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# Reaching Consensus on Global Health Competencies for Undergraduate Nurses in Indonesia: A Delphi Study

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## Abstract

**BACKGROUND:** Trends in the era of globalization show an increasing need for nurses to have the global health competencies (GHCs) to address global health problems, particularly in the pandemic COVID-19. However, evidence-based information about the relevance and feasibility of these competencies for undergraduate nursing students in Indonesia is very limited.

**AIM:** This study aims to achieve consensus among experts on GHC for Indonesian undergraduate nursing students.

**METHODS:** Using the two-rounds Delphi method in a sequential mixed-method design, 35 nursing experts voluntarily participated in the study. Six experts participated in the first round, and 29 others were in the second round, hence the collection of quantitative and qualitative data. The Item Content Validation Index (I-CVI) = 0.78 and Scale CVI (S-CVI) = 0.9 were used to determine the level of agreement among the experts.

**RESULTS:** At the end of round 2, experts agreed to the nine domains and 36 competencies. Five competencies were excluded in the first round and three others in the second round. The most frequent comment from experts was that these competencies were lacking in clarity, suitability, and irrelevant to undergraduate nurses' competencies.

**CONCLUSION:** This study has resulted in an agreement among experts regarding GHC for undergraduate nursing students in Indonesia. It is predicted that the findings of this study can contribute to the development of GHC in the nursing profession. Having these competencies will enable nurses to participate in overcoming global health problems. Validation of the new GHC by larger groups of nursing educators and graduate users is required.

## Introduction

Trends in the era of globalization indicate an increasing need for nurses to have global health competence (GHC) to address global health problems [1], [2], [3], [4], [5], [6], [7]. The greater world mobility has increased interdependence and collaboration between countries so that the focus of health services is no longer on the local or national context but on the global context [6], [8]. The impact of globalization on world health occurred in several pandemic situations, such as SARS in 2003 and Ebola in 2014 [3], [9]. In 2020, the world was shocked by the spread of disease caused by the SARS-CoV-2 virus, also known as COVID-19. COVID-19 has spread to several parts of the world including America, Southeast Asia, the Eastern Mediterranean, Africa, and the Pacific [10]. Changes in all aspects of life affected by the pandemic have doubled the need for GHC for nursing graduates.

According to the Global Advisory Panel on Future of Nursing, Global health focuses on enhancing health, and equity in health by maintaining health promotion, and sociocultural, political, and economic sustainability for all people. Global health covers planetary health, which equals human, animal, environmental, and ecosystem through practice, study, and research [2]. Furthermore, the notion of competency for nurses issued by the International Council of Nurses in 2005 is a combination of knowledge, skills, attitudes, and personal character shown by nurses in carrying out their work [11]. Hence, to achieve global health, nurses need GHC. GHC enables nurses to address global health problems resulting from injuries; health implications of pandemics, displacement, wars, disasters, travel; nutritional issues, mental health problems; and ethical issues, equity, and social justice in global health [3], [8], [12].

A recent study conducted in America showed that nine domains of the GHC are important for nurