the inclusion of high-quality disability training in physiotherapy education to challenge the potentially negative stereotypes.

Various instruments have been developed to assess attitudes towards people with disability, notably the "Attitudes Toward Disabled Persons Scale (ATDP)", and "Multidimensional Attitudes Scale Toward Persons With Disabilities (MAS)"²³, and the "Disability Social Relations Generalised Disability Scale (DSRGD)"²⁴. The MAS posits that attitudes are composed of three dimensions, namely affect, cognition, and behaviour. It is believed that attitudes help form cognitive relationships, which in turn may predispose to behaviours. Due to the weaknesses in the use of the instruments in exploring the attitudes towards people with disabilities, other promising approaches were recommended, including the conjoint analysis approach^{18,25} and the Q-methodology²⁶. However Cross²⁶ advocated that the Q-methodology was an appropriate and relevant means of exploring and studying attitudes, as it is a more robust technique for measuring subjective opinion. In addition, Q-methodology was reported to be a useful tool for identifying different views points related to disability issues^{27,28}. The purpose of Q methodology is to reveal subjective structures, attitudes and perspectives from the standpoint of the person or persons being observed. It is argued that Q methodology combines the strengths of both qualitative and quantitative research, and is more focused than a general attitude questionnaire. The aim of the methodology is to describe the range and diversity of views expressed about a topic, rather than to make claims about the percentage of people expressing them. The aim of this manuscript therefore, is to report the outcome of the audit of the views of physiotherapy students in the pre-medical class in the College of Medicine, University of Malawi, on disability. The purpose of the audit was to ensure that the 4-year curriculum would produce graduates with favourable views about people with disabilities²¹.

Methods

Q-methodology

Q methodology entails the initial development of 'concourse' or body of information related to the topic of interest²⁷. From this large body of information, the researcher would then select statements that represent as far as possible a broad range of opinions on the selected topic according to some conceptual framework. This forms the Q-set which is then presented to the research participants. The participants,

referred to as the P-set, are then requested to read through the Q-set and rank order the statements along a predefined dimension, for example from -4 (strongly disagree) to +4 (strongly agree). Also the participants are not selected randomly of statistical representativeness but purposively for viewpoint or a certain type of experience²⁸.

Selection of the P-set

The participants in the audit were the first cohort of 26 students in the pre-med year in 2010, who on successful completion, would register for the 4-year undergraduate Physiotherapy at the College of Medicine, University of Malawi. The admission requirements into the premedical sciences program for physiotherapy students do not include the views of the students towards people with disabilities². The students were therefore invited to take part in a workshop that was to audit their views towards people with disabilities. The purpose of the audit was explained to all the students to obtain their consent. Twenty three students (9 female, 14 male) aged 18 to 25 years agreed to participate, and they constituted the P-set. The remaining three students were absent from the workshop.

Development of the Q-set

The statements for the Q-set were developed at a workshop with academic staff in the Department of Health and Rehabilitation Science, University of Cape Town in South Africa²⁷. The 30 statements (Table 1) were derived from responses put forward in a research question at the workshop, which was – "What are your views about disability in terms of its impact on the affected person, their families and on the society?" based on the principles of the international framework on equalisation of opportunities and human rights.

Q-sorting

The process and intention of Q-methodology were explained to the participating students. The sorting process was initiated by requesting each student to read carefully through all the statements, and then to divide the statements into three piles: statements a participant agrees with, those the participant disagreed with, and those about which the participant is neutral or undecided. Participants were then requested to rank order the statements by placing them on a grid from "most agreed with" (+4) to "most disagreed with" (-4). This sorting process was repeated until all statement cards in the three piles had been allocated onto the response grid. On completion of the Q-sorting task, participants were advised that they were free to make changes, prior to confirming their final arrangement²⁷⁻²⁹. The correlation matrix was calculated by entering the q-sorts of the 23 participants into the Q analysis program PCQ^{27,28} to identify the level of agreement and disagreement between the participants.

Analysis of Q-sort

The data of two of the 23 participants were excluded as they were incomplete. The correlation matrix was then subjected to factor analysis to identify participants who shared similar or dissimilar views²⁹. Participants with similar views on disability would share the same factor.

Results

Two factors (named Factor 1 and Factor 2) emerged from

the analysis which captured the viewpoints of the students on disability. In Factor 1, a third bipolar factor emerged based on the data of 2 students. A bipolar factor signifies two opposite viewpoints expressed by two participants loading significantly on the same factor. Bipolar factors can only be considered significant if more than 2 people fall into the category³⁰. The 2 students were thus excluded from further analysis. Therefore the Q sorts of fifteen (8 females and 7 males) of the remaining 19 participants were flagged as exemplars of Factor 1, while the Q sorts of 4 participants (all males) contributed to Factor 2.

