

Nurse's Perception of Papua Province's Ability to Run Master Program of Occupational Health Nursing

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Abstract: Industrial development in Papua Province has not been accompanied by an increase in the specialization of Occupational Health Nursing (OHN) education, despite the demands for quality health care services. The objective is to explore the nurses' perception on managing a master's program in Occupational Health Nursing (OHN). The study methods using descriptive cross sectional design. The variables were master program of OHN as the dependent variable and nurse perception as the independent variable. The population were nurses in Papua and the sampling technique was simple random sampling. Total sample are 184 nurses as sampling with confidence level of 95% and confidence interval of 5% from 350 total population. The study used univariate data analysis which includes demographic data and respondents' perceptions of the ability of the Papuan people in implementing the program. The data collection tool was a mixed questionnaire of Likert scale processed by the SPSS (Statistical Package for Social Sciences) 25 version application and R program for sampling processing. The results show majority respondents (76.1%) were interested in continuing the OHN Master's program, and most of them (73.3%) had the perception that the province of Papua was able to run it. The research projected an initial signal that specialist education in OHN was for the benefits of workers, industries, the public, and the nursing profession.

Keywords: Master program, Occupational Health Nursing, Papua.

INTRODUCTION

The growth and development of major industries in Papua Province for the last 10 years has not been accompanied by an increase in the quality of specialist industrial nursing education resulting in a gap between nursing education products and the demands for quality health care services in the industrial settings. This trend is actually not only happening in Papua (Tukayo et al., 2021). Even throughout Indonesia. So far, there is no OHN specialization education in Indonesia, either at the diploma, undergraduate or postgraduate levels (Efendi et al., 2018). There are only general occupational safety and health training programs, not specific to nurses provided by the Ministry of Health (BPPSDM, 2016). Meanwhile the demands for accreditation and certification occur everywhere (Kemenkes, 2020). Health care providers are faced by the demands and needs for improving the quality of health care services in all sectors (Kemenkes, 2020). The government through the Ministry of Health requires the accreditation of every health care services from the regional to the central levels. This is a signal that improving the quality of industrial nursing education or OHN must adapt to the existing phenomena. Excellent health care services in the industry have become a necessity for the reputation of the industry, improving workers' health services, enhancing professional quality and boosting the wider satisfaction to the community (ABOHN, 2016).

In some developed countries, the development of OH nursing education has been so rapid along with the progress of the industrial sector, it has even started since the 60s (McCullagh, 2012). Occupational safety and health nursing education has become part of the available specializations, from diploma to doctoral nursing programs (WHO Regional office for Europe, 2001). This happens because it is supported by a system, well-established regulations from the government and the commitment of

factory owners or mining entrepreneurs who are increasingly facing the complex of industrial health-related problems (Alberta, 2018). In another words, the complexity of the workers' health problems that exist in industries also penetrates the nursing sector, not only various work accidents, chemical poisoning, gas and food, but also many kinds of diseases that occur to workers. The Covid-19 pandemic is a clear example that requires the dynamics approach of industrial health initiative that must be anticipated (Mazzucato et al., 2021). All of those demand up-to-date handling from the nursing profession view point.

As part of the evidence based practice, nursing procedures are carried out based on research (Pandya, 2019). The implementation of occupational health nursing services is no difference. It is a research based competency (Topcu & Ardahan, 2019). Unfortunately OHN practices in Indonesia are not yet based on the competency from formal education, but training (Tukayo et al., 2021). Producing professional OH staff from semi-formal education or training is contrary to the laws and regulations and the national health system, both the Nursing Act and the Health Workforce (Kemenkes, 2019; Kurniati et al., 2015). According WHO (2012), one of the roles of Occupational Health (OH) nurses is as researcher. The competencies of OH nurses as researchers is taught intensively at the post-graduate level (University of Wisconsin-College of Nursing, 2018). Eventhough at the undergraduate level, introductory research subject is taught , but it is not enough. At the postgraduate level, among other things, the ability to prepare international journals is also required, in addition to other clinical competencies that are much different from the training programs that have existed as a requirement for nurses working in industry (McCullagh, 2014). Moreover, the degree of the specialist nurses according to the Law is only given to those who have completed the post-graduate program (Kemenkes, 2019). Therefore, in order to be professionally competent, it is necessary to meet the requirement. Moreover the core curriculum in the postgraduate program is much deeper than undergraduate or the diploma levels.

