Dietitians in South Africa Require More Competencies in Public Health Nutrition and Management to Address the Nutritional Needs of South Africans

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The aim of this study was to determine whether dietitians in South Africa are competent to meet the requirements of working in a health care setting during a compulsory one-year community service (CS) program immediately after receiving their degree. A national survey was conducted using questionnaires to illicit information from dietitians on their training and competencies. In 2009, data were collected from both community service dietitians (CSDs) participating in community service programs in primary, secondary and tertiary health care centers in all provinces of South Africa, as well as from their provincial managers (nutrition coordinators). Sixteen (100% response) nutrition coordinators and 134 (80% response) dietitians participated in the quantitative survey. The majority of the CSDs reported that, overall, their academic training had prepared them for most aspects of nutrition service delivery. However, some recommended that academic programs include more training on community-based nutrition programs and in delivering optimal services to under-resourced communities as they believed that their competencies in these two areas were weakest. Furthermore, many CSDs were required to establish dietetics departments where none had previously existed; consequently, their capacity in management and administration needed improvement. In conclusion, academic training institutions should align their programs to the transformation of the health sector in South Africa by ensuring that dietitians are empowered to provide optimal public health nutrition services in under-resourced communities. (*Ethn Dis*. 2013;23[1]:87–94)

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Introduction

Nutrition-related disorders, which range from low-energy intake and micronutrient deficiencies to over-nutrition associated with an energy-dense diet and the development of non-communicable diseases,[1] contribute substantially to the burden of diseases experienced in South Africa (SA). Many of these disorders can, to a large degree, be treated or even prevented. However, both treatment and prevention require access to health professionals who are adequately trained in public health (community) nutrition, especially in remote rural communities.

Prior to 1994, the public health sector in SA largely focused on hospitals and not necessarily on delivering primary health care (PHC). After SA's first democratic elections in 1994, the health sector was reformed and a district-based health system was implemented.[1] Since 1994, more than 700 clinics have been built, 2,298 clinics upgraded and given new equipment, and 125 new mobile clinics introduced. There are now more than 3,500 clinics in the public sector. Free health care for children under six, pregnant and breastfeeding mothers is available at these clinics.[2]

However, SA is still one of many developing countries that does not plan, produce or manage its workforce development adequately.[3,4] Despite the fact that the health care needs in SA are concentrated at a community / PHC level and that attempts have been made to focus curricula on PHC, the emphasis of the curriculum and the teaching methods for some cadres of health professionals continues to focus on the medical model and mirrors the training in developed countries.[3] This includes an overemphasis on training specialists rather than the auxiliaries, eg, community health nurses and health workers[4] that are required at both district and PHC levels. As a result, the country continues to experience a scarcity of human resources. The situation is made worse by the fact that the high standard of training and the cutting-edge medical experience received by SA health professionals, including dietitians, results in these professionals leaving the country for developed countries like Britain and Canada that offer better career opportunities.[2]

The National Human Resources for Health Plan[4] was developed by the Department of Health (DOH) in 2006 in order to address issues related to human resources. One of its strategies was the introduction of compulsory community service for health professionals, which is aimed at ensuring that there is an equitable distribution of newly qualified health professionals in under-served communities, particularly those in remote rural areas. Numerous other developing countries, particularly in South America, have also followed this strategy in attempting to bring health professionals to under-served areas.[5] This policy became compulsory for dietitians in 2002. Since 2003, an average of 190 dietitians were employed in compulsory community service each year.

Dietitians in SA complete a four-year integrated Bachelor degree similar

to the curriculum conducted in the United States. Students major in clinical (therapeutic) nutrition, community (public health) nutrition and food service management at one of eight universities. Chemistry, biochemistry, biology, physiology and microbiology are compulsory subjects. Also included in the degree program is a 36-week practical internship of which a third has to be spent in a clinical setting, community setting and a food service operation. After completion of the compulsory community service year, dietitians are required to register with the Health Professions Council of South Africa (HPCSA).

While we can be assured that nutrition services are now reaching remote communities, limited research has been done to evaluate the competencies of community service dietitians (CSDs) in SA.[6,7] Consequently, the aim of our study was to evaluate whether the academic training dietitians received adequately equipped them to undertake the duties of their community service year and whether their services were optimally utilized. Their competencies during their community service period would serve as a reflection of their academic training.

