

A comparative analysis and evaluation of the naturopathic curriculum in South Africa

W Ericksen-Pereira,¹ PhD; N V Roman,² PhD; R Swart,³ PhD

¹ School of Natural Medicine, University of the Western Cape, Cape Town, South Africa

² Child and Family Studies, University of the Western Cape, Cape Town, South Africa

³ Dietetics and Nutrition, University of the Western Cape, Cape Town, South Africa

Corresponding author: W Ericksen-Pereira (wericksenpereira@gmail.com)

Background. Naturopathy has been taught at tertiary level in South Africa (SA) for 18 years. This research paper examines the naturopathic curriculum to determine whether it is benchmarked to international standards and meets the needs of graduates in practice. It is the first research paper that critically reviews the curriculum of a complementary alternative medicine profession taught at a higher education institution (HEI) in SA.

Objective. To critically review the naturopathy curriculum taught at an SA HEI.

Methods. This research used a sequential two-stage qualitative methodology. In stage one, a comparative document analysis was conducted using the curriculum recommended by the World Health Organization (WHO), the World Naturopathic Federation (WNF) and the University of the Western Cape. Stage two consisted of a graduate review of the curriculum. Eighteen graduates participated in the review by providing input on all the subjects in the curriculum via email. The responses were summarised and thematically analysed.

Results. It was found that the SA curriculum is aligned to international curricula. Graduate inputs suggest a restructuring of the curriculum so that subjects which are core to naturopathic training can be taught in greater depth over a longer period of time.

Conclusion. The subjects offered in the SA naturopathic curriculum are on par with international standards. Concerns raised by graduates suggest a need for a restructuring of the curriculum to develop a deeper understanding of the curriculum to ensure that graduates are competent to meet the changing healthcare needs of the population.

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Naturopathy is a system of complementary medicine (CM) that emphasises prevention, treatment and promotion of optimal health through the use of therapeutic methods and modalities which encourage the self-healing process – the *vis medicatrix naturae*.^[1] Philosophical underpinnings guide naturopathy, which focuses primarily on the prevention of illness through education, lifestyle and dietary changes.^[2,3] Over 100 000 naturopaths currently practise globally.^[4]

Naturopaths have been practising in South Africa (SA) since the 1950s.^[5] Currently only one higher education institution (HEI) in SA offers naturopathic training as a 5-year course. This consists of a 3-year undergraduate Bachelor of Science in Complementary Health Sciences (BSc CHS) degree, which provides the foundation for the professional 2-year postgraduate Bachelor of Complementary Medicine in naturopathy (BCM naturopathy) degree. The training programme started in 2002 – a time when there was no benchmark available to serve as a roadmap for the development of the course. In 2010 the World Health Organization (WHO) benchmarked the minimum standards for the education and training of naturopaths – which included listing the curriculum and the number of training hours required for minimum competency.^[1] This guideline, as well as subsequent documents,^[6] aimed to set standards for training to ensure the safety of the public, create awareness of the different levels of training for naturopaths, to assist governments in regulating and accrediting practitioners and ultimately to promote the integration of naturopathy into the public health system.^[1] In 2016, based on the findings of a global

survey of naturopathic educational institutions, the World Naturopathic Federation (WNF)^[3] established that there is global uniformity in the type of curriculum used in naturopathic training programmes.

The use of a comparative and benchmarked template affords the opportunity to engage in suggested corrective action.^[7] In the present study, the SA curriculum was compared and evaluated against the WHO and WNF curricula, in order to establish whether the curriculum meets the minimum requirements. A systems view of relevant training HEIs demonstrate how inputs from students, staff, faculty and various other resources can potentially help to transform and improve both the training and outcomes of an institution. This study used input from graduates. Using comparative analysis of the curricula as well as graduate reviews, recommendations for improvement to the SA naturopathic programme were made.

Methodology

This research used a sequential qualitative methodological approach, consisting of two stages. The first stage was a comparative document analysis, based on the major categories and the courses in each category of the naturopathic curriculum proposed by the WHO,^[1] the WNF Roots Survey which summarises the curricula taught in 30 different countries across all continents,^[4] and the SA curriculum.

