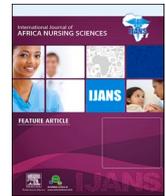


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Knowledge, skills, and training community health workers require to contribute to an interprofessional learning initiative

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ABSTRACT

Background: A health sciences faculty established an interprofessional learning initiative in the southern Free State, South Africa. This initiative offers learning opportunities to fourth-year students in health and rehabilitation sciences, nursing, and clinical medicine, whilst supporting rural healthcare services. The role of community health workers in this initiative is often limited to enabling students to enter the community setting. The authors presupposed that these health workers require certain knowledge, skills and training to contribute to this initiative.

Aim: To describe the knowledge, skills, and training community health workers require to contribute to a faculty of health sciences interprofessional learning initiative.

Setting: The study was conducted at the rural and university facilities of a health sciences faculty.

Methods: This qualitative study used five nominal group discussions and purposive sampling to obtain data from community health workers (n = 26), interprofessional learning students (n = 22), interprofessional learning coordinators (n = 3), and interprofessional learning facilitators (n = 5). Analysis of the multiple-group data was done according to accepted nominal group technique practices.

Findings: Five top priorities related to required knowledge, skills, and training were identified across groups. Knowledge priorities were, for example, the Road to Health chart (average 5.58), danger signs (3.63), and basic knowledge on pertinent conditions (2.82). Skills included wound care (4.17), vital signs (3.09), and communication (2.63), whilst training on health promotion (3.09), emergency (3.00) and wound care (2.92), were listed.

Contribution: The findings contribute to the development of a facilitator guide containing content tailored to enable community health workers to contribute to this interprofessional learning initiative.

1. Introduction

Community health workers (CHWs) are globally considered the ‘backbone’, the ‘foundation’ or the ‘frontline’ of efforts initiated by healthcare providers to render extensive support in communities (Brownstein et al., 2011; Findley et al., 2012; Lumsden et al., 2019). Due to the diverse nature of the term CHW, this category could include volunteers who receive minimal training and have very specific responsibilities that require less than one hour a week to attend to, or CHWs who completed more than a year of formal training (Perry & Zulliger, 2012). Their universally acknowledged contribution to healthcare is entrenched in policy statements and related research that recognise CHWs as a key link between professional care providers, such

as physicians and nurses, and patients (Findley et al., 2012; Kok et al., 2018; WHO, 2007). Community health workers have a vital input in communities, where they render services in collaboration with their local health facilities (Fergusson et al., 2012; Kok et al., 2018; Lumsden et al., 2019; McAlearney et al., 2020; Nyalunga et al., 2019; Pinto, da Silva & Soriano, 2012; Schachter et al., 2014). Community health workers in such healthcare environments, are enlisted for their ethnic or indigenous knowledge about their communities’ geographies, cultural norms, and healthcare assets and needs (Pinto et al., 2012). Moreover, they present a distinct category of nonclinical knowledge and skills base, which is defined in the literature as ‘experience-based’ expertise (Brownstein et al., 2011).

Notwithstanding their contributions to services based on this type of

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knowledge and experience, literature attributes CHWs' contributions, or lack thereof, to their diverse training and education. Particularly in rural areas, CHWs' contributions are ascribed, for example, to insufficient and interrupted training, training that is too short, and of which the scope is not aligned with the major healthcare issues they must deal with (Majee et al., 2020; Plowright et al., 2018). Wennerstrom et al. (2014), for example, point out that no published universal training standards or curricula exist to guide the state of New Orleans in the development of nationally recognised core competencies for CHWs. Although several states in the United States have acknowledged a scope of practice for CHWs, only a few of these states have established core competencies recognised by legislation (Corder-Mabe et al., 2019).

A study conducted by Malcarney et al. (2017, p. 360) identified significant similarities across competency lists, though these authors also note that a gap exists in terms of competencies related to CHWs' ability to 'integrate into healthcare while maintaining their unique identity'. Confirming this finding, Janse van Rensburg and Marcus (2020) found that, in South Africa, a considerable variation exists in CHWs' scope of knowledge, skills, and competencies. A set of nationally defined core competencies, according to Tulenko et al. (2013), therefore, plays a crucial role if CHWs are to contribute to healthcare. There is no doubt that CHWs do contribute to positive health outcomes for underserved populations, especially when they support interprofessional teams to address chronic disease and other healthcare-related issues (American Public Health Association, 2014).

