

## **Identifying Community/Public Health Nursing Competencies in Indonesia: A Modified Delphi Method**

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### **ABSTRACT**

**Background:** Nurses in public health centers, or known as public health nurses (PHNs), have duties in implementing promotive, preventive, curative, and rehabilitative efforts. In Indonesia, there is no basic reference to the competencies that should be performed by PHNs. The provision of health services in the community should cover two areas, namely inside and outside the building (Minister of Health's Regulation No. 279 Year 2006); it causes nurses in the community to further hone their skills while in the field.

**Purpose:** This study aimed to identify the competencies of the Indonesian PHNs from experts using the C/PHN competencies of the Quad Council Coalition through a Delphi method.

**Methods:** This study was quantitative research with a Delphi method. We employed a purposive sampling technique to recruit the experts of public health nurses. The experts did a Delphi method to identify, analyze, and modify the C/PHN Competencies of the Quad Council Coalition into the Indonesian version of C/PHN Competencies with local cultures.

**Results:** Results showed that from eight domains of the Quad Council Coalition C/PHN competencies, there were changes for priority of the PHN competencies in Indonesia. All priorities were classified into eight groups, namely: (1) Leadership Skills and Thinking Systems; (2) Community Dimensions of Practice; (3) Assessment Analytic; (4) Policy Development and Program Planning; (5) Communication Skills; (6) Financial Planning and Management and Planning; (7) Public Health Sciences Skills; and (8) Cultural Competency.

**Conclusion:** The Quad Council Coalition of C/PHN competencies are appropriate with the Indonesian PHN competencies, although the priority is changed related to local wisdom as stated in the Minister of Health's Regulation No. 279 Year 2006. Therefore, the Indonesian P/HN competencies should be developed to support the Indonesian health people through family approach.

**Keywords:** Community nurse; C/PHN; Delphi method; nurse competencies; public health

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## **BACKGROUND**

Public health nurses (PHNs) are nurses who work with two main types of services, namely inside and outside the building (Swider, Krothe, Reyes, & Cravetz, 2013). The data and information centre of the Indonesian Ministry of Health in 2017 showed that the number of PHNs was less than that of nurses working in hospitals, with a percentage of 29.46% (Ministry of Health Republic of Indonesia, 2018). This number is not equal with the amount of nurses' work in the community. Competencies are one aspect that should be owned by nurses faithfully in the community. With a small number of PHNs but a lot of work to do, it is likely that there are potential problems in achieving the programs in the community, one of which is *Perkesmas* (public health nursing [PHN] services). A study showed that the achievement of a public health program that was still not optimal was due to the inadequacy of the scope of the program with the completion of the social security program, which was strongly influenced by nurses' competencies in the community (Susanto, Bachtiar, & Turwantoko, 2019).

The Ministry of Health of Republic Indonesia made a regulation on PHNs' duties for PHN services to achieve healthy programs in public health centres (Ministry of Health Republic of Indonesia, 2006). Previous studies indicated a relationship between PHNs' knowledge and attitudes and the performance of the PHN services (Septiyani, 2012) that resulted in low coverage of the implementation of PHN services (Susanto et al., 2019). Furthermore, PHN in Indonesia has only focused on indicators of program achievements without looking at the extent to which the process of PHN activities in the field is related to the role of PHNs based on the indicators of inputs, processes, and outputs of PHN activities (Susanto et al., 2019). This situation needs a solution for developing of PHNs' competencies for PHN services to achieve healthy programs in public health centres (Ministry of Health Republic of Indonesia, 2006).

The absence of a national reference competencies of PHNs and the lack of strict rules related to the development of PHN careers is a problem that should be solved. C/PHN Competencies of the Quad Council Coalition mentions the competencies needed by PHNs to analyse health problems in the community to conduct an evaluation. Expected competencies include skills in analysing public health assessments, planning public health programs, communication, understanding community culture, working with communities and stakeholders, as well as skills in using public health sciences, financial management, leadership, and systematic thinking (Quad Council Coalition of Public Health Nursing Organization, 2018).

## **PURPOSE**

This study aimed to identify the competencies of the Indonesian PHNs based on the C/PHN competencies of the Quad Council Coalition through a Delphi method.