Table 3: Statements participants contributing to factor 1 disagreed with

STATEMENTS No.	STATEMENT	RANK SCORE
21	Looking after a person with disabilities needs certain qualities I don't think I have.	-4
30	Disability is a punishment for parents.	-4
1	A child with disability is a burden on the family.	-3
6	A person with disabilities will always be dependent on others.	-3
9	People with disabilities make me feel uncomfortable.	-3

1. A child with disability is a burden on the family	2. The brothers and sisters of children with disabilities suffer as well	3. Nobody would choose to have a child with disabilities
4. It takes healthcare workers to get the best out of people with disabilities	5. People with disabilities are a financial burden on the country	6. A person with disabilities will always be dependent on others.
7. Knowing someone with disability helps you to understand what it is to be a human being	8. Every effort should be made to try and prevent disability from occurring	9. People with disabilities make me feel uncomfortable
10. A person with a disability makes a valuable contribution to a caring relationship	11. It is wrong to treat people with disabilities as a group. They are all individuals	12. People with disabilities are dependent and soft hearted
13. The healthcare profession points an ugly picture of what it is like to have a disability	14. It is not the disability a person has that makes his/her life difficult but rather the unfair treatment that he/she receives from society	15. It is better to say "people with disability" rather than "disabled people"
16. I feel so sorry for someone who has a baby with a disability	17. It must be a continuous struggle to have a disability	18. The more we know about the causes and nature of disability, the better we will be to tackle issues about disability
19. People with disabilities can have as good a quality of life as everyone else	20. People with disabilities have a right to be heard within the society, especially when it comes to decisions that affect them	21. Looking after a person with disabilities needs certain qualities I don't think I have
22. Having a disability is just one of the ways that people are different from each other, like race or religion or culture	23. People with disabilities are just as intelligent as people without disabilities	24. I don't think someone with disability can have many friends
25. Saying that having a child with disability is the same as having a normal child is just denying reality	26. People with disabilities are as happy as people without disabilities	27. A disabled child brings the family together
28. People with disabilities can care for themselves and their children	29. Disability has serious financial implications for families	30. Disability is a punishment for parents

In summary it seems that factor 1 is made up of statements that express an understanding of people with disabilities.

Factor 2

In table 4, the participants expressed strong views that no one would choose to have a disabled child (+4; S3), and that every effort should be made to prevent disability (+4; S8). Similarly in table 5, the participants disagreed with the perception that people with disabilities are always dependent on others (-4; S6), and that a person with a disability can have many friends (-4; S24). In summary, statements contributing to this factor mostly empathised with people with disabilities, as in Factor 1.

Table 4: Statements that participants contributing to factor 2 agreed with

STATEMENTS No.	STATEMENT	RANK SCORE
3	Nobody would choose to have a child with disabilities	+4
8	Every effort should be made to try and prevent disability from occurring.	+4
19	People with disabilities can have as good a quality of life as everyone else	+3
20	People with disabilities have the right to be heard within the society, especially when it comes to decisions that affect them.	+3
23	People with disabilities are just as intelligent as people without disabilities.	+3

Factor 1

Table 2 presents the statements the participants loading onto this factor agreed with. The participants agreed that it was the unfair treatment of society that makes the life of a person with disability difficult (+4; S14). They also felt that people with disabilities, like everyone else, can have a good quality of life (+3; S19), and also have the right to be heard about issues affecting them (+4; S20).

Table 5: Statements that participants contributing to factor 2 disagreed with

STATEMENTS No.	STATEMENT	RANK SCORE
6	A person with disabilities will always be dependent on others.	-4
24	I don't think someone with disability can have many friends.	-4
5	People with disabilities are financial burden on the country.	-3
27	A disabled child brings the family together.	-3
30	Disability is a punishment for parents.	-3

Statements that the participants disagreed with (Table 3) included the views that they did not possess the qualities to look after a person with disability (-4; S21), the presence of people with disabilities made them uncomfortable (-3; S9), and that disability was a punishment for parents (-4; S30). According to this factor, people with disabilities were not considered a burden (-3; S1, S6).

Table 2: Statements participants contributing to factor 1 agreed with

STATEMENTS No.	STATEMENT	RANK SCORE
14	It is not the disability of the person that makes their lives difficult but rather the unfair treatment that they receive from society.	+4
20	People with disabilities have a right to be heard within society, especially when it comes to decisions that affect them.	+4
18	The more we understand about the causes, nature and epidemiology of disability, the better we will be able to tackle the issue.	+3
19	People with disabilities can have as good a quality of life as everyone else.	+3
23	People with disabilities need their own community spaces to some degree.	+3

The similarities between the factors are presented in the consensus statements (Table 6), while the significant (p<0.05) differences between the two factors are presented in the distinguishing statements (Table 7).