Researchers have studied CHWs' contributions to a variety of academic programmes, projects, and interprofessional learning (IPL) (Heunis et al., 2013; Muller et al., 2019; Pálsdóttir et al., 2016). If contextualised to a specific environment, engaged learning that includes an IPL pedagogy could equip interprofessional student groups and CHWs to learn from each other through sharing knowledge and skills required to facilitate community welfare through collaborative and evidence-based practices (Muller et al., 2019; UFS, 2021). Research related to IPL, in general, focusses on curriculum changes to equip students with the skills necessary to address health-related challenges (Millar, 2016); student perceptions and experiences of community-based interprofessional education and collaborative practice (Rhoda et al., 2016); and IPL as an educational strategy (MacDonnell, George & Misto 2012; Reeves 2016; Servin et al., 2016). To equip students, a South African university initiated an interprofessional team approach to provide students with opportunities to practice interprofessional and relevant healthcare. This approach included collaboration between CHWs and students during interprofessional home visits, with the aim of determining the health status of a selected community (Fisher et al., 2015).

We, therefore, based our study on a structured IPL learning initiative of a faculty of health sciences, which was facilitated by health science professionals, and provided students with IPL opportunities. These opportunities included health screening of Grade 7–12 learners, and screening of adult patients with diabetes mellitus, using tools such as depression, anxiety, and substance abuse scales, a 60-second foot-screening checklist, and the International Classification of Functioning, Disability and Health assessment tools, to determine the patients' health status. Students' participation in IPL requires a certain scope of knowledge, skills, and training, so that they can perform these screenings, and thereby support existing community healthcare services in two rural towns. Currently, CHWs, in collaboration with the existing primary healthcare clinics, manage the students' access to patients in the community. However, the contribution of CHWs in relation to the IPL opportunities is ill defined and limited to enabling students to enter the community setting as required. The authors presupposed that these health workers required certain knowledge, skills, and training to contribute to this initiative. The aim of this article is, therefore, to describe the knowledge, skills, and training CHWs require to contribute to this interprofessional learning initiative.

2. Research design and methods

A qualitative consensus-seeking method that used the nominal group technique (NGT) (Dunham, 1998; Roets & Lubbe, 2015) was suitable, since the technique lends itself to problem-solving strategies. Dunham (1998) states that using the NGT was about 'judgmental' decision-making and seeking of resourceful solutions. According to Olsen (2019), the NGT enables participants to pursue in-depth inquiry into previously unidentified matters. Benefits related to the use of NGTs include, for instance, that researchers' influence, and the influence exerted by participants on each other are limited. Equal participation by members is enhanced, and ideas from socially and culturally diverse groups could be obtained (Dunham, 1998; Olsen, 2019). Nominal groups, however, confine a meeting of participants to one topic, and participants need make a joint decision to use a specific structured method, about which some participants might not be comfortable (Dunham, 1998).

Nominal groups require groups of at least 10 participants to ensure valid/reliable data. This number correlates with findings of researchers using qualitative focus groups, who state that the goal is to include four to seven, or even 10 participants to perform the NGT successfully (Olsen, 2019). When applied during a structured meeting, the NGT should follow a specific procedure (Dunham, 1998; Olsen, 2019). Each participant silently generates ideas related to the research question and writes them down. The researcher records and numbers the ideas of each participant during an engaged round-robin feedback session. A discussion to clarify and evaluate each recorded idea is followed by participants voting privately for their top five ideas. A 1–5 point rating system is used, where 5 points indicate the highest score for an idea. The scores of each participant's five top priorities are captured. To identify a group's top five priority ideas, the total and average scores for each idea are calculated. In our study, the procedure was repeated for knowledge, followed by skills, and eventually training.

2.1. Population and sampling

Various groups constituted the population (N = 410), which consisted of CHWs, IPL coordinators, IPL facilitators and fourth-year IPL students in health and rehabilitation sciences, nursing, and clinical medicine. Purposive sampling resulted in 56 participants being included in the study (refer to Table 1).

2.2. Ethical considerations

A health sciences research ethics committee [UFSHSD2019/1079] and relevant authorities approved the study. The authors observed the Declaration of the Helsinki, and the fundamental ethical principles of respect for persons, beneficence and justice, throughout the study.

