

Implementing Workload Indicators of Staffing Need (WISN) Tool to Determine Human Resources in Primary Health Care Settings in South Africa: A Concept Analysis

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Abstract: Several African countries have adopted Workload indicators of staffing need (WISN) for health workforce planning and management and to address critical health workforce shortages. However, until now, there is a dearth of research that explores an understanding of what WISN implementation in primary health care (PHC) settings. This study aim was to analyze the concept WISN implementation in the PHC settings in South Africa. This study adopted a qualitative approach and a grounded theory research design by Strauss and Corbin. Participants were purposively selected and theoretically sampled from a population of PHC nurse managers and provincial WISN coordinators in South Africa. Multiple sources of data including participant observation, documents analysis, and in-depth interviews, were used to collect data from key informants. Data analysis was guided by a systematic process of studying a concept presented by Walker and Avant. Emerging findings on WISN implementation antecedents included inadequate workforce planning approach as the main category. The characteristics that emerged were that the WISN tool emerged as a significant approach in health workforce planning and management. The conclusion of this research is that WISN is an effective and efficient tool for health workforce planning in Primary health care settings in South Africa.

Keywords: concept analysis, health workforce planning, primary health care nurse manager, workload Indicators of staffing need (WISN)

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I. Introduction

A growing body of knowledge suggests that adoption of inappropriate health workforce planning interventions for the country contributes to critical shortage of health workforce (HWF) and weak health systems [1, 2]. South Africa is one of the countries that has a critical shortage of health workforce, particularly in rural and remotes areas [3]. Shortage of health workforce is due to several factors including high attrition, high inability to retain health workforce and many year of apartheid [4], negatively affecting provision of health services, especially in remote and rural areas [5, 6].

Literature revealed that due to due to shortage of lower-level categories such as support and general health workforce, professional nurses would spend most of their time performing non-clinical activities such as cleaning and opening of files [7]. The high shortage of support staff and imbalanced skills mix was reported in the 2012 national health care facility audit findings conducted across 3074 primary health care (PHC) clinics in South Africa. According to this facility audit report, about (97%) of the PHC clinics had professional nurses (PNs), with high shortage of support staff. It emerged that (21%) of the clinics did not have not have facility managers, further (84%) of clinics had no pharmacist services, while (57%) lacked administration support staff, thus increasing the PN's workload pressure [8]. Shortage of support staff is associated lack of healthcare access, particularly from rural and underserved areas [5, 9]. These shortages negatively affect available HWF motivation, distribution of health services and health outcomes [10]. However, evidence suggest that effective implementation of rigorous health workforce planning tools such as the Workload indicators of staffing need (WISN) can facilitate adequate staffing required to achieve quality health care [11, 12]. Successful WISN implementation is hindered by the lack of a common understanding about the WISN tool and its implementation process in PHC settings in South Africa. Consequently, the purpose of this paper is to contribute towards clarifying the concept WISN implementation in PHC facility settings in South Africa.

II. Background To The Study

Globally, the notion of rigorous health workforce planning and improvement of quality of healthcare has received considerable attention in the past two decades [13, 14]. According to the World Health Organization (WHO), WISN is an human resources for health (HRH) planning and management tool initially developed by Peter Shipp in the 1990s [15]. Interest in WISN implementation arises from the acknowledgment

that it plays a vital role in facilitating effective and efficient HWF planning [16, 17]. In South Africa, the need to ensure Universal Health Coverage (UHC) for all the citizens necessitated the implementation of rigorous HWF planning strategies [18, 19]. The South African Department of Health developed the WISN implementation guideline in 2015, which includes PHC normative (norms) and standards to determine PHC facility specific staffing norms [20] to guide the WISN implementation process.

Despite the growing interest in WISN tool and its implementation, there are mixed views about it because there is no common understanding of this tool. World Health Organization, 2010; 2016) view WISN implementation as a bottom-up health workforce planning and skills mix balancing tool based on workload and expert opinion [11, 21]. This conceptual ambiguity presents a challenge in terms of replicating WISN implementation programmes, as well as in undertaking a systematic way of determining staffing requirement, workload pressure and staffing projections, due to the lack of exactness of concepts. According Brink, the application of poorly defined concepts in research is not advisable as they affect the trustworthiness or validity and reliability of the study [22].