Table 6: Consensus statements between factors 1 and 2

		Factor 1	Factor 2
STATEMENTS No.	STATEMENT	RANK SCORE	RANK SCORE
12	People with disabilities are dependent and soft hearted	-2	-2
19	People with disabilities can have a good quality of life as everyone else.	+3	+3
23	People with disabilities are just as intelligent as people without disabilities.	+3	+3

Table 7: Distinguishing statements between factors 1 and 2^a. (p<0.05)

		Factor 1	Factor 2
STATEMENTS No.	STATEMENT	RANK SCORE	RANK SCORE
7	Knowing someone with disability helps you to understand what it is to be a human being.	2	-2
9	People with disabilities make me feel uncomfortable	-3	1
1	A child with disability is a burden on the family	-3	2
21	Looking after a person with disabilities needs certain qualities I don't think I have.	-4	0

Discussion

Physiotherapists play a major role in the rehabilitation of people with disabilities.³ It is therefore necessary that physiotherapy students must hold appropriate views towards their clients. Overall, it is encouraging that most of the views expressed by the students are positive. However, appropriate caution should be exercised in the interpretation of the two factors that emerged from this study as they may not represent all possible views on disability²⁸. There were similarities between the two factors, which are expressed in the three consensus statements in Table 6. These consensus statements are in line with the social model of disability which promotes the United Nations Standard Rules of Equalization of Opportunities and autonomy for people with disabilities¹⁰⁻¹³.

When the individual views of the students who contributed to factor 1 and factor 2 are pooled together in their respective sorting grids²⁷, this audit highlighted some seemingly contradictory views, suggesting that in reality, individual views about disability may not be located in the same theoretical framework²⁸. While most of the differences expressed in the views in the two factors are not statistically significant, it is important to capture these differences so that they could be addressed in the curriculum.

In Factor 1, the participants disagreed with views of feeling sorry for someone having a baby with disability²⁸, and discomfort around people with disabilities unlike the physiotherapy students in the United Kingdom^{17,19}. The participants were also of the view that they possessed the qualities needed to look after people with disabilities. These three views may project a level of confidence and empathy in the participants about their readiness to interact with people with disabilities. However, the participants disagreed with the views that disability has serious financial implications on families, and a child with disability is a burden on the family. These views may be indicators that the students were unaware of the realities encountered by the caregivers of children with disabilities²⁸. Similarly for factor 2, participants were of the view that people with disabilities are unable to care for themselves and their families, and that the

environment does not add to the difficulties in the lives of people with disabilities¹⁴. These views may also be indicative of the students' perceived images of disability, and should be addressed¹¹.

It is difficult to confirm that the viewpoints described above were objective²⁸, and indicative of the attitudes of these students towards people with disabilities. Each viewpoint is considered to be a subjective "worldview" of the individual, and it could have been influenced by many factors including values, experiences and culture⁷⁻⁹. It is also unclear if there was a patriarchal influence in the views of the four male participants who contributed to Factor 2. While there was consensus on some positive views in the two factors, the negative viewpoints have the potential to act as a barrier to the rehabilitation of people with disabilities¹⁷⁻¹⁹. Allowing the participants to retain these inherent views on disability will only add to the discrimination and challenges people with disabilities encountered¹⁸⁻¹⁰. Given the students' views about disability, the curriculum should make provision to reinforce the positive viewpoints, and ensure that the negative viewpoints are reversed before the students graduate.

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References

- Muula AS. Malawi College of Medicine – still not an ivory tower. Croatia Medical Journal 2010, 51:121-122
- Undergraduate programmes in the College of Medicine, University of Malawi. <http://www.medcol.mw> (Accessed 22nd September 2011)
- World Confederation for Physical Therapy. Policy statement: Description of physical therapy. London, UK: WCPT; 2011. www.wcpt.org/policy/ps-descriptionPT (Accessed 22nd September 2011)
- Crosbie J, Gass E, Jull G, Morris M, Rivett D, Ruston S, Sheppard L, Sullivan J, Vujnovich A, Webb G, Wright T. Sustainable undergraduate education and professional competency. Australian Journal of Physiotherapy 2002, 48:5-7
- Bowie C. The burden of disease in Malawi. Malawi Medical Journal 2006, 18(3):103-110
- National policy on equalization of opportunities for persons with disabilities. Ministry of Social Development and Persons with Disabilities, Malawi; March 2006
- Braathen SH, Kvam MH. 'Can anything good come out of this mouth?' Female experiences of disability in Malawi. Disability and Society 2008, 23(5):461-474
- Bedford, KJA, Chidothi P, Sakala H, Cashman J, Lavy C. Clubfoot in Malawi: local theories of causation. Tropical Doctor 2011, 41(2):65-67
- Braathen SH, Ingstad B. Albinism in Malawi: knowledge and beliefs from an African setting. Disability and Society 2006, 21(6):599-611
- Rohleder P, Braathen SH, Swartz L, Eide AH. HIV/AIDS and disability in Southern Africa: a review of relevant literature. Disability and Rehabilitation 2009, 31(1):51-59
- Amosun SL, Volmink L, Rosin R. Perceived images of disability: The reflections of two undergraduate medical students in a university in South Africa on life in a wheelchair. Disability and Rehabilitation 2005, 27(16):961-966
- Amosun SL, Mutimura E, Frantz JM. Health promotion needs of