3. Data collection

The study was conducted at rural community venues and university facilities of a health sciences faculty, to enable the various participant groups to attend. Five nominal group discussions (two for CHWs; one for IPL coordinators/facilitators; two for IPL students) were conducted. The researchers, who are experienced nominal group facilitators, facilitated the discussions, in English. However, to ensure a culturally sensitive approach, the consent forms, information leaflet, and research questions were also available in Sesotho (a local language). Each group discussion followed the stepwise procedure proposed by Dunham (1998). The question posed to each group was, *What knowledge, skills and training do CHWs require to contribute to this IPL initiative, especially when attending to learners, and adult patients with diabetes?*

Table 1
Population, inclusion criteria, and sampling of participants for the nominal groups.

Participant group	Inclusion criteria	Population (N = 410)	Sample (n = 56)
CHWs	CHWs associated with two rural clinics	30	26
IPL coordinators	Academic staff of schools in a health sciences faculty, who had been officially appointed to coordinate IPL	5	3
IPL facilitators	Academic staff from schools in a health sciences faculty who acted as IPL facilitators	15	5
IPL students	Fourth-year students in a health sciences faculty who were placed for 40 h of IPL, and who were available during the time of the study	360	22

4. Findings

This section depicts the data analysis, the profile of participants, and the top priority calculated for each of the five groups related to knowledge, skills, and training.

4.1. Data analysis

Analysis of the multiple-group data was done according to guidelines provided by Van Breda (2005), and Roets and Lubbe (2015). The data obtained from each of the five groups about the required knowledge, skills, and training were captured in a number of tables, using Microsoft Word® (Roets & Lubbe, 2015). The tables include, for example, ideas related to knowledge, skills, and training listed by participants, the total and average ratings, and the priorities of the ideas. The total was calculated based on the rating of each participant, to indicate their top five ideas per category, that is, knowledge, skills, and training. The average was calculated by dividing the total rating for an idea by the number of participants who had rated that specific idea, with ratings being rounded to two decimal places.

Table 2 represents an example of the type of data related to the skills of CHWs and captured from one group, and the ratings used to calculate the average for an idea. The average rating also determined the top five priority ideas related to knowledge, skills, and training.

4.2. Profile of participants

The profile of participants who consented to participate in the NGTs is depicted in Table 3. In total, 26 CHWs participated in the nominal groups – 21 women and five men. The 22 fourth-year IPL students who participated were seven men and 15 women. Nine IPL facilitators – three men and five women – also participated. The race distribution for the study was 35 Black, two Coloured (an accepted term in South Africa that

Table 2
Type of data captured from one group related to skills to determine the top five priority ideas.

Idea number	Participants' ideas	Idea rating	Total rating per idea	Average rating [rating divided by number of participants]	Priority idea
1	Urine, pregnancy, and blood glucose tests	1, 1, 1, 3, 3, 4, 4, 5, 5, 5	32	2.29	1
4	Wound care	1, 1, 1, 2, 2, 2, 2, 3, 4, 4, 4, 5	31	2.21	2
8	Pap smear	1, 2, 2, 2, 3, 4, 4, 4, 5	27	1.92	3
2	HIV counselling and testing	2, 3, 3, 3, 3, 3, 4, 4	25	1.79	4
9	Measuring blood pressure	1, 1, 1, 2, 2, 2, 4, 5, 5	23	1.64	5

Table 3
Profile of participants included in the nominal groups.

Group No.	Participant group (n = 5)	Number of participants sampled (n = 56)	Gender		Ethnic group
			Male (n = 15)	Female (n = 41)	
CHW1	CHWs Town 1	14	3	11	14 Black
CHW2	CHWs Town 2	12	2	10	12 Black
IPL3	IPL Students	11	3	8	4 Black 6 White 1 Indian
ILP4	IPL Students	11	4	7	5 Black 5 White 1 Indian
C/F5	IPL Coordinators/ Facilitators	8	3	5	2 Coloured 6 White

refers to people of mixed race), two Indian and 17 white participants.

Tables 4–6 show the final number one priority, indicated by the average, of each of the five groups and related to knowledge, skills, and training. It was possible for different groups to identify the same idea as a priority. This was the case for Groups 4 and 5, which both identified danger signs of illnesses as a priority.

The rating for knowledge ranged from 28 to 32. The top priority related to knowledge is the Road to Health chart, with a total of 31, and the highest average, of 5.58. Danger signs received a rating of 29, and an average of 3.63. Although basic knowledge on pertinent conditions

Table 4
No. 1 priority of each participant group regarding knowledge required by CHWs to contribute to an IPL initiative (n = 56).