The purpose of this study was therefore to analyze the implementation of the WISN tool to determine human resources in Primary Health Care setting with the intention of generating a better understanding of how PHC nurse managers and the provincial WISN coordinators view and understand the phenomenon WISN implementation. Guided by Walker and Avant concept analysis methodology [23], the two key questions of interest were: (a) how is WISN tool implementation in PHC settings viewed and understood by PHC nurse managers and WISN coordinators and (b) what are the causal conditions and consequences of WISN implementation in PHC settings in South Africa. The aim of the study was to analyze the concept WISN implementation in the PHC settings in South Africa in order to gain shared understanding of the phenomenon. The objective of the study was to analyze the phenomenon WISN implementation and the meaning attached to it in order to determine the participants' understanding of WISN.

III. Methodology

This study adopted a grounded theory approach to allow the researcher the opportunity to derive a general, abstract theory of process, action-interaction grounded in the views of the informants. Grounded theory was also adopted in order to understand how the phenomenon of workload indicators of staffing need (WISN) implementation is conceptualized and experienced by participants. Data collection techniques included observations, individual and focus group interviews, and document analysis in the field [24]. Observation included looking, listening and did not start by asking questions about the concept, however, allowed participants to proceed at their pace while keeping the concept in mind. Asking of questions only arose when participants failed to bring up incidents related to the concept in question.

Informants were purposively selected as determined by their involvement in WISN processes and experience of WISN implementation followed by theoretical sampling [25]. Purposive sampling was used in this qualitative study since the goal of this process was to get an opportunity to connect with research participants, see the world from their viewpoints and answer the research questions, and not to generalize findings [25]. A purposive sample comprised of respondents who are likely to be able to provide information about the phenomenon under investigation [26], aimed toward theory construction, not for population representativeness. The process helped in increasing the diversity of the sample by searching for different properties until data collection could no longer add anything new to a category/s [25].

Theoretical sampling was applied for data collection and development of a theory whereby the researcher collected, coded and analyzed the data and then decided which data to collect next and where to find it, in order to develop the theory [25, 27]. Fourteen informants participated in this study. They included PHC nurse managers, district and provincial HR managers (WISN coordinators), a National WISN coordinator and sub-district HR managers. The observations were conducted in the informants' offices or their clinical settings, where HWF planning processes occurred. Data observation involved recording physical and verbal behavior activities that an individual or individuals depicted related to WISN implementation and practices. The researcher observed how the WISN is implemented, and focused on how PHC facility managers that acquired WISN planning skills and experience interacted with the facilities in need of HWF planning support. In-depth interviews were conducted in line with Strauss and Corbin's [24] grounded theory approach, focusing on the questions related to the WISN implementation understanding and meaning, situations which led to WISN adoption and implementation and perceived implementation outcomes.

Data was analyzed using Strauss and Corbin's [24] grounded theory methodology, which is regarded as the most suitable in concept analysis. Selected elements of Walker and Avant's [23] model of concept analysis were utilized for in-depth interrogation of the phenomenon WISN implementation in PHC settings in terms of attributes, antecedents and consequences of this phenomenon. This framework has six elements and this paper focuses on one of the six elements: defining the core phenomenon or core concept [23]. The core phenomenon of interest was WISN implementation in PHC facility settings.

In qualitative research, data findings must be trustworthy, reliable and reflective of the particular phenomena, which can be generalized to that specific study context [28]. Triangulation was done in order to achieve scientific rigor, by utilizing multiple sources of data, namely: observation, document analysis and in-depth individual interviews with participants [29]. To enhance internal validity of the study, data sources included policymakers from levels of care [22]. Member checking was conducted, filling of gaps and verification of concepts and categories that emerge from the data [29]. The researcher went back to the interview to verify if the recorded data was accurate or needed elaboration; this was done to increase validity [30]. The participants were also assured that their responses would not be identified with them personally; however, codes would be used as identifiers known to the researcher and her supervisor only. Bracketing strategy was also introduced in order to mitigate for researchers' preconceptions when engaging literature, which was used, for comparison with emerging categories [31].