## **METHODS**

### **Design and samples**

This research was a quantitative study with a Delphi method. We employed a purposive sampling technique to recruit the PHN experts. In this study, the experts did a Delphi method to identify, analyze, and modify the C/PHN Competencies of Quad Council Coalition into the Indonesian version of C/PHN Competencies with local cultures. The experts were people with expertise of public health nursing and hold a master degree in nursing. The experts were also active in *Tridharma Perguruan Tinggi* (threefold missions of higher education) consisting of (1) education in nursing, (2) research which is to carry out new discoveries in nursing science, and (3) community service which is to carry out the service to the community in maintaining the process of improving the welfare and health. Eight experts from three universities in two districts (Bondowoso and Jember) were involved in this study. In these universities, there are nursing study programs that actively carry out programs of public health nursing.

### **Research instrument and data collection**

The C/PHN of the Quad Council Coalition is a measuring tool that was analyzed by each expert. This measurement tool is used to measure the level of competence of public health nursing and was developed by the Quad Council Coalition. There are 8 domains and 44 items which cover the competencies of public health nursing. Until now, Indonesia does not yet have a measurement tool used to measure the level of competence of public health nursing. The only reference used to guide public health nursing in public health centers in Indonesia is the Minister of Health's Regulation No. 279 Year 2006 about *Perkesmas*. However, this regulation does not explain in details about the competencies that public health nurses should have; it only describes two parts of the PHNs' activities: inside and outside the building.

### **Data analysis**

The research consisted of three rounds (Figure 1). In the first round, each expert was given the C/PHN Competencies of the Quad Council Coalition and the Minister of Health's Regulation No. 279 Year 2006 about *Perkesmas* to be examined and analyzed. The experts were requested to evaluate the competencies using Likert scales of 1 to 4 for each competency item in the C/PHN Competencies: 1=not relevant, 2=quite relevant, 3=relevant, and 4=very relevant.

In the second round, the experts were invited to gather to do FGDs (focus group discussion) in one place. In this round, the experts were asked their respective opinions for each competency item in the C/PHN Competencies. The experts were asked for their opinions on each item whether it is in accordance with local cultures in Bondowoso and Jember. Then each expert made a rating for each item as in the first round.

In the third round, all experts were given the results of the study in the first round and the second round. They were also confirmed for approval for each item whether it could be used to test the draft of public health nursing competencies. In this final stage, the experts were requested to sign the agreement for the approved competencies.

**Ethical consideration**

The ethical approval of this study was obtained from the Research Ethics Committee of the Faculty of Dentistry, Universitas Jember. All participants were informed of the study’s purposes and procedures and signed informed consent for their participation.