Nominal group	Idea number rated No. 1 priority per group	Participants' ideas	Idea rating	Total rating per idea	Average rating (rating divided by number of participants)
Group 2 CHWs	5	Road to Health chart	2, 3, 3, 3, 4, 4, 4, 5	31	5.58
Group 5 Coordinators/ Facilitators	14	Danger signs of illnesses	1, 3, 3, 3, 4, 5, 5, 5	29	3.63
Group 3 IPL students	4	Basic knowledge on pertinent conditions	2, 2, 4, 4, 4, 5, 5, 5	31	2.82
Group 4 IPL students	9	Danger signs of illnesses	1, 2, 2, 4, 4, 5, 5, 5	28	2.55
Group 1 CHWs	1	Adherence support	1, 3, 4, 4, 5, 5, 5	32	2.29

Table 5

No. 1 priority of each participant group regarding skills required by CHWs to contribute to an IPL initiative (n = 56).

Nominal group	Idea number rated No. 1 priority per group	Participants' ideas	Idea rating	Total rating per idea	Average rating (rating divided by number of participants)
Group 2 CHWs	1	Wound care	1, 3, 3, 4, 4, 5, 5, 5, 5, 5, 5	50	4.17
Group 4 IPL students	1	Taking vital signs	1, 1, 2, 3, 4, 4, 4, 5, 5, 5, 5	34	3.09
Group 3 IPL students	1	Taking vital signs	1, 1, 3, 3, 4, 4, 5, 5, 5	31	2.82
Group 5 Coordinators/ Facilitators	6	Communication skills	2, 4, 5, 5, 5	21	2.63
Group 1 CHWs	1	Urine, pregnancy, and blood glucose tests	1, 1, 1, 3, 3, 4, 4, 5, 5, 5	32	2.29

rated 31, the average on this issue (2.82) is lower than that for danger signs. The rating for danger signs of illnesses is 28, with an average of 2.55. Adherence support rated 32, but obtained the lowest average (2.29), considering all the priorities listed.

Table 6 shows that wound care skills obtained a rating of 50, and an average of 4.17. Taking vital signs received ratings of 34 (average 3.09) and 31 (average 2.82) respectively. Taking vital signs was individually presented, since both groups considered this skill to be a priority. Communication skills rated 21 (average 2.63). Although urine, pregnancy and blood glucose test rated 32, the average (2.29) is the lowest of the five most highly rated skills.

As indicated in Table 6, the ratings for training issues range from 16 to 34. General health promotion rated 34 (average 3.09), emergency care rated 33 (average 3.00), and wound care rated 35. Although the rating of 35 for wound care is higher than that of the first two priorities, that is, 34 and 33, the calculated average (2.92) implies a lower ranking, as depicted in Table 5. Health promotion rated 29 (average 2.07), and communication rated much lower (16, average 2.00) than the rest of the priorities.

Table 6

No. 1 priority of each participant group regarding training required by CHWs to contribute to an IPL initiative.

Nominal group	Idea number rated No. 1 priority per group	Participants' ideas	Idea rating	Total rating per idea	Average rating (rating divided by number of participants)
Group 3 IPL students	2	Health promotion	1, 3, 4, 4, 4, 4, 4, 5, 5	34	3.09
Group 4 IPL students	2	Emergency care/first aid	1, 1, 2, 3, 4, 4, 4, 4, 5, 5	33	3.00
Group 2 CHWs	2	Wound care	1, 2, 2, 2, 3, 4, 4, 4, 4, 5	35	2.92
Group 1 CHWs	10	Health promotion	1, 2, 3, 4, 4, 5, 5, 5	29	2.07
Group 5 IPL Coordinators/ Facilitators	2	Communication skills	3, 4, 4, 5	16	2.00

5. Discussion

The aim of the study was to describe the knowledge, skills, and training CHWs require to contribute to an IPL. Through a structured nominal group discussion process, participant groups identified the top priorities related to the aim of the study. Alignment by all participant groups was noted across knowledge, skills, and training competencies required by CHWs to contribute to the IPL initiative. In this study, IPL students referred to basic knowledge of pertinent conditions, and danger signs of illnesses as being important to IPL. In terms of skills, the students considered taking of vital signs as important, whilst the facilitators listed communication as a priority. A student group rated general health promotion as a crucial topic for training of CHWs. The researchers expected both these groups to be informed about the knowledge, skills and training CHWs would require to contribute to IPL. Prior to joining the structured faculty of health sciences IPL initiative, students attend several orientation sessions. One of these sessions involves information on an interprofessional approach to a simulated patient case. IPL facilitators, however, are responsible for presenting IPL-related content, such as how to apply a person-centred care approach, and the core competencies that the students should master. Facilitators coordinate the session, during which students must manage a simulated patient case. Notwithstanding the CHWs not having been exposed to any formal IPL-related content, they were able to prioritise adherence support as a knowledge area, and wound care, urine, pregnancy, and blood glucose testing as vital skills needed. Wound care and health promotion were part of necessary training.