Ethical clearance to conduct the study was obtained from the University of KwaZulu-Natal Humanities and Social Science Research Ethics Committee: the Study protocol reference number is HSS/2065/016D. Permission to conduct the study was obtained from Umgungundlovu Health District and Kwazulu-Natal Provincial Department of Health.

IV. Results

The findings in this study reflected that the phenomenon of WISN implementation is conceptualized as a multifaceted phenomenon. In line with Walker and Avant's model [23] three categories emerged in the analysis of the concept WISN implementation. These included (a) WISN implementation antecedents, (b) WISN implementation characteristics /attributes and (c) WISN implementation associated consequences or outcomes.

1.1. WISN implementation antecedents

Antecedents are those incidents that provided the basis for the introduction of WISN in PHC settings in South Africa. Antecedents provided a social context within which the phenomenon WISN implementation is based. Four sub-categories emerged under WISN implementation attributes: (a) unstandardized health workforce planning practices; (b) maldistribution and inequitable distribution of services; (c) critical shortage of professional staff and (d) Inadequate management of PHC facilities

1.1.1. Unstandardized health workforce planning practices.

Adoption of the WISN tool at PHC setting emerged as a way of addressing unstandardized health workforce planning across all nine provinces in South Africa. The key informants indicated that, in 2012, prior introduction of WISN, health workforce planning and management were conducted differently in each province with many inconsistencies. According to key informants, there were several challenges associated with unstandardized HWF planning which included inability to compare staffing requirements across all provinces. WISN coordinators key informants reflected about challenges they experienced in determining and planning staffing requirements for PHC facilities across the country due lack of standardized approach to health workforce planning. Key informants also reflected about the challenge of comparing workload pressures, which also made it difficult in identifying facilities that are under the greatest pressure and in need of greatest staffing support. This is reflected in the extracts below:

... provinces used different approaches to determine staffing requirements that were not consistent across facilities... what I know is that this inequity and inequality in health service distribution goes back a long time, even before the 1994... [KI 1].

from HR planning point of view, it has been a challenge for us to plan and project staffing requirements for the whole country because we did not have a standard approach to determining staffing across the country... we needed a tool that we can use to determine staffing in a uniform way for the whole country [KI 11].

1.1.2. Maldistribution and inequitable distribution of services

It emerged from the study data that there was maldistribution of health workforce across PHC facilities. The struggle to recruit and retain key health workforces emerged as another condition that led to HWF maldistribution. Key informants reflected that prior adoption of the WISN tool, attrition rates and migration from rural and remote areas to urban areas were very high. This is despite offering financial incentives, such as rural allowance to rural health professionals. According to key informants, this affected access to health care and inequitable distribution of health services. As indicated in these extracts:

...in our province, we try our best to ensure that there is fair distribution of health workers..., but if you check our attrition rates from rural to urban facilities is very high, this is despite the fact that we offer rural allowance for the rural staff [KI 6]

The attraction of staff with incentive like the rural allowance has not helped us much in our province,

particularly in addressing staff attrition of staff from rural to urban areas... this is because some health workers only want to work in or near big cities [KI 3].

... The audit report shows that while many more communities are gaining access to health care, those in rural and remote areas are yet to attain universal access to quality healthcare services... [KI 4].