Research of a master's degree holder can be academically accounted for in order to support plans for the development of educational programs and other clinical purposes, including the implementation of the OHN post-graduate program in Papua. The establishment objectives of a master degree of OHN program in Papua is not only to educate the Papuan people but also to improve the quality of the nursing profession in Papua and provide better job opportunity (Kemenperin, 2019). The problem is that nursing education facilities in Papua are still lacking, lack of infrastructure, postgraduate level educational institutions are not available and the human development index is low (Tukayo et al., 2021). Those major problems are the main challenges in implementing the program. This study attempts to present the results after exploring Papuans' capabilities whether or not it is able manage the master degree of OHN program in the province. The objective was to explore the nurses' perception on Papua province's ability to manage a master's program in Occupational Health Nursing (OHN). The study used quantitative model with cross sectional design, with the expected implications were on the wider insights on nursing specialization among nurses particularly on OHN and the implementation of its establishment in the remote area such as Papua.

METHODS

Study Design and Sampling Plan

This study used a cross sectional descriptive design with a sampling technique using simple random sampling. The population is 350 nurses with a sample of 184 nurses. Sampling using the R program with a confidence level of 95% and a confidence interval of 5%.

The variables include Master Program of OHN (dependent variable) and Nurses Perception (independent variable). The population is Indonesian nurses (West, Central, East and Papua) whose data were obtained online, from 20 May to 29 May 2021. The questionnaire was based on a standardized questionnaire that has been conducted by Solomon (1982) in her journal entitled *The Effect of Master Degree in Occupational Health on the Delivery of Services to Workers*. The questionnaire referred to the standard of the National Institute of Occupational Safety and Health (NIOSH) of the USA which has

been pre-tested before the Occupational Health Courses, so that with minor modifications it can be directly distributed for this research.

Questionnaire Development

A mixed questionnaire was developed to obtain responses related to demographic data, location, respondents' interest to study OHN and perceptions of the Papua province's ability to manage an OHN postgraduate program. The questionnaire and its introduction were sent to respondents via Google Form. Respondents who filled out the questionnaire were considered to have given their consent to this research. The results of the data collection were then entered into the master table as raw data. The questionnaire was designed in 3 sessions. Session I contains 4 questions, designed to find out demographic data (gender, education, occupations and domicile). Session II contains 3 questions about the interest in continuing education to the post graduate level, specialization in the master of OHN and respondents' opinions about the potential of Papua Province in carrying out the master degree of OHN program. Session III contains 9 questions about respondents' perceptions of individual abilities to join Master Degree in OHN.

The data collection procedure was carried out through the distribution of online questionnaires. Inclusion criteria in sampling were registered nurses, practitioners, lecturers and nursing students. The data collection tool used Likert scale of 9 questions. The scoring method used four levels, namely *Strongly Agree* (SS), *Agree* (S), *Disagree* (TS), *Strongly Disagree* (STS). The list of statements as a data source was compiled based on Behavior Theory, because the theory provides an explanatory framework from the mediator suspected of changing physical activity (Guerin & Sleet, 2020), namely whether with the opening of opportunities for the OHN Masters program, respondents will be able to take part in studying in Papua. The theory was used by previous research in occupational health and safety (Guerin & Sleet, 2020).

The data analysis was univariate which includes demographic data and respondents' perceptions of the ability of the Papuan people in implementing the program. After data collection was completed, it was processed by the following steps: editing, coding, transferring, and tabulating using SPSS (Statistical Package for Social Sciences) 25 Version application software.

Ethical Consideration

The study was reviewed and approved by the Ethics Committee of Poltekkes Kemenkes Jayapura, Papua. A written informed consent form was obtained from all participants Online from Google Form. No personal identifiers were collected to protect the participants' anonymity and their confidentiality. The research proposal has received approval from the Health Research Ethics Committee of the Health Polytechnic (Poltekkes) of the Ministry of Health Jayapura number 003/KEPK-J/IV /2021.