EVALUATION STUDY DESIGN

This study was a nationally representative cross-sectional descriptive study. The study population consisted of all CSDs completing their compulsory community service year in South Africa in 2009, as well as the provincial nutrition coordinators to whom they reported. The list of CSDs and their placements (N=168) and the list of provincial coordinators (N=16) were obtained from the Nutrition Directorate of the Department of Health.

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A survey questionnaire, based on the competencies expected of a dietitian at entry-level service as promulgated by the Human Sciences Research Council (HSRC), was developed and validated in terms of face and content validity by four experienced dietetic researchers. The questionnaire was designed to elicit information regarding CSDs working environment and their perceptions regarding their own knowledge and practices in the community service setting. The questionnaire was further approved by members of the HPCSA Dietetics Board who have a wide range of expertise in the dietetics working environment. The questionnaire was pretested on a sample of dietitians (N=10) who had recently (2007 and 2008) completed their community service year. Since the questionnaires were confidential (anonymous), and of a factual nature (did not test knowledge), the researchers believed that the answers would be a true reflection of the work situation. Most of the questions were open-ended in a sense that the participants had an opportunity to comment on their answers and they were also asked for recommendations. Some minor corrections were made after the pilot study and the questionnaire was then delivered to CSDs in the second half of 2009 when they had already completed six months service at the health facilities where they were stationed.

Questionnaires were delivered either via post, email, fax or by one of the researchers. Another questionnaire, which included open-ended questions, was developed to obtain information from DOH provincial nutrition coordinators who supervised the CSDS. This questionnaire was designed to evaluate the coordinators' opinions regarding the competencies of the CSDs in their regions. Data for both surveys were captured in Microsoft Access and analyzed using SPSS. Ethical clearance was obtained by the Medical Research Council's Ethics Committee. Confidentiality was ensured as all questionnaires and interviews were completed and conducted voluntarily and returned and recorded anonymously.

Description of the Participants

Of the 168 CSDs placed in 2009, 134 participated in the survey, resulting in an 80% response rate. More than 70% of dietitians were White; the remaining were of African origin. The sample was nationally representative since all provinces and all universities offering a four-year undergraduate dietetics degree (N=8) were well-represented. Fifty-five percent of CSDs were placed in rural areas and 31% in urban areas, with the remaining CSDs in urban informal settlements. The majority (64%) indicated that they were working at district level while the rest were equally distributed between PHC and tertiary facilities. Furthermore, all 16 provincial coordinators, the majority of whom were dietitians (88%), participated in the survey, resulting in a response rate of 100%.

Duties of Community Service Dietitians

Eighty percent of CSDs worked with hospital in-patients and outpatients for at least four or more days a week and 75% spent at least one day a week on outreach services. Figure 1 shows the common duties undertaken by CSDs and the percentage of time spent on each duty over an average week. Much of the time (35%) was spent on individual counseling, followed by ward rounds (16%); growth monitoring (10%); and nutrition education (group counseling or presentations) (9%). Additionally, 7% of

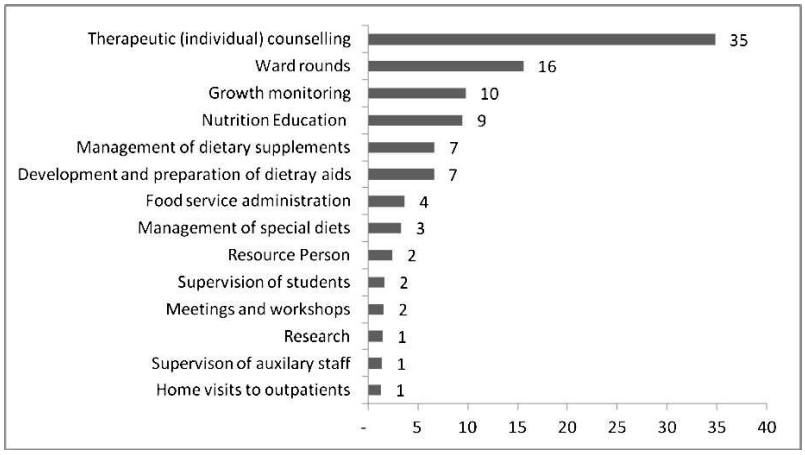

Fig 1. Common duties undertaken by community service dietitians and the percentage of time spent on each duty over an average week

time was spent on developing dietary aids and 7% on management of nutrition supplements. These duties accounted for 84% of their time.