physically disabled individuals with lower limb amputation in Rwanda. *Disability and Rehabilitation* 2005, 27(4):837-847

13. Maart S, Jelsma J. The sexual behaviour of physically disabled adolescents. *Disability and Rehabilitation*, 2010,32:438-443

14. Maart S, Eide A, Jelsma J, Loeb M, Ka'Toni M. Environmental barriers experienced by urban and rural disabled in South Africa. *Disability and Society* 2007, 22 (4), 357-369.

15. Brown T, Mu K, Peyton CG, Rodger S, Stagnitti K, Hutton E, Casey J, Watson C, Hong CS, Huang Y, Wu C. Occupational therapy students' attitudes towards individuals with disabilities: A comparison between Australia, Taiwan, the United Kingdom, and the United States. *Research in Developmental Disabilities* 2009, 30:1541-1555

16. Federation of Disability Organizations in Malawi. <http://www.fedoma.org> (Assessed 15 September 2010)

17. Stachura K, Garven F. Comparison of occupational therapy and physiotherapy students' attitudes towards people with disability. *Physiotherapy* 2003, 89(11)653-664

18. Rosenthal DA, Chan F, Livneh H. Rehabilitation students' attitudes toward persons with disabilities in high- and low-stakes social contexts: a conjoint analysis. *Disability and Rehabilitation* 2006, 28(24):1517-1527

19. Stachura K, Garven F. A national survey of occupational therapy students' and physiotherapy students' attitudes to disabled people. *Clinical Rehabilitation* 2007; 21:442-449

20. Brown T, Mu K, Peyton CG, Rodger S, Stagnitti K, Hutton E, Casey J, Watson C, Hong CS, Huang Y, Wu C (2009) Occupational therapy students' attitudes towards individuals with disabilities: A comparison between Australia, Taiwan, the United Kingdom, and the United States. *Research in Developmental Disabilities*, 30(6):1541-1555

21. Au KW, Man DWK. Attitudes toward people with disabilities: a comparison between health care professionals and students. *International Journal of Rehabilitation Research* 2006, 29(2):155-160

22. Satchidanand N, Gunukula SK, Lam WY, McGulgan D, New I, Symons AB, Withiam-Leitch M, Akl EA. Attitudes of healthcare students and professionals towards patients with physical disability: A systemic review. *American Journal of Physical Medicine and Rehabilitation* 2012, 91(6):533-545

23. Findler L, Vilchinsky N, Werner S. The multidimensional attitudes scale toward persons with disabilities (MAS): Construction and validation. *Rehabilitation Counselling Bulletin* 2007, 50(3):166-176

24. Hergenrather K, Rhodes S. Exploring undergraduate student attitudes towards persons with disabilities. *Rehabilitation Counseling Bulletin* 2007, 50(2):66-75.

25. Parashar D, Chan F, Leierer S. Factors influencing Asian Indian graduate students' attitudes toward people with disabilities. *Rehabilitation Counselling Bulletin* 2008, 51(4):229-239

26. Cross RM. Exploring attitudes: the case for Q-methodology. *Health Education Research* 2005, 20(2):206-213

27. Mckenzie J, Braswell B, Jelsma J, Naidoo N. A case for the use of Q-methodology in disability research: lessons learned from a training workshop. *Disability and Rehabilitation* 2011, 33(21-22):2134-2141

28. Bryant LD, Green JM, Hewison J. Understandings of Down's syndrome: A q methodological investigation. *Social Science and Medicine* 2006, 63:1188-1200

29. Garner ID. A Q-methodological study of male attitudes towards testicular cancer. *Student Pulse* 2011, 3(11):1-3

30. Akhtar-Danesh N, Baumann A, Cordingley L. Q-methodology in nursing research: a promising method for the study of subjectivity. *Western Journal of Nursing Research* 2008, 30(6):759-773