1.1.3. Critical shortage of professional staff

Critical shortage of professional staff emerged as another condition, which led to adoption of the WISN tool for HRH planning. Key informants data revealed that due to shortage of health workforce, patients waited for long periods at the PHC facilities, sometimes until the start of the next shift. Key informants also reflected about their experiences of struggling to keep the PHC facilities open during the weekends, due to staff shortages. Key informants also reflected about unusual situations where some PHC facilities were operated by one professional nurse and an assistant nurse only without support staff. Participants cited this as a major setback because it meant that these facilities were inadequately staffed, as indicated in the extract below:

The province is in a crisis because the departments have not been employing adequate staff. Every now and then, you will find that there are service delivery strikes because there is staff shortage but we are overspending on overtime available staff have to work overtime due to staff shortages [KI 6]

You have seen how full it is and it's about 1:00 o'clock in the afternoon and there are still around 50 to 100 patients in there, just count by 7 o'clock this evening when they are supposed to knockoff, other patients will still be remaining... this is because of the staffing challenges. [KI 7]

1.1.4. Inadequate management of PHC facilities

Inadequate management of PHC facilities also emerged as another condition that led to adoption of the WISN tool in PHC settings in South Africa. It merged from data sources that PHC facilities were inadequately managed, facility managers were struggling to manage their facilities effectively because they spent most of their time doing clinical work. PHC nurse managers' key informants reflected about their experiences and inability to supervise or oversee the overall functioning of their facilities and having to take work home. The informants cited this as major setback because this meant they had to miss certain targets, which were important for achieving quality healthcare and an Ideal Clinic Realization and Maintenance (ICRM) status including other key national priorities, as indicated in these extracts:

Most of the day's 100% of the time, like yesterday, I tried to do my stats but I didn't get time because as soon as I go for seat there comes other people visiting the clinic or there is another pregnant patient. There is no time to do my core duties, I have to help those patients... my house is my office and it's not supposed to be like that that, paperwork is supposed to be done here [KI 5].

I don't get time for my management work or what must I do? You see because I also work just like sister (professional nurse) I cannot see all the mistakes until they come and audit it [KI 6].

1.2. WISN tool implementation attributes

Walker and Avant defined attributes as those characteristics that appear in a concept repeatedly and help researchers differentiate the occurrence of a specific phenomenon from a similar one. In this study, WISN tool implementation attributes are those characteristics unique to the understanding and implementation of WISN tool in the PHC facility setting. The characteristics that emerged from this study were grouped into four sub-categories; (a) facilitating bottom-up approach to health workforce planning (b) Facilitates implementation of Ideal Clinic Realization and Maintenance, (c) WISN is tool that facilitates effective management of facilities (d) WISN facilitating transformation of the health care system.

1.2.1. WISN tool facilitates bottom-up health workforce planning

It emerged from key informant interviews data that WISN implementation is conceptualized as tool that facilitates bottom-up approach health workforce planning. WISN implementation is perceived as a tool that offers facility managers from previously disadvantaged backgrounds opportunities to take part in planning for their staffing needs. It also emerged from observation data that the PHC nurse managers were able to generate their own staffing needs reports at facility levels owing to the capacity building workshops and continuous support received from WISN coordinators and the district support partners (DSPs). This is reflected in the extracts below:

I am happy about WISN training because we will be able to calculate our staffing requirement and send it to the District office with required motivation for additional staff needed in our facilities, ...we won't have to wait for the Head Office anymore ... [KI 6]

WISN implementation process allowed me to participate in planning staffing required for my facility... now I know where the gaps are (Document analysis KI 7).

1.2.2. Facilitates implementation of Ideal Clinic Realisation and Maintenance

Key informants conceptualized WISN implementation as a tool which supports implementation of National Health Insurance (NHI) through Ideal Clinic Realization and Maintenance (ICRM). It emerged from data that key informants perceived WISN as tool that facilitated ICRM implementation, particularly the rural and remote communities. The ICRM programme according to data sources required that PHC staffing requirement is determined according to the WISN tool and also in line with WISN calculations. The key informants reflected that their PHC facilities' staffing were regularly monitored by the district managers and their peers to ensure that they achieved the ICRM status. This is reflected in the extracts below:

Our facilities are always appearing orange or red in the ICRM peer review system, particularly for staffing...We are hoping that the WISN implementation will help us to achieve the ICRM status and achieve the green status ... [KI 8].