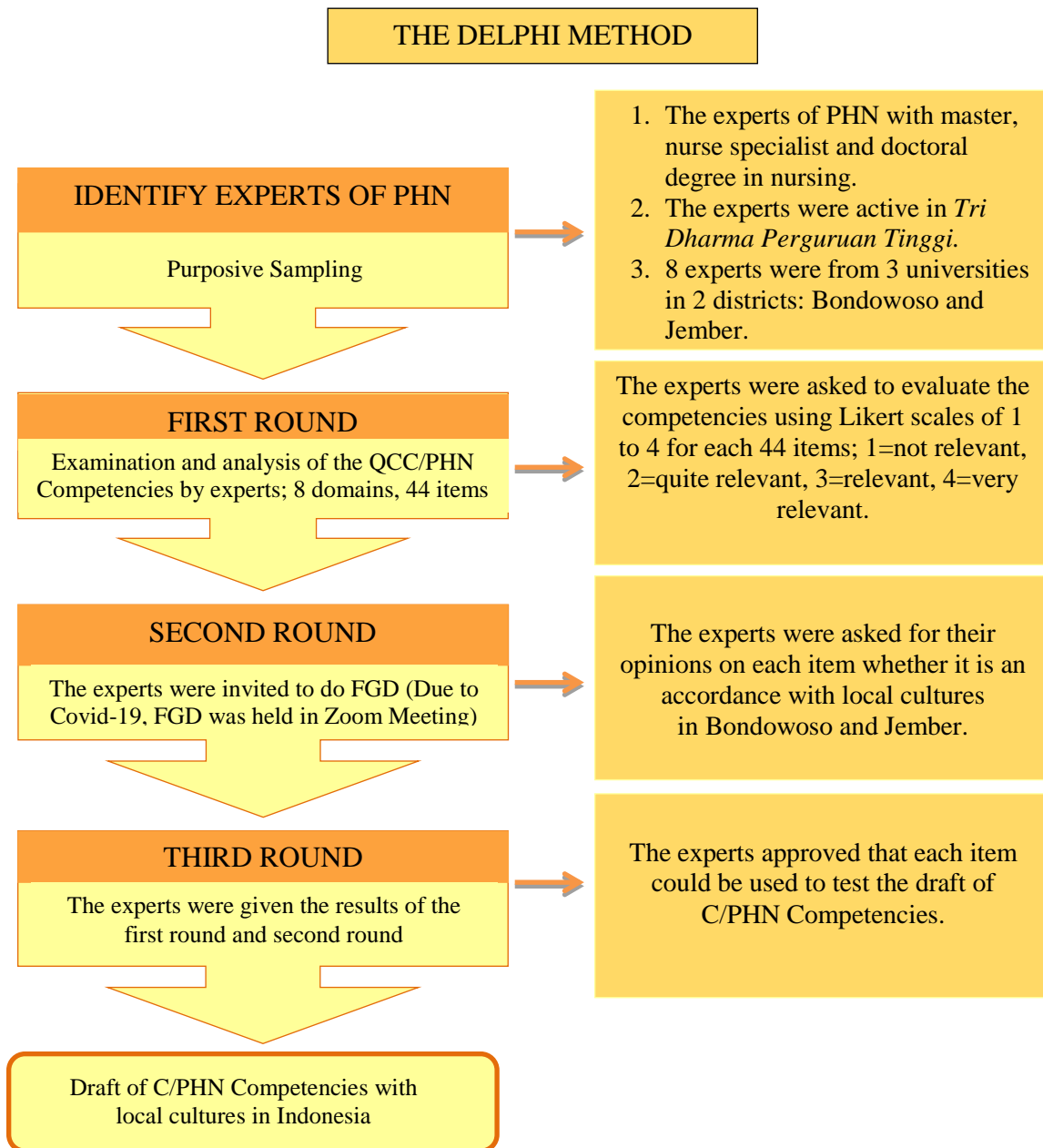


Figure 1. Diagram of the Delphi method

**RESULTS**

Eight experts of public health nursing selected based on the inclusion criteria of the study participated in the study. These participants came from three universities in the area of Bondowoso and Jember, Indonesia. The characteristics of eight experts of PHN are presented in Table 1.

Table 1. Characteristic of experts of PHN in this study (n=8)

Characteristics	f	%
Age		
20s	1	12.50
30s	3	37.50
40s	4	50.00
Gender		
Male	2	25.00
Female	6	75.00
Education		
Master degree	5	62.50
Nurse specialist	2	25.00
Doctoral degree	1	12.50
Experience of training		
Yes	4	50.00
No	4	50.00

Table 1 shows that most community nursing experts in this study were aged in the span of the 40s (50%) and females (75%). Most experts hold master degree education (62.5%). A half of the experts (50%) already attended *Perkesmas* training. Although not all experts had participated in *Perkesmas* training, they are experts in the field of the public health nursing, education, profession, and research.

In round I, the experts as participants were asked to analyze and examine the 44 items in QCC which are divided into eight domains by using Likert scales and compared it with the existing legislation (the Minister of Health's Regulation No. 279 Year 2006 about *Perkesmas*). Then, the result was analyzed based on the mean value of each item.

In round II, eight nursing experts gathered in a place to give the assessment results that had been done before. In this discussion, group forum of experts was requested to assess the items and determine whether words or sentences in the items should be changed according to local wisdom. Once the data were collected, each expert determined to carry out a validity test for each item (Waltz, Strickland & Lenz, 2010). The validity and the reliability test of this instrument was conducted on eight public health nursing experts in February 2020. Table 2 shows the results of round I and II of the study.