In theory, the expectation that CHWs would be able to demonstrate competencies related to a specific project or initiative is not unique. Brownstein and colleagues (2011), for example, consider matching CHW skills with specific tasks to be important. They also list competencies such as community outreach, patient education, supporting individualised goal setting for patients and facilitating access to healthcare facilities and home health devices, as vital skills. The development of other essential skills, for instance, community-level testing, communication, and critical-thinking skills, is supported by various other authors (Colleran et al., 2012; Fergusson et al., 2012; Fisher et al., 2015; Laktabai et al., 2018).

However, CHWs could also benefit from recommended global health competencies. Benzian et al. (2015) recommend the inclusion of core global health competencies in the education of healthcare professionals and specific public groups, in response to increasing numbers and the expanded scope of the healthcare workforce. This study resulted in a matrix that includes knowledge, skills, and abilities, as well as supporting competencies. According to these authors, competencies such as disease management, health promotion and professional ethics are tailored to promote interdisciplinary education and patient care, by focussing on the knowledge and skills of the various groups. The same authors strive to minimise the complexity of the mentioned matrix, to enable the practical application of competencies (Benzian et al., 2015). Moving towards a more diverse range of skills that support primary care,

Campbell et al. (2015, cited in Pálsdóttir et al., 2016) propose a ‘paradigm’ shift in health workforce development efforts. Key strategies, according to this proposal, should include promoting quality and standardised training, and the acquisition of competencies. These competencies should not only focus on local needs, but should ensure a globally competent workforce (Benzian et al., 2015; Pálsdóttir et al., 2016).

Although ample evidence exists that CHWs are suitably equipped to address health disparities, based on their unique set of competencies, CHW integration into healthcare teams still requires the development of such competencies through tailored training (Malcarney et al., 2017). A clearly defined list of competencies that reflect and recognise the unique character of CHWs needs to be established (Corder-Mabe et al., 2019; Malcarney et al., 2017). The competencies of CHWs that are related to health-care integration are vital for supporting CHWs and healthcare professionals to maintain the CHWs’ unique contribution to teams (Malcarney et al., 2017).

6. Value of the study

The priorities identified are particularly suitable if CHWs are to contribute to healthcare opportunities, such as screening of learners and adult patients with diabetes, as offered through this IPL initiative. Furthermore, CHWs, could benefit from this interprofessional learning if they could attend structured training sessions related to the required knowledge, skills, and training. Collaboration and knowledge sharing between IPL students and CHWs, similarly, could facilitate the establishment of cross-sectoral relationships endorsed by the Department of Health of South Africa (DoH, n.d.). The two rural communities could benefit if their health issues are addressed through a collaborative effort. In the context of supporting CHWs through interprofessional learning, these study findings have been collated with unpublished findings obtained from an EcoGram and a scoping review, and contribute to supporting CHWs, as envisioned.

7. Limitations

Due to operational constraints, nursing personnel involved with CHWs at affected primary health clinics could not participate in the group discussions. Their input may have enriched data further. Exploring training methods or modes, rather than training content, could possibly have added another dimension to data obtained. The contextual nature of the study requires careful consideration when applying the findings to another setting.

8. Conclusion

To optimise CHWs’ contribution to IPL, the input of all stakeholders needs to be considered when clarifying the knowledge, skills, and training required by CHWs. Within the context of this IPL initiative, the knowledge, skills, and training of CHWs as identified by NGT participants, contributed to the development of structured training sessions containing content that could enable CHWs to contribute to this IPL. The authors propose that future research should focus on addressing best practices related to the integration of CHWs into IPL.

Author contributions

Prof Marianne Reid and Prof Annemarie Joubert collaboratively conceptualised and conducted the study that is, determined the methodology, and participated in the collection, analysis and interpretation of data, and finally preparing the manuscript.

Declaration of Competing Interest

The authors declare that they have no known competing financial

interests or personal relationships that could have appeared to influence the work reported in this paper.

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