... As a province, we are interested in WISN because we believe it will facilitate appointment of adequate staff and achieve ICRM status. [KI 9].

1.2.3 WISN is a tool that facilitates effective management and planning of facilities:

It further emerged from key informants' interviews and other data sources that WISN is a tool that provide straightforward way to plan and manage health workforce. Key informant reflected about their satisfaction with the tool because they could use the WISN results to motivate for appointment of needed staff based on workload. Key informants also cited that the WISN approach exposed facility managers to be innovative, thereby enhancing their HWF planning skills by exposing them to the effective and efficient health workforce planning approach appropriate for the South African context. Key informants cited that they believed that through WISN implementation process they would attain adequate staffing and improve management of PHC facilities, particularly leave management. They also cited that they were looking forward to improving the quality of healthcare. This is reflected in the extracts below:

... I think if the WISN implementation could be fast-tracked, then most of our staffing problems will be resolved. Because most of the patients are complaining about our services particularly when they have to wait for long time before getting treatment ... so if we can get adequate staff ... then I believe we can also offer people the quality services efficiently ... [KI 7&8].

In fact, when they introduce WISN colleagues at the PHC facilities thought that WISIN will come to their rescue and improve their staffing situation more particularly when it comes to appointment of PHC management staff. This is because more than forty percent of our facilities in this district do not have the operational managers [KI 10].

1.2.4. WISN facilitating transformation of the health care system

Key informants in this study also conceptualized WISN as a driver for organizational transformation in terms of skill mixes. It also emerged that, through WISN, facilities that did not have right skills mix were identified to ensure that they staffed appropriately. Key informant cited that their organizational structures have changed to include all skill mixes in accordance to the package of services. They reflected that WISN also facilitated changes in the skills mix of health workforce in PHC setting by advocating for staffing based on facility or service's needs. This ensured that staffing mix required in the PHC, facilities were prioritized based on the changing burden of disease. This is reflected in the extracts below:

Our skills mix numbers are changing now, instead of one category of staffing type, we will have balanced skill mix because of WISN. Before WISN implementation, it was usual to find our facilities being operated by professional nurses only without other skill mixes [KI 3]

I view WISN as a tool that will help us to ensure that our facilities including those in rural areas are appropriately staffed, with right numbers and right skills to improve delivery of health services. [KI 4].

I believe that if we apply WISN, it will assist us a lot ... the pattern of disease here have changed; we need more people to work here with the new skills [KI 9].

1.3 WISN implementation associated Consequences/outcomes

Walker and Avant have defined consequences as 'those events or incidents that occur as a result of the occurrence of the concept' [20]. Here we examined two types of consequences associated with WISN implementation. The consequences associated with WISN were grouped into two subcategories (a) intended Consequences: Improved health outcomes (b) unintended Consequences: Controversial debate on shortage of nurses and inappropriate utilization of this category.

1.3.1. Improved health outcomes

Key informants in this study reported improved staffing because of WISN based health workforce planning approach. Continuous capacity building and technical support offered to PHC nurse managers

contributed to improving their health workforce planning capabilities and equitable distribution of health workforce, especially in the rural areas where there is a greatest shortage staff. According to key informants, WISN implementation process provided PHC nurse managers together with HR managers with an opportunity to distribute HWF equitably within and between the PHC facility settings. It also emerged from key informants that access to quality health care at PHC settings had improved due to adequate staffing. This is reflected in the extracts below:

In 2015, one year after the introduction of WISN tool, we determined staffing gaps and surpluses at PHC setting from about 90% of all fixed PHC facilities with the technical support from the provincial WISN coordinators and the district support partners and now we can plan distribute our staff fairly (Document analysis KI 7).

So, from our side as organizational development practitioners, the WISN is a good tool, because we can see that the facilities staffed according to this tool run smoothly...it will help us increase access to quality health services for our communities [KI 11].