EVALUATION OF KNOWLEDGE AND TRAINING RECEIVED FROM ACADEMIC INSTITUTIONS

The majority of CSDs reported that training institutions (universities) had equipped them for community service (Table 1), which was very encouraging as 30%–40% indicated that they were prepared for most situations, while the rest indicated that they were able to deal with more than half of the situations with some help. A small minority of CSDs indicated that they *felt incompetent in most situations*. This was highest for organizing continuing professional development (CPD) (13.5%), followed by communication with people who speak a different language (6.0%), ability to start a new department (5.3%), drawing up a business plan (4.5%), and managing an established department (3.8%). The rest of the competencies in this regard included less than 3% of CSDs.

In assessing the areas participants felt they needed additional *knowledge and skills required most of the time*, the most frequently cited areas were: communicating with people speaking a different language and ability to start a new department at 11.3%, followed by knowledge of departmental procedures (9%), managing an established department (7.5%), drawing up a business plan (6%) and drawing up motivations for requirements (6%)(Table 1). Slightly more than 5% felt they needed additional knowledge and skills in regard to planning of CPD activities and knowledge regarding the Health Professions Act of SA. Less than 5% were found in any of the other categories. Regarding the need to have *guidance and emotional support most of the time,* the following were cited the most frequently: drawing up a business plan (20.3%), motivation for requirements (17.3%), community entry (12.8%), managing an established department (12%), departmental procedures (12.8%), and developing supervisory support structures (12.8%). With the exception of community entry, the competencies were all related to administrative procedures.

Overall, provincial coordinators rated the service of CSDs as being either good (38%) or very good (56%) (Table 2). However, 69% felt that the training emphasis remained clinical and that CSDs may not have sufficient knowledge and skills to work in the community. Specific areas highlighted for additional training were: work ethics and professional conduct (56%); and, CSDs' lack of confidence or ability to work independently (25%). A number of coordinators (19%) also commented that the level of skills and therapeutic nutrition knowledge among CSDs differed according to where they were trained and that record keeping/confidentiality needed improvement (19%).

CSDs evaluated their own knowledge and skills (Table 3) regarding specific topics of nutrition. More than 90% judged their competencies on type 2 diabetes, hypertension and HIV as being good and/or very good. Between 80% and 90% felt their competency to be good in regard to breast feeding, infant feeding, infants with HIV, and nutrition in childhood. For only two topics, allergies (25.6%) and renal diets (13.5%), did at least 10% rate themselves as *poor and/or fair*. Nine percent and 8.2% rated their knowledge and skills as being only *fair* with regard to anemia and micronutrient deficiencies, respectively. Competencies that were not utilized by many CSDs in their current working situation were counseling and/or preparation of allergy diets and renal diets, food service management, management of special diets; community diagnosis, and project planning.

IMPLICATIONS FOR DIETETICS' TRAINING AND PRACTICE

Despite initial resistance to community service in South Africa,[5–8] the process has been implemented and evaluated for most categories of health professionals including doctors, dentists, pharmacists, physiotherapists, dietitians and clinical psychologists.[6,7,9–12]

Table 1. Community service dietitians' rating of various aspects of their academic training