The second stage consisted of a purposively sampled graduate review of the programme. All registered naturopaths who had graduated between 2007 and 2016, and whose email contact details could be traced, were invited to participate

in the research via email. Thirty-eight emails were sent explaining the purpose of the research. Included in the email was the ethics clearance document and the document summarising all the subjects in the training course, divided into the BSc and BCM degree courses. Participants were requested to: (i) provide comment on all the subjects covered in the curriculum; and (ii) make suggestions for improvements if they felt it was necessary to do so. Over a period of 2 months, 3 reminders were sent and 18 participants responded. These responses represent a spread across the years from the first cohort of graduates of the naturopathy programme to the 2016 graduates. Half of the respondents were in full-time practice as naturopaths. The response rate was

higher among participants who graduated later. Responses were coded in order to protect the identity of the participants. The responses were summarised and thematically analysed based on the frequency of an occurring theme.

Results

Stage 1: Comparison of curricula

An analysis of the three documents found that the curriculum could be divided into four major categories consisting of the basic sciences, clinical sciences, naturopathic studies and clinical training. This is summarised in Table 1.

Table 1. A comparison of curricula

WHO	WNF	South African curriculum
Basic Sciences: Anatomy Physiology Pathology	Basic Sciences: Hours – Basic + Clinical Sciences combined: 1 200+ Anatomy Physiology Pathology	Basic Sciences: Hours – 2 000 Biotechnology Chemistry Medical bioscience Medical microbiology Pathology Pharmacology Physics
Clinical Sciences: Patient history taking Clinical assessment Physical examination First aid and emergency medicine Hygiene and public health	Clinical Sciences: Hours - Basic + Clinical Sciences combined: 1 200+ Patient history taking Clinical assessment Physical examination	Clinical Sciences: Hours – 900 Patient history taking Clinical assessment Physical examination Emergency medicine General medicine
Naturopathic Studies: Naturopathic history and practice Nature cure Nutrition Hydrotherapy Botanical medicine Homeopathy and tissue salts Bach flower therapy Stress management Lifestyle counselling Light therapy Electrotherapy Iridology Soft-tissue therapies Aromatherapies Acupuncture	Naturopathic Studies: Hours – 950 minimum Naturopathic history, principles and philosophy Clinical nutrition Applied nutrition Hydrotherapy Botanical medicine Homeopathy Counselling and naturopathic psychotherapy Pharmacology Energetic therapies Physical manipulation Massage and soft-tissue techniques.	Naturopathic Studies: Hours – 1 200 Naturopathic principles and philosophy Nutrition Hydrotherapy Botanical medicine Tissue salts Bach flower therapy Stress management Lifestyle counselling Light therapy Electrotherapy Iridology Soft-tissue therapies Aromatherapies Thermal therapy
Clinical Training: Hours – 400+	Clinical Training: Hours – 1 200+	Clinical Training: Hours – 1 200+ Additional subjects: Hours – 650 Computer literacy Primary health care Principles of natural healing English for educational development Complementary healing systems Interdisciplinary health promotion Health psychology Study of human development
Total number of hours of naturopathic training: 1 500+ hours	4 000+ hours	5 950 hours

WHO = World Health Organization; WNF = World Naturopathic Federation.

It was found that the SA curriculum falls into the same categorisation of subjects as that stated in the WHO^[1] and the WNF^[4] documents and offered a wider range of subjects in the basic sciences. While the basic science subjects of anatomy, physiology and pathology are offered in the SA curriculum, it also offers physics, chemistry, biotechnology and pharmacology. These subjects provide a foundation which fosters an understanding of the various biochemical processes and their impact on the body at a cellular level.^[8] The curriculum also offers a number of additional subjects which cover various topics, such as psychology and introduction to natural health and healing systems, and provides foundational courses, such as computer literacy and English for educational development (EED) which addresses the SA context.

When the total number of training hours were compared, it was found that the SA training programme exceeded the minimum recommended training time determined by the WHO^[1] and WNF.^[9] The SA programme meets the minimum clinical training hours set by the WNF but has a bigger emphasis on the basic and clinical sciences component, and exceeds the minimum number of hours recommended by the WNF by 1 700 hours.

Stage 2: Graduate review

The following themes were identified:

Responses to the BSc (Complementary Health Sciences) programme:

Theme 1: Limited relevance of the course

While there was a general agreement that most of the subjects in the undergraduate BSc degree were essential as a foundation to the BCM degree, the relevance of the following subjects for the course was questioned.