RESULTS

Descriptive Statistics

Table 1 indicates that more male nurses are interested in OHN with a percentage of 63.6% and 36.4% for female nurses. Diagram 1 indicates the high interest of respondents to take education to the post-graduate level (41,8%), higher than the 'maybe' category (15,8%). Diagram 2 shows the interest in taking master degree in OHN education which reaches 76,1%. Diagram 3 shows that the majority of respondents believe that Papua is able to hold a master degree of OHN program which reaches 73,3%.

Table 1: Demography Data of Nurses in Papua Province

No	Demography Data	F	%
1.	Gender:		
	Male	117	63,6
	Female	67	36,4
2.	Education:		
	Diploma	62	33,6
	Under Graduate	86	46,7
	Post Graduate	36	19,5
3	Occupations:		
	Unemployed	30	16,3
	OH Nurse	132	71,7
	General Nurse	22	11,9
4.	Domicile:		
	West Indonesia	116	63,0
	Central	39	21,2
	East	29	15,8
Total		184	100%

Table 2: Respondents' Perception to Join the Master Degree of OHN (n=184)

Questions	Level of Approval				
	SS	S	N	TS	STS
I continued my Master's Degree in Worker Health to broaden my horizons on the health and safety of workers in the industrial sector.	120 (65,2%)	54 (29,3%)	0	10 (5,4%)	0
I continue my master's education to improve my career	118 (64,1%)	48 (26,0%)	0	16 (8,6%)	0
I am motivated to study Masters because I believe that I will be successful.	98 (53,2%)	76 (41,3%)	0	10 (5,4%)	0
I feel that I do not have the skills to use computers and the internet to support the postgraduate coursework.	48 (26,0%)	32 (17,3%)	0	80 (43,3%)	24 (13,0%)
I do not have the ability to write scientific papers well.	30 (16,3%)	54 (29,3%)	0	82 (44,5%)	18 (9,7%)
I am worried that my mastery of English which is still very minimal can prevent me from studying for Masters.	34 (18,4%)	112 (60,8%)	0	28 (15,2%)	10 (5,4%)

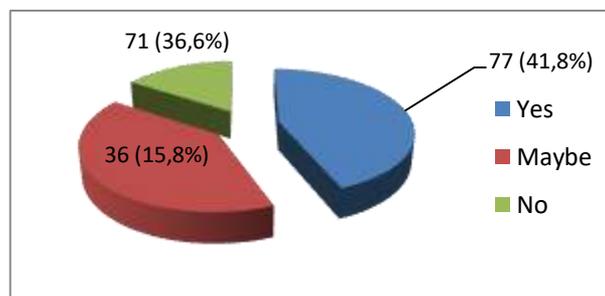
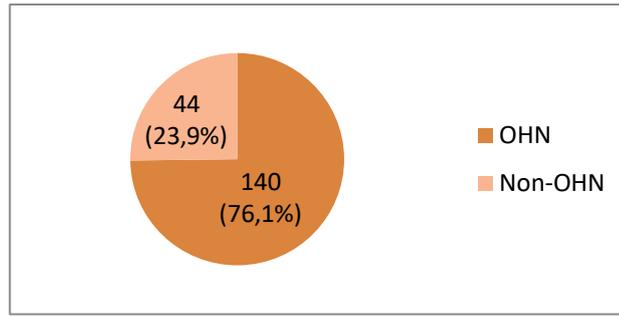