1.3.2. Controversial debate on shortage of nurses and inappropriate utilization of this category

It emerged as an unexpected consequence that the WISN tool implementation provided evidence that there was no shortage of professional nurses in PHC settings but shortage of other staff mix required to support the professional nurses, particularly specialized nurses such as midwives. Some key informants in this study found it difficult to accept that they had shortage of other skills mix because there were an overlaps in the execution many health service activities. On the other hand, participants from the provincial departments reflected about their concerns about the cost of using professional nurses to do non-clinical duties at PHC settings due to moratorium on appointment of non-clinical staff. The key informants reflected that professional nurses were focusing on none nursing duties such cleaning of the facility, data capturing, and other non-clinical activities, which contributed to apparent shortage of nurses across PHC facilities in the country. This is reflected in the extracts below:

We are used to have nurses doing everything and that is why you will always hear about the shortage of nurses even in a situation like ours where we do not have nurse shortages, but is because we do not have other HWF members such as data capturers, cleaners, pharmacy assistants... This is the way we have always ran our facilities... for me; I think it will take a long time for us to change our perceptions, particularly our decision makers [KI 13].

...Even after I have presented the results to the policy decision makers, they could not believe it that we are running such an expensive system, where we priorities appointment of nurses so that they can to do all types of non-nursing duties ... [KI 14].

V. Discussion

The WISN tool in this study emerged as one of the possible solutions to address the health workforce planning challenges in South African PHC settings. This study reflected on the antecedent conditions which led to adoption the WISN tool, analyzed the phenomenon WISN implementation and the meaning attached to it in order to determine the participants' understanding of WISN for HWF planning at PHC settings in South Africa. It emerged from this study that the adoption of the WISN tool was necessitated by inadequacy of current health workforce planning approaches to provide quality healthcare for all South Africans. Participants revealed that lack of standard approach to HWF planning across the provinces necessitated adoption of the WISN tool. They also revealed that there were several challenges associated with unstandardized HWF planning which included inability to compare staffing requirements across all provinces and between facilities. This is in line with literature which reveals that lack of standard and flexible approach to health workforce planning exacerbates inequitable distribution of health workforce across many countries [14].

Maldistribution of HWF and inequitable distribution of services also emerged as a concept that led to adoption of the WISN tool for health workforce planning in South Africa. This is in line with the results of the study conducted by Padarath et al, who reported that the challenges associated with maldistribution and brain drain in South Africa were due to constant migration of health workforces between urban and rural areas [9]. Achieving equitable distribution of HWF and healthcare services remains a challenge due to brain drain in South Africa [5]. To improve the geographical distribution of health workers, the South African government have used combinations of compulsory community service and incentives such rural allowance. However, relying on financial incentives without improving the working conditions have not helped to curb high attrition of health workforce [33, 34].

More importantly, WISN was adopted to address critical shortage of health workforce, support and general HWF particularly in rural areas. Literature shows that shortage of healthcare professionals in rural communities poses a serious challenge to equitable healthcare delivery in South Africa [5, 33]. Ideally, inadequate HWF numbers is associated with shortage of appropriate skills mix and inequitable distribution of

health services [9, 35] which is also linked to poor health workforce retention.

Inadequate management of PHC facilities emerged as another causal condition that led to adoption of the WISN tool in PHC settings in South Africa. The participants reflected about poor management of PHC facilities due to lack of time to manage their PHC facilities. It emerged from this study that facility managers had no specific period set aside to manage the PHC facilities effectively because they spent most of their time doing clinical work. This is in contrary with local literature which specifies that PHC facility nurse managers are responsible for overseeing the implementation of the PHC package, management of the PHC facilities including HWF planning and supervision [36, 37]. It is also important that PHC facilities are adequately staffed so that PHC nurse managers can be afforded time to manage the facilities effectively [38]. Kabene, 2006 recommended that effective human resources management strategies are greatly needed to address challenges in health care system in order to improve patient health outcomes and access to health care [39].