English for Educational Development (EED): It is an elective taught in the first year. Respondents questioned the need for this English component when the medium of instruction at the university was English. It was felt that students needed 'to have a basic knowledge of Xhosa and Afrikaans in order to communicate with people from different walks of life - especially in the Western Cape region' (participant 8).

Computer Literacy: This is a compulsory subject for all first-year students. Its relevance was questioned because it was felt to be too basic as most students were computer literate by the time they entered university. Respondents felt that a competency assessment would determine if students needed to do this course, proposing that it 'should be an elective for those who never really used computers' (participant 10).

Theme 2: Important to the course but the content needs to change

The participants all agreed on the following subjects being important to the course as they provided a foundation for understanding concepts which would be taught later in the course – but the participants found the content did not fulfil this expectation.

Complementary Health Sciences 201: This subject was deemed to be important to the course as it introduced students to the different CM professions taught at the university. However, respondents felt it to be 'very superficial' and 'not detailed enough' and needed to have more 'depth' added to the course contents (participant 2). It was suggested that a greater focus on 'philosophies of the different complementary healing systems would provide some insight into how and why the different healing systems practise in a particular way' (participant 7).

Pharmacology 204: All respondents agreed on the importance of the subject to understand the pharmacokinetics of commonly prescribed drugs.

However, there needed to be a greater 'focus on drug-herb interactions as naturopaths use herbs as a part of their treatment and many of the patients naturopaths see are already using chronic medication' (participant 9). It was also felt that the course needed to be more focused 'on the effects of polypharmacy as this is what practitioners see in practice' (participant 11).

Nutrition 211 and 221: These subjects were seen to provide the foundation of nutrition and it was suggested that 'the course should be extended to include functional and nutritional therapy and be introduced from the first year' (participant 17).

Primary Healthcare: The aim of this subject is to introduce students to the SA public healthcare system and create awareness of the needs of the communities who access the system. There was consensus among all respondents that this subject does not achieve the objective of getting all students to understand 'how the whole health system in SA works and where naturopathy fits into the bigger South African context' (participant 18).

General Medicine 301: Introduces students to common pathologies and disease presentation. There was consensus on the importance of the course. However, owing to the course content being 'a lot and overwhelming' (participant 4), it was suggested that 'the content needs to be covered over a two-year period' (participant 6).

Theme 3: Important to the course but method of delivery needs to be improved

These courses were acknowledged by all participants to be crucial to understanding the anatomy and physiology of the body. The main concern with these subjects was the method of delivery and the challenges experienced with assessment.

Medical Biosciences 111, 121, 231 and 232: These subjects were acknowledged as being key to understanding pathology and the disease process in the rest of the curriculum as they cover anatomy and physiology. Respondents felt that, 'due to the volume of work and the difficulty of the work, the quality of teaching and assessment needed to be improved on' (participant 6). It was suggested that the 'number of lectures per week needs to be increased as well as the number of tutorials and assignments' (participant 2).

Theme 4: Mixed comments

Comments on these subjects varied and could not be categorised into any one theme. However, it is important that the responses are reflected as they contribute to the evaluation of the curriculum.

Principles of Natural Healing 111: This subject introduces students to the theories and principles which underpin natural medicine. The responses could be divided into three categories:

- Unable to recall – one-third of the respondents reported not being able to recall any of the course content
- The contents needed to change – as 'it was very superficial – it didn't provide a sound basis for understanding how natural medicine differs from conventional medicine' (participant 3).
- Important to the course but poor delivery – 'this course is a foundation to understanding what natural medicine is, therefore it should be taught properly with more student engagement' (participant 1).

Biotechnology 216: This subject builds on the first-year science courses and is aimed at developing an understanding of how the living systems' organisms work. It also develops the basic skills needed to do research in laboratories.

Responses to this subject ranged from those who questioned the relevance of the course, while others felt that it was necessary but 'the focus should be on nutritional biochemistry, which would be more relevant for naturopaths' (participant 9). Others felt that that this course was only relevant for those students who intended 'to follow a career path that required laboratory work/skills' (participant 10).