Academic Training Received	Adequately Prepared for Most Situations	Needed Guidance and Emotional Support Some Times	Needed Additional Knowledge and Skill Some Times	Needed Guidance and Emotional Support Most Times	Needed Additional Knowledge and Skill Most Times	Felt Incompetent in Most Situations
General sense of adequacy						
Training for community service	43.6	31.6	20.3	1.5	2.3	0
Clinical experience gained	44.4	22.6	24.8	5.3	1.5	0
Community-based programs						
PHC principles	29.3	31.6	21.8	3.8	2.3	1.5
Community entry, dealing with structures	15	29.3	28.6	12.8	4.5	1.5
Community assessment	35.3	24.8	21.1	8.3	1.5	0.8
Community development	24.1	27.1	23.3	11.3	3.0	1.5
Nutrition service-clinic	34.6	32.3	15.8	6.8	0	0.8
Nutrition service-health centre	30.8	30.8	18.1	6.0	0	1.5
Planning & implementation of preventative programs	16.5	33.1	28.6	6.0	3.0	0.8
Ability to transfer skills-care providers	46.6	33.1	7.5	4.5	0.8	0
Ability to transfer skills- health workers	42.1	27.8	9.0	1.5	0	0
Planning of an intervention in the community						
Individuals	42.9	32.3	12.0	2.3	0	0.8
Groups	39.1	33.1	14.3	1.5	0.8	0.8
Populations	19.6	36.1	21.1	7.5	1.5	0.8
Implementation of interventions within a community practice setting						
Individuals	39.1	36.1	12.8	0.8	0	1.5
Groups	31.6	36.8	18.8	0.8	0	1.5
Populations	16.5	36.8	24.1	4.5	0.8	1.5
Monitoring and evaluation of intervention in a community						
Individuals	36.8	26.3	20.3	3.8	0	2.3
Groups	33.1	26.3	24.1	2.3	0.8	2.3
Populations	18.8	28.6	28.6	4.5	1.5	1.5
Team work						
Ability to function in a team	68.4	22.6	5.3	0.8	0.8	0
Coping with inter-personal difficulties	54.1	30.8	9.0	2.3	1.5	0
Dealing with cultural/ language differences						
Communication with people who speak a different language	30.1	16.5	24.8	9.0	11.3	6.0
Awareness of cultural diversity	46.6	24.8	15.8	6.0	3.0	1.5
Dealing with persons from a cultural group other than their own	50.4	24.8	10.5	7.5	1.5	1.5
Practical departmental management						
Knowledge of management functions	21.1	26.3	30.1	10.5	4.5	1.5
Skills of management functions	19.6	28.6	28.6	10.5	5.3	0.8
Ability to start a new department	12.0	18.0	32.3	11.3	11.3	5.3
Managing an established department	25.6	16.5	24.8	12.0	7.5	3.8
Drawing up a business plan	17.3	24.8	21.8	20.3	6.0	4.5
Drawing up motivations	21.8	20.3	25.6	17.3	6.0	1.5
Effective management of resources	25.6	21.1	21.1	10.5	3.0	0
Day-to-day administration						
Keeping records	53.4	12.8	19.6	5.3	2.3	0.8
Flow and use of data for making decisions	38.4	19.6	23.3	7.5	3.0	1.5
Departmental procedures	33.1	15.8	20.3	12.8	9.0	2.3
Stock control	37.6	13.5	20.3	11.3	5.3	1.5
Education						
Health promotion programs	42.1	37.6	14.3	0.8	0.8	0
Training of health care workers or other professionals	43.6	27.8	18.1	0.8	4.5	0.8
Offering or organizing CPD activities	18.8	18.1	25.6	8.3	5.3	13.5

Table 1. Continued

Academic Training Received	Adequately Prepared for Most Situations	Needed Guidance and Emotional Support Some Times	Needed Additional Knowledge and Skill Some Times	Needed Guidance and Emotional Support Most Times	Needed Additional Knowledge and Skill Most Times	Felt Incompetent in Most Situations
Supervision of auxiliary staff						
Knowledge of auxiliary staff	19.6	27.1	28.6	7.5	3.0	3.0
Development of effective supervisory structure	14.3	24.8	27.1	12.8	3.8	3.8
Ethics						
Knowledge and understanding of ethical principles	60.2	27.8	6.8	3.0	0.8	0
Code of marketing breast milk substitutes	64.7	24.1	6.8	2.3	0	0
Rules for professional conduct	58.7	24.8	12.8	0	0.8	0.8
Health professions Act	36.1	26.3	18.8	8.3	5.3	3.0
Dilemmas with treatment of HIV patients	41.4	28.6	19.6	6.8	0.8	0.8
General						
Problem solving ability	49.6	36.1	12.0	0.8	0.8	0
Management of own time & resources	62.4	21.8	13.5	0.8	0	0.8
Coping with severely limited resources for treatment	42.9	26.3	22.6	4.5	1.5	0.8
Acting as a resource person	34.6	38.4	18.8	3.8	0.8	0.8
Coping with problems around HIV/AIDS	48.9	30.8	17.3	0.8	0	0

In our study, more than half the CSDs were placed in rural areas and the majority worked at district or PHC level. Thus, the community service program successfully provides a conduit through which health services are being delivered to previously under-served areas. In doing so, the South African government's vision to implement a district-based health system is being realized.