Table 2. Competency items by highest rating

Domain	Rank	C/PHN	Delphi Results	Mean ± SD
I. Analytic Skills	1 <sup>st</sup>	1A8	Implement ethical, legal, and policy guidelines, and principles for maintaining, using, and disseminating data and information	3.75 ± 0.46
	2 <sup>nd</sup>	1A5	To interpret valid and appropriate data	3.63 ± 0.52
	3 <sup>rd</sup>	1A11	Using practice results from various fields of science	3.13 ± 0.35
	4 <sup>th</sup>	1A7	Contributing to public health assessments using subjective and objective data	2.88 ± 1.13

Table 2. (Continued)

Domain	Rank	C/PHN	Delphi Results	Mean $\pm$ SD
I. Analytic Skills	5 <sup>th</sup>	1A1	Assess health status using multiple data sources	2.75 $\pm$ 1.04
	6 <sup>th</sup>	1A2a	Using ecological and epidemiological perspectives	2.75 $\pm$ 1.04
II. Policy Development and Program Planning Skills	1 <sup>st</sup>	2A7	Organizational plan development	3.88 $\pm$ 0.35
	2 <sup>nd</sup>	2A9	Using program planning skills and CBPR (Community Based Participatory Research (i.e., collaboration, reflection, capacity building)) to implement strategies to engage marginalized/ disadvantaged population groups in making decision that affect their health and well-being	3.13 $\pm$ 0.35
	3 <sup>rd</sup>	2A2	Explaining the implications of the potential impact of public health policy programs	3.00 $\pm$ 0.93
	4 <sup>th</sup>	2A5	Using decision-making methods	3.00 $\pm$ 0.93
	5 <sup>th</sup>	2A6b	Planning a consistent public health care service	3.00 $\pm$ 0.93
	6 <sup>th</sup>	2A8	Adherent to organizational procedures and policies	2.75 $\pm$ 1.04
III. Communication Skills	1 <sup>st</sup>	3A6	Using communication model in communication	3.75 $\pm$ 0.46
	2 <sup>nd</sup>	3A4	Using various methods in spreading general health information	3.00 $\pm$ 0.93
	3 <sup>rd</sup>	3A2b	Use input from individuals, families and groups	2.88 $\pm$ 1.13
	4 <sup>th</sup>	3A5a & b	Presenting health information	2.88 $\pm$ 1.13
	5 <sup>th</sup>	3A2a	Applying critical thinking and cultural conscious	2.75 $\pm$ 1.04
	6 <sup>th</sup>	3A1	Determining health, awareness, and health-conscious	2.63 $\pm$ 0.92
IV. Competency Skills	1 <sup>st</sup>	4A5	Using cultural models based on research results in a working environment	3.00 $\pm$ 0.93
	2 <sup>nd</sup>	4A3	To provide a responsive public health care service using cultural aspects	2.88 $\pm$ 1.13
	3 <sup>rd</sup>	4A1	Determining effective health in cooperation	2.63 $\pm$ 0.92
V. Community Dimensions of Practice Skills	1 <sup>st</sup>	5A3a	Choosing the stakeholders needed to address public health issues	3.75 $\pm$ 0.46
	2 <sup>nd</sup>	5A6	Use input from multiple sources	3.75 $\pm$ 0.46
	3 <sup>rd</sup>	5A5	Using Community assets and resources	3.13 $\pm$ 0.35
	4 <sup>th</sup>	5A8	Identifying evidence of the effectiveness of community engagement strategies	3.00 $\pm$ 0.93
	5 <sup>th</sup>	5A2	Developing formal and informal networks	2.88 $\pm$ 1.13

Table 2. (Continued)