Diagram 1: Interest to Continue Study Master Degree



.Diagram 2: Interest to Study OHN Master Degree

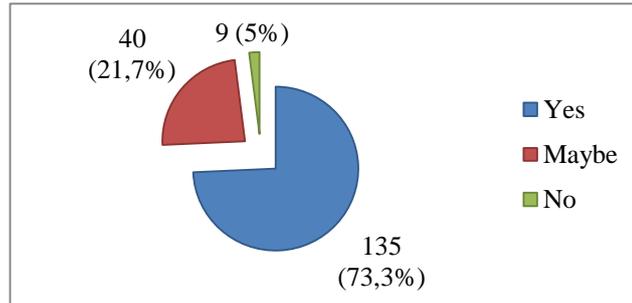


Diagram 3: Respondents' Perception on Master Program of OHN in Papua Province

Hypothesis Testing

Hypothesis 1 stated that Papua Province was able to manage a master degree of OHN program which was supported by the perception of respondents by 73,3% and their interest. They were from various regions in Indonesia to continue their studies to postgraduate level (41,8%) with specialization in OHN (76,1%). Hypothesis 2 stated that the province of Papua might be able to organize an OHN Master's program with the support of 73,3% of respondents' perceptions. Few of them were interested in continuing postgraduate studies (36,6%) and some of them were interested to focus on OHN specialization (76,1%). Although the hypothesis was not supported by detailed evidence that showed current OHN education/training system in Indonesia, as it does not yet have any OHN master program. Respondents' responses indicated that the current nurses' competencies to prepare them for administrative, consultative and supervisory positions at OHN were different from the competence of OH nurses whose education base is general nursing (Table 2-Appendix).

The weakness of this research lies in not involving a wider range of respondents by inviting more nurses from various healthcare centers, lecturers, policy makers, industrial centers and educational consultants. Previous researches have revealed the importance of the role of developing the nursing profession, especially in industry, in addition to discussing the role, duties and responsibilities of OHN in industry in developed countries (Kono et al., 2017; Lalloo et al., 2016; Nissinen et al., 2020). The striking differences with this study are, firstly, the lack of research on OHN studies in Indonesia where this study focuses more on developing postgraduate OHN studies in Papua as one of the remote areas in Indonesia. Secondly, this study will have positive implications for the profession, nursing professionals, industry and the wider community.

DISCUSSION

This study tried to explore the readiness of Papua province in organizing a master of nursing program. From the existing data shows several supporting factors support but there are also those that may hinder its implementation. As indicated in various literatures, initially the duties of industrial nurses included handling emergency cases, sanitation, nutrition, health promotion of employees and their families (Topcu & Ardahan, 2019). At present the role of OH nurses is experiencing development.

According to WHO, the role of OH nurses is as clinician, manager, advisor, educator, coordinator, consultant and researcher (WHO Regional office for Europe, 2001). Those seven main roles can be obtained through structured and intensive education and training (WHO, 2003). They are important aspects as the educational outcomes to be recognized as nursing professional. OHN is a branch of nursing specialization that professionally deserves legal recognition (WHO Regional office for Europe, 2001). Therefore, the implementation of OHN formal education is very much needed.

Diagrams 1 and 2 show the respondents' high interest in learning up to the post-graduate level. They also indicate the need for institutions that are able to organize and have educational facilities. The Indonesian education law states that getting an education is the right of every citizen (Ministry of Education, 2003). A good education is one that is in line with interests (Saputro, 2017). OHN is a branch of nursing that has bright prospects in the industrial era (Tukayo et al., 2021). Providing OHN nursing education facilities mean participating in realizing the welfare of the community, nation and the state. Moreover, the availability of occupational safety and health specialists is a necessity. Industrial regulations recommend every industry that employs 100 employees or more is required to have an OH specialist (Permenaker, 1992). Currently several major industries available in Papua such as PT Freeport, BP, Genting Oil, Bintui Utama Murni Wood, Hastra Pacific Papua and Biak Veneer Jaya which are large companies in the fields of oil, mining and timber exploration (Januar, 2019). The problems faced by Papua in general related to nursing education are the lack of educational facilities, low human resources and the unavailability of postgraduate nursing education institutions (Tukayo et al., 2021). Our findings about Papuan' ability to run master program in OHN (Diagram 3) needs to be proven.