The WISN tool implementation attributes that emerged from this study included that: WISN is perceived as a tool that facilitates bottom-up approach to health workforce planning. Participants perceived WISN as a tool that encouraged PHC nurse managers' participation in determining staffing requirements including recruitment and appointment process of their staff. This is supported by literature which indicates that top-down approach has negative effect on the health system and it is associated with poor retention and low morale among employees [40]. This is also in line with literature which discourages top-down management approach because of its' effect on employee motivation and retention [36]. According to study conducted by McQuide in Namibia, WISN implementation facilitated empowerment of health workforce at the facility levels to participate in determining facilities' staffing needs [16].

WISN was also perceived as driver towards attainment of government priorities such as an Ideal Clinic Realization and Maintenance (ICRM). The ICRM idea has been introduced in preparations for National Health Insurance (NHI) implementation towards Universal Health Coverage (UHC) in South Africa [18, 19]. According to Hunter et al., facility staffing have to be monitored to ensure that there is staffing improvements in order to achieve the ICRM status at PHC facility settings in South Africa [19]. WISN emerged as a tool that facilitated ICRM realization and desired transformation of the South African healthcare system. This transformation attributes are in line with the studies conducted on other African countries which showed that WISN facilitated appointment of health workforce required for health system reform agenda [16, 19].

In this study, a range of PHC nurse managers support initiatives were reported to address their health workforce planning capacity at a facility level. These activities included use of computer particularly for those in rural and underserved areas and technical skills to utilize the WISN methodology and software. Literature also shows that a number of managers do not use innovations because it is too technical for them or they lack capacity and necessary skills to support the adopted innovations [17, 21, 41]. The WISN coordinators together with the donor-supported partners supported WISN implementation process by conducting capacity-building workshops and teaching PHC nurse managers from diverse backgrounds about WISN implementation procedures. The support provided to PHC nurse managers from diverse backgrounds to enable them to determine their health workforce requirements independently is in line with the experiences from other African countries [21, 42]. This view is supported by of several studies conducted in different African countries which showed that WISN is an appropriate tool for determining staffing requirement at different healthcare settings with varied backgrounds [16, 43, 44].

Intended outcomes associated with WISN included better health outcomes, adequate health workforce planning, improved quality of care and innovative health workforce policy planning. On the other hand, unintended outcomes included a controversial debate inappropriate utilization of professional nurse category and shortage of nurses. South Africa has a nurse-based health care system, nurses represent the majority by far, around 80% of health workforce and they provide the bulk of public-sector health services [7]. However, this study revealed that imbalanced skill mix characterized by critical shortage of support staff such as general workers, admin and allied health workforce contributed to nurses shortage. This is supported by the study conducted by Munyewende and Rispel, which reported that nurses in PHC settings were spending much of their time doing non-clinical duties which included cleaning and admin activities rather than clinical work [36], contributing to apparent shortages of nurses in PHC settings in South Africa.

Although this study has achieved its' aim, there were some unavoidable limitations related to the following: The research was conducted only at UMGungundlovu Health District in KwaZulu-Natal Province, South Africa, with a small population size of nurse manager and the provincial WISN coordinators. The WISN tool implementation is departmental policy and participants may have felt obligated to give positive responses to appease their employer. Mainly senior staff members (PHC nurse managers and provincial WISN coordinators) were interviewed; it would be interesting to gauge the views of lower level staff categories including junior nurses (Staff nurses) general and administrative staff from PHC settings in South Africa. Therefore these findings cannot be generalized.

VI. Conclusion

The conclusion of this research is that WISN is an adequate tool for health workforce planning in Primary health care settings in South Africa. From this study finding, we can conclude that there is a need to ensure that professional nurse categories are appropriately utilized according to their professional scope of practice. It is, therefore recommended that the role of support staff such as allied, general and admin health workforce in the provision of quality healthcare services be considered and enhanced in order to reduce workload pressure from clinical health workforces. The health system particularly could be strengthened from task shifting of non-clinical activities such as cleaning and administrative work from professional staff to lower skilled categories. This would help elucidate perceived shortage of professional nurses' controversy in South African PHC settings. A general recommendation is that further research need to be done regarding conceptualization of the WISN implementation in hospital settings in South Africa.

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