The fact that both provincial coordinators and CSDs highly rated their knowledge and skills provides reassurance that the majority of CSDs were sufficiently knowledgeable and skilled to deliver adequate nutrition services to their clients.

Furthermore, the fact that both provincial coordinators and CSDs highly rated their knowledge and skills provides reassurance that the majority of CSDs were sufficiently knowledgeable and skilled to deliver adequate nutrition services to their clients. The positive results of the present study reflect those of the smaller studies done earlier by Visser et al[6] and Paterson.[7]

As previously stated, prior to 1994, the health system in South Africa focused on curative care, not PHC. Similarly, training institutions geared their training programs to produce health professionals who were competent in a curative (therapeutic) environment. However, based on the current health needs of the country, the DOH focuses on PHC. Training programs should thus also be adapted in order that CSDs are empowered to provide better public health / community nutrition (preventative) services, as shown by our results indicating that nearly 70% of nutrition coordinators believed that the training emphasis was too clinical to the detriment of public health nutrition.

The need for improved community-based training is supported by CSDs' requests for additional training on public health interventions such as the implementation of the Baby Friendly Hospital Initiative (BFHI), the Integrated Nutrition Programme (INP), the Prevention of Mother to Child Transmission of HIV/AIDS (PMTCT) and the Integrated Management of Childhood Illnesses (IMCI) programs. This request, along with the request for improved training in pediatrics, could result in a substantial increased contribution from the nutrition profession to reducing the infant mortality rate in the country.

CSDs also requested more training on how to provide optimal services to clients in under-resourced (rural) environments. In our study, this was clearly shown by the significant percentage of dietitians who indicated that they required more knowledge and skills most of the time in areas such as community entry, community development, monitoring and evaluating community interventions, and in

Table 2. Feedback from provincial coordinators regarding community service dietitians competencies (*N*=16)

Profession	***N* (%)**
Dietitian	14 (88%)
Nurse / doctor	0
Other	2 (12%)
Rating regarding service of CSDs	
Poor	0
Fair	0
Good	6 (38%)
Very good	9 (56%)
Excellent	1 (6%)
Competencies / areas of knowledge to be improved	
Pediatrics	4 (25%)
Communication, facilitation and presentation skills	4 (25%)
High care and critical care	3 (19%)
BFHI & WHO severe malnutrition	3 (19%)
TPN & enteral feeds	2 (13%)
Computer skills and report writing	2 (13%)
Behavior change	1 (6%)
Growth monitoring and promotion	1 (6%)
HIV /AIDS & TB, PMTCT and ART	1 (6%)
Surgery	1 (6%)
Ward rounds	1 (6%)
Policy analysis	1 (6%)
Project management	1 (6%)
Strategic thinking	1 (6%)
Planning and development of programs	1 (6%)
Monitoring and evaluation	1 (6%)
Specific problems to be addressed by training institutions	
Training emphasis remains clinical thus CSDs may not have adequate knowledge and skills to work in the community	11 (69%)
Work ethics & professional code of conduct / interpersonal skills and time management	9 (56%)
Ability / confidence to work independently	4 (25%)
Clinical knowledge differs amongst CSDs according to where they were trained	3 (19%)
Patient confidentiality and record keeping / documentation	3 (19%)
Accountable management of resources including finances	2 (13%)
Practical application of theory knowledge / basic patient management	2 (13%)
Language	2 (13%)

communicating with people speaking other languages.

With the implementation of the community service program, and the need to deliver nutrition services to under-served communities, new graduates are often placed in institutions where they have to establish and manage nutrition departments. As a result, numerous CSDs reported that they needed guidance, support and knowledge most of the time with regard to establishing and/or managing a department, developing a business plan, departmental procedures and managing resources. For this reason training institutions should provide programming to ensure that students are competent in administration skills required to establish and manage a dietetics department. Furthermore, the training program should include exposure to the systems and administration procedures in public sector institutions.