Study of Human Development 211 and Health Psychology 224: In these subjects students are introduced to the various developmental theories and the various biological, psychological and social factors which influence health respectively. The responses to these subjects were similar and ranged from 'I can't remember much of the course' (participant 4), 'I'm not sure how it all integrates together' (participant 5) to 'it was a offered on a very basic level' (participant 9).

Interdisciplinary Health Promotion: This subject creates awareness in students of the need to work together as an interdisciplinary team in order to maximise patient health outcomes. Responses ranged from those who felt the course was important because 'the more different health professions are exposed to one another, the better the opportunity for inter-professional co-operation which is in the patient's best interest' (participant 15) while others felt that 'it was poorly structured and taught' (participant 2) and they 'didn't understand what they were supposed to get out of the course.' (participant 6)

Responses to BCM (Naturopathy) programme

This programme is a postgraduate professional degree. Completion of the BSc (CHS) degree is a prerequisite for entry into the BCM (Naturopathy) programme. All subjects in the curriculum are fundamental to the naturopathy training programme. The responses from the participants were summarised into the following themes:

Theme 1: Relevance of course

There was only one subject where the relevance of the course was questioned. From the responses received, it is clear that it was not the relevance of the course itself but the research topics which students were given.

Research Project 508: The research project component is the practical application of research skills in a research project. Most participants questioned the relevance of the research project topics as 'the research project consumed a disproportionately large amount of time' (participant 5) and it was not related to what the students were studying. As a result the project, and by implication the course, was deemed to be 'a waste of time' (participant 7) as the 'research topic had no relevance to the profession we were studying' (participant 1).

Theme 2: Content needs to change

Most participants identified the following subjects as needing to have some aspect of the content changed.

Counselling skills 410: This subject aims to develop the skills to enable students to counsel patients. It is taught in the final year of the programme. All participants agreed on the importance of counselling to the training programme but felt that the course needed to 'be extended over a full year and the content expanded to include the theories underpinning counselling as well as develop the skills to enable them to use it effectively within a consultation' (participant 5).

Ethics, Jurisprudence and Practice Management: This course introduces students to the various ethical theories and the legislation as it pertains to

the registered Allied Health Professions Council of South Africa (AHPCSA) professions. Participants all found the subject very important, interesting and also relevant but there was consensus that 'the practice management component needs to be expanded on in order to better prepare students to run their own practice' (participant 8).

Differential Diagnosis: The respondents agreed on the importance of the subject as it develops the knowledge and skills to arrive at a differential diagnosis but felt that it needed 'greater depth using practical examples' (participant 11) and should be 'integrated into other subjects so that students can understand how the different parts are all connected' (participant 2).

Treatment Modalities: These subjects are fundamental to the naturopathy programme, teaching the philosophy and principles, as well as the various treatment methods which naturopaths use in practice. The general view regarding the course was that it required the teaching of all treatment practices in the legal scope of practice (SOP). However, all treatment practices should not be allocated an equal amount of teaching time as the view was expressed by some of the participants that the treatment practices taught impact on the graduates once they are in practice: 'treatment practices taught should be focussed on practice, what is affordable and realistic on implementation – for example the various physical therapies, botanical medicine' (participant 1). It was felt that a standardised curriculum needs to be developed based on the SOP. The following comment summarised the view of the majority of participants on the nutrition component of the course: 'as dietary intervention is the cornerstone of naturopathy, nutrition should be taught throughout the duration of the programme, not only in the second and third year of the BSc programme' (participant 13).

Responses to the overall programme

Restructure the curriculum: Most of the participants made recommendations for changes to the curriculum so that there is improved scaffolding and 'integration of subjects in order for naturopathic subjects to be taught earlier as two years is not enough to teach a naturopathic course' (participant 6). This would entail removing subjects from the curriculum deemed to be irrelevant to the course so that more time could be spent on teaching the naturopathic curriculum in greater depth. Recommendations for restructuring of the programme included a bigger emphasis on the teaching of nutrition as the 2-year curriculum is specific to naturopaths and has 'too much content which is overwhelming and there isn't enough time to practice the knowledge and skills in a clinical setting' (participant 4).