One of the requirements to establish a postgraduate education program (S2) is to have a program at the undergraduate level (Kemenristekdikti, 2019). The requirement is not owned by the province of Papua. At present, Bachelor of Nursing and Professional Education programs at Cenderawasih University and Poltekkes Kemenkes Jayapura for state universities and colleges and Stikes Papua, Stikes Jayapura, and Stikes St. Aloysius Papua for private universities are available in Papua (Tukayo et al., 2021). The educational facilities at undergraduate level play an important role in the continuation of the program at the postgraduate level. Especially if at the undergraduate level, an overview of OHN is taught integrally in the Community Health Nursing course (Hardy, 2012). With the undergraduate level, it will help facilitate the teaching learning process. However, it does not mean that the OHN postgraduate program cannot be held. The University of Indonesia, Gajahmada University and Diponegoro University have been running the Master's Degree program in Occupational Health, but do not provide any Bachelor's Degree in Occupational Health (Tukayo et al., 2021). Thus, it can be concluded that the OHN master program can be implemented, regardless of the existing rules. Especially if it is supported by the presence of Autonomy status for Papua, where the Regional Government has the authority to determine policies in the interests of the region (Muttaqin, 2014). The Papuan people in general benefit greatly from this program, because they do not have to study abroad, which is more expensive. In addition, it can attract people from outside Papua to go and study in Papua. From an economic point of view, this could boost the level of welfare of the Papuan people, which is currently classified as one of the poorest provinces in Indonesia (BPS, 2020).

In terms of human resources, the quality of human development index of Papua was 57.25 (Sofilda, 2020). It is the lowest among 34 provinces in Indonesia. Papua is the youngest province compared to other provinces. Geographically, Papua has more difficulties to develop its infrastructures. Public facilities such as Information Technology (IT) (Sitokdana, 2019) and health care facilities are relatively still poor (Sandila et al., 2020). Those three things affect the level of welfare of the Papuan people which in turn will affect their ability to take education to a higher level. The existence of infrastructure, public facilities, technology and other means of communication plays a major role in the economic growth of a region (Gaal & Afrah, 2017). Previous research proved that education affected the quality of human resources and people's welfare (Tarasova, 2008). Overcoming that problem is not easy, but it does not mean without any solution. The absence of teaching staff can be done through early preparation by sending potential lecturers to campus (domestic or overseas) to get short course

on OHN or continue their education at the doctoral level. They could be conducted while the program is running by inviting occupational health experts to give lectures in Papua. A similar policy was once carried out in the early days when there was no undergraduate nursing education program in Indonesia in the early 80's, which at that time had very few teaching staff (Efendi et al., 2018). Through careful and well-organized teaching planning, the problem of human resources for the teaching staff in the OHN postgraduate program will be resolved, at least within the range of 10 years. Otherwise, it will be difficult for Papua to get an equal distribution of quality education and will still be predicated as a lagging province.

From the above description, the respondents' skepticism as illustrated (Diagram 3), towards the implementation of the OHN Master's Program in Papua is understandable. Their number 5% is not worthy. What is interesting is that the majority of respondents came from the West part of Indonesia (63.0%), while those from East Indonesia was only 15,8% (Table 1). This indicates that, in one hand, the development of education in Papua is a national concern, but in the other hand it opens challenges for better future. Therefore, more intensive research is needed to explore how the plan goes into practice of the OHN postgraduate program is.

As per the association of behavioral theory in this study, to be able to influence and change a person's behavior, it is necessary to understand how a behavior is formed or occurs (Guerin & Sleet, 2020). We have identified the strengths and weaknesses of Papuans and other available resources prior to conducting the master of OHN program. The factors that influence the realization of the master of OHN program in Papua have been discussed. That behavior is formed or master of OHN education can come to exist because of the intention. The theory suggests that the intention is influenced by the attitude towards the behavior (Guerin & Sleet, 2020). However, the final result of the plan will be depending upon the subjective norms and perceived behavioral control.

CONCLUSION

The objective of this study was to explore the nurses' perception on Papuan's ability if they are able to manage a master's program in Occupational Health Nursing (OHN). This study tried to explore the capability of Papua province and their sources in organizing the OHN postgraduate program. It indicated that the perception of the majority of respondents were optimistic that Papua was capable of running it. Apart from the great potential of Papua which physically has large world-class industries, the province of Papua faces major challenges, especially in terms of developing human resources and infrastructure. However, the weakness of this study was it was not supported by wider involvement of the Papuan community, more nurses, academics, policy makers and other related professionals in the field i.e. post-graduate education development experts. Therefore, in the future, an extensive and more focused research is highly appreciated to acquire an idea of the concrete steps in implementing the program.

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