Despite the fact that English is recognized as the language of commerce and science, as well as the predominant language used for education and instruction, it was spoken by only 8.2% of South Africans at home in 2001.[13] Thus, there is often a disparity between the language spoken by the CSD and that spoken in the community in which they are placed. Although communication / language barriers occur in all health disciplines, the dietetic profession is at a greater disadvantage. This can be directly attributed to the lack of qualified dietitians from Black African backgrounds and is largely due to the lack of equity, which previously existed at training facilities in South Africa. Furthermore, entrance requirements are also a barrier to access for most Black African students due to the known disparities in the science education system. Under these conditions, <10% of graduates from historically White universities are Black. Training institutions should make a concerted effort to address not only the admission rate of Black students but the attrition rate as well. Although the same trend has not been noted in the enrolment of dietitians, CSDs have recommended that training institutions include a basic short course on an African language in their curricula in order to address the communication problems experienced.

CONCLUSION

In conclusion, our study has provided recommendations for training institutions in South Africa, specifically with regard to the content and structure of the training programs in order to meet the needs of the communities which are served by CSDs. In light of the current and foreseeable future health system needs of the country, training institutions and the DOH should provide career guidance to students at primary and secondary school level in order to promote a career in dietetics, particularly to African children, in order to increase the number of dietitians of color. Training institutions also need to develop long-term objectives on how they can attract and retain African students. Since there are immense

Table 3. Community service dietitians rating of their own competencies regarding knowledge and skills in various areas of nutrition, %

Competencies	Do Not Do	Poor	Fair	Average	Good	Very Good
Lifecycle						
Breast feeding	9.0	0	1.5	7.5	32.1	50.0
Infant feeding	0	0	1.5	6.7	40.3	47.0
Infant with HIV	5.2	0	1.5	11.2	39.6	42.5
Nutrition in childhood	5.2	0	0	13.4	49.3	32.1
Nutrition during pregnancy	7.5	0.8	3.7	29.1	39.6	19.4
Nutrition for the elderly	9.0	0	6.7	23.1	39.6	21.6
Therapeutic nutrition						
Allergies	18.8	7.5	18.1	31.6	21.1	3.0
Anemia	6.8	0	9.0	35.3	33.1	15.8
Type 1 diabetes	4.5	0.8	4.5	19.4	27.6	43.3
Type 2 diabetes	3.0	0.8	0	3.0	34.3	58.9
Enteral feeding	11.2	1.5	3.7	14.2	38.1	31.3
Heart disease & hyperlipidemia	4.5	0	3.0	17.9	41.0	33.6
Hypertension	2.2	0	0	3.0	32.8	61.9
Management of severe malnutrition	1.5	0	2.2	8.2	41.0	47.0
Micronutrient deficiencies	5.2	2.2	8.2	30.6	41.8	11.9
Nutrition and TB	3.0	1.5	3.7	9.7	35.8	46.3
Nutrition and HIV	2.2	0	0	8.2	29.1	60.5
Renal diets	21.6	3.0	10.5	25.4	22.4	17.2
Vitamin A deficiency	13.4	0.8	3.0	20.9	36.6	25.4
Weight management	0.8	0	0	11.2	34.3	53.7
Food service administration						
Menu planning	30.6	1.5	3.7	9.7	32.8	21.6
Food ordering/receiving	49.3	3.0	2.2	14.2	20.2	11.2
Menu budgeting	60.0	2.2	4.5	17.2	11.9	5.2
Management of food service staff	52.2	2.2	2.2	17.9	18.7	6.7
Training of food service staff	44.0	1.5	3.0	17.2	26.1	8.2
Managing special diets	35.8	1.5	4.5	11.9	26.9	19.4
Public health / Community nutrition						
Community assessment /diagnosis	27.6	3.0	6.0	9.7	29.9	23.9
Growth monitoring	10.5	0.8	1.5	9.0	24.6	53.7
Nutritional status measurements	11.9	0.8	4.5	11.2	32.8	38.8
PEM	6.7	1.5	3.7	5.2	26.9	56.0
Project planning	29.9	3.0	6.0	14.9	29.9	16.4
Research	50.8	3.0	3.7	14.9	18.7	9.0
Vegetable gardens	39.6	4.5	3.0	14.9	25.4	12.7

differences in the socioeconomic background and lifestyle between the White and Black populations of South Africa, the added problem of White dietitians not able to speak the African languages further complicates their competence. It is hence essential that universities include an African language course for dietitians who do not speak an African language.

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