Domain	Rank	C/PHN	Delphi Results	Mean $\pm$ SD
VI. Public Health Sciences Skills	1 <sup>st</sup>	6A5	Using various sources and methods to access public health information	3.88 $\pm$ 0.35
	2 <sup>nd</sup>	6A1	Using health determinants and research-based practices	2.75 $\pm$ 1.04
	3 <sup>rd</sup>	6A6a	Utilizing research results to inform public health nursing practices	2.75 $\pm$ 1.04
	4 <sup>th</sup>	6A7	Complying with all aspects of client confidentiality and protection	2.75 $\pm$ 1.04
	5 <sup>th</sup>	6A2b	Assess hazards and reduce risk of exposure and injuries in natural and artificial environments	2.63 $\pm$ 1.06
	6 <sup>th</sup>	6A3	Using research-based practices in the program (12 indicators of PIS PK)	2.63 $\pm$ 0.92
VII. Financial Planning and Management and Planning Skills	1 <sup>st</sup>	7A6	Explain the priority implications of organizational financing	3.13 $\pm$ 0.35
	2 <sup>nd</sup>	7A7	Explaining public health care services and programmatic needs to inform budget priorities	3.13 $\pm$ 0.35
	3 <sup>rd</sup>	7A11	Using information systems and public health communication	3.13 $\pm$ 0.35
	4 <sup>th</sup>	7A2	Explaining the role of public health nurses in emergency preparedness and disaster response	2.88 $\pm$ 1.13
	5 <sup>th</sup>	7A5	To interpret the impact of financing limitations in service delivery	2.63 $\pm$ 0.92
	6 <sup>th</sup>	7A8a	Identifying data to evaluate services	2.63 $\pm$ 0.92
VIII. Leadership Skills and Thinking Systems	1 <sup>st</sup>	8A2	Implementing a thinking system	3.88 $\pm$ 0.35
	2 <sup>nd</sup>	8A6	Committed to lifelong learning, professional development, and advocacy	3.88 $\pm$ 0.35
	3 <sup>rd</sup>	8A8	Facilitating the development of working groups	3.75 $\pm$ 0.46
	4 <sup>th</sup>	8A1	Demonstrate the ethical standards of practice in all aspects	3.00 $\pm$ 0.93
	5 <sup>th</sup>	8A3	Participating in stakeholder meetings	2.75 $\pm$ 1.04
	6 <sup>th</sup>	8A4a	Identifying internal and external factors	2.63 $\pm$ 0.92

In round III, the experts approved the feasibility of instrument with 44 items by signing a letter. Additionally, the researchers also get the results of domain rankings from Delphi results by experts and presented these results in Table 3.

As shown in Table 3, the highest rated domain is Domain VIII: Leadership Skills and Thinking Systems, while the lowest one is Domain IV: Cultural Competency Skills.

Table 3. Domains by highest rating

Rank	Domains	Mean $\pm$ SD
1 <sup>st</sup>	VIII. Leadership Skills and Thinking Systems	3.32 $\pm$ 0.59
2 <sup>nd</sup>	V. Community Dimensions of Practice Skills	3.30 $\pm$ 0.42
3 <sup>rd</sup>	I. Assessment Analytic Skills	3.15 $\pm$ 0.44
4 <sup>th</sup>	II. Policy Development and Program Planning Skills	3.13 $\pm$ 0.39
5 <sup>th</sup>	III. Communication Skills	2.98 $\pm$ 0.40
6 <sup>th</sup>	VII. Financial Planning and Management and Planning Skills	2.92 $\pm$ 0.25
7 <sup>th</sup>	VI. Public Health Sciences Skills	2.90 $\pm$ 0.48
8 <sup>th</sup>	IV. Cultural Competency Skills	2.84 $\pm$ 0.19

## DISCUSSION

In this study, we identified the competencies of Indonesian of PHN from experts using the C/PHN Competencies of the Quad Council Coalition through a Delphi method. From eight domains of the Quad Council Coalition C/PHN Competencies, there were changes for priority of PHN competencies in Indonesia. All priorities were classified into eight groups, namely: (1) Leadership Skills and Thinking Systems; (2) Community Dimensions of Practice Skills; (3) Assessment Analytic Skills (4) Policy Development and Program Planning Skills; (5) Communication Skills; (6) Financial Planning and Management and Planning Skills; (7) Public Health Sciences Skills; and (8) Cultural Competency Skills.

In this study, Domain VIII (Leadership Skills and Thinking Systems) in C/PHN Competencies of the Quad Council Coalition became the top rank after the Delphi and was followed by Domain V (Community Dimensions of Practice Skills). This is influenced by the implications in Indonesia. In fact, there is no basic reference to the competencies of public health nurses, it is distinguished by location of activities that are in the building and outside the building (Minister of Health's Regulation No. 279 Year 2006). It causes the nurses in the community to further hone their skills while in the field (Ministry of Health Republic Indonesia, 2006). According to the authors' observations, Domain VIII became first domain in the Indonesian version of C/PHN Competencies, according to experts, because the critical thinking ability of a nurse in primary health care is very important. Public health nurses are required to have good leadership skills because they are responsible for the success of the promotive and prevention program of a health problem in an area. In addition to being responsible for leading the community in efforts to improve health status, public health nurses must also have the ability to develop good interactions with cross-sectors. Therefore, this is related to the domain that is ranked second in the Indonesian version of C/PHN Competencies, i.e., Community Dimensions of Practice Skills. In Domain V, public health nurses have the ability to manage good relations between stakeholders, business owners, community leaders, religious leaders, and the community themselves in handling all health problems in an area.