Discussion

The SA naturopathy curriculum was found to exceed the curriculum benchmarked by the WHO.^[1] It also compares favourably to international curriculum established by the WNF.^[4] The curriculum places emphasis on the basic sciences in the curriculum. While knowledge of the biochemical and physiological processes is important in understanding disease processes and treatment,^[8] this has to be balanced with adequate clinical training as it is here that the theoretical knowledge is integrated into practical clinical training and patient care.^[10] Baer^[11] suggests that naturopathy, in an attempt to legitimise naturopaths' training, has increasingly incorporated the basic sciences into their programmes. Clinical training is crucial for developing the necessary competencies to ensure that graduates are safe, competent practitioners – and re-evaluating the time allocated to the different components of the training is necessary to ensure that there is a balance in

the hours allocated to the theoretical component and clinical training. This was reflected in some of the comments in the graduate review.

The graduate review looked at the curriculum from a different perspective. Often graduates are not consulted for input on their training programmes, but their input on the evaluation of a programme potentially offers opinions which could improve the programme^[12] and provide insights into possible deficits in the programme.^[10] This could stimulate curricular debate and ultimately changes beneficial to future students of the programme. In order to ensure that a curriculum remains relevant to address the health needs of a country, it is necessary to regularly review the curriculum^[12] to ensure that students are prepared to meet the challenges of a changing health system.^[13] Concerns raised by graduates in respect of the curriculum need to be weighed up in terms of the competencies expected of graduates within the SA health system as determined by the professional body, the AHPCSA. For all the participants, it was more than a year or longer since they graduated from the naturopathic programme and they had been working in various capacities in the healthcare sector. The response from graduates indicated a recognition of the importance of most subjects in the programme. However, the relevance of having certain subjects in the programme was questioned by all respondents. The inclusion of these subjects needs to be considered in terms of the population of students who are enrolled in the course. The university population is drawn from diverse communities, cultures and age groups,^[14] and students from impoverished communities and rural areas may not have the requisite English language or computer literacy skills to succeed academically at university. Thus, subjects such as Computer Literacy and EED are important for students to ensure that they develop the requisite skills necessary to succeed at university. By participating in EED, students engage with each other and this helps to break down language^[14] and cultural barriers. Primary Health Care and Interdisciplinary Health Education are important co-curricular subjects for they provide students in the Faculty of Community Health Sciences with the opportunity to develop an understanding of the SA health system, the different medical professions and how they work together interprofessionally within the health system^[15] in order to address the healthcare needs of their patients. These subjects have to be integrated into the broader curriculum so that there is a scaffolding of skills and knowledge to ensure that students have acquired the skills and knowledge which they need in the senior years.^[16]

One of the main challenges of the naturopathic curriculum appears to be related to the need to integrate the curriculum on both a horizontal and vertical level so that all subjects in the curriculum are offered in sufficient depth. As the complete 5-year curriculum comprises the basic sciences, a clinical science component, and a naturopathic theoretical component, as well as the additional subjects discussed above, horizontal integration at every year level would help students to understand how the different subjects and concepts^[17] are related to each other. Vertical integration allows students to understand how the different subjects are scaffolded, allowing a deeper understanding of the inclusion of different subjects in a curriculum. Integration in an undergraduate medical curriculum encourages clinicians to critically view and review their subject matter and methods of diagnosis and therapy.^[16]

Findings from this research suggest that there is a need for a restructuring of the naturopathic programme to ensure that the curriculum is relevant and ensures that graduates have the necessary knowledge and skills to competently practise their profession within the SA healthcare system.

One of the limitations of this research was the small sample size. However, there are less than 100 registered naturopaths in SA, and of these, less than half are graduates of the tertiary programme. There was a 47% response rate. Another limitation was that responses were obtained via email. Some of the participants went into great detail in their responses while others kept their responses very brief. Conducting this research via face-to-face interview may have resulted in more in-depth responses from all participants. This research focused on the subjects taught and excluded a deeper analysis of the content of the subjects in the naturopathy curriculum.

Conclusion

In order to ensure that the naturopathic programme remains relevant and contextual to the demands of the public, there is a need for a regular review of the programme to allow all aspects of the programme to constantly improve. This ensures that graduates achieve an acceptable level of competency and professionalism. Further research into the re-curriculisation of the programme and a critical evaluation of the content could assist in developing a programme which ensures that naturopathy graduates are competent to meet the current challenges of the SA health system when they are in practice.

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