Being third rank in the study was Domain I (Assessment Analytic Skills) of the C/PHN Competencies of the Quad Council Coalition, followed by the fourth rank was Domain II (Policy Development and Program Planning Skills). In Indonesia, there are no rules



governing the competency of nurses in the community (Reckinger, Cross, Block, Josten, & Savik, 2013). The rules in Indonesia used by nurses in the community as a reference work contain only job description and targets for the achievement of the program (Ministry of Law and Human Rights Republic Indonesia, 2014). The rule of law used is Minister of Health's Regulation No. 279 Year 2006 (Ministry of Health Republic Indonesia, 2006) and the Minister of Health's Decree No. 908 Year 2010 (Ministry of Health Republic Indonesia, 2010). The third rank in the Indonesian version of C/PHN competencies according to experts was Domain I (Assessment Analytic Skills). Public health nursing experts agree that public health nurses must have good analytical skills. Community nurses must be able to analyse health problems obtained from a variety of data sources, including ecological perspectives, epidemiological data, and health risk findings from cross sectors in both qualitative and quantitative data. The experts agreed that Domain II (Policy Development and Program Planning Skills) was ranked fourth in the Indonesian version of the C/PHN Competencies domain because public health nurses have a very important role in introducing government programs in the health sector, even from the planning stage to ensuring compliance with policy, ethical code, and law.

The fifth place in this study was Domain III (Communication Skills) and as the sixth rank was Domain VII (Financial Planning and Management Skills and Planning). There are no laws or regulations governing the competency of nurses in the field of communication and finance that are destined for nursing personnel in primary service order. Some experts argue that good communication skills and financial management skills are both programs acquired by the community nurse in the work. It can be concluded that this ability can be improved from work experience; the longer the community nurse experience works, the better the ability of communication and financial management in the community will be. Different from the management and planning skills, although specifically nurses have a branch of nursing management (Cross et al., 2006; Hewitt, Roye, & Gebbie, 2014; Polivka & Chaudry, 2015), but the theory is more appropriate to use by nurses in clinical settings, not in the community. In the public order, in relation to primary service, nurse should carry out the rules and policies that are contained in the Minister of Health's Regulation No. 279 Year 2006 about *Perkesmas* (Ministry of Health Republic Indonesia, 2006) and the Minister of Health's Decree 908 Year 2010 about family care (Ministry of Health Republic Indonesia, 2010).

Domain VI (Public Health Sciences Skills) in the C/PHN Competencies of the Quad Council Coalition was ranked seventh in this study. The last rank was Domain IV (Competency Skills with Cultural Aspects). Some experts in the study agreed that the competencies that the nurses have in the community are heavily influenced by the nurses' work experiences. Longer working experience will make nurses increase their expertise in doing their job in the field. In addition, regional cultures also greatly affect the working style as well as the results of working nurses in the community (American Public Health Association, 2013). Clearly, there is no rule to set points on culture in the implementation of the program by the nurses in the community (Ministry of Law and Human Rights Republic Indonesia, 2014).

The implication of this study is the development of the Indonesian version of the PHN competencies. There are no rules governing nurses' competencies in the community. The rules used by community nurses as a reference work contain only job description and targets for the achievement of the program (Kalb et al., 2006; Carter, Kaiser, O'Hare, & Callister, 2006). The nurses in the community are to further hone their skills while in the field. There are no laws or regulations governing the nurses' competencies in the field of communication and finance that are destined for nursing personnel in primary service order. Community nurses' ability can develop from work experiences. The longer the experience, the better the ability of communication and financial management in the community will be. The nurses' competencies in the community are significantly influenced by the nurses' work experiences.

### **CONCLUSION**

The Quad Council Coalition of C/PHN Competencies are appropriate with Indonesian P/HN competencies, although the priority is changed that is related of local wisdom of *Perkesmas* as stated in Minister of Health's Regulation No. 279 Year 2006. Therefore, the Indonesian P/HN competencies should be developed to support the Indonesian Health People through family approach.

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### **CONFLICT OF INTEREST**

The authors declare no conflict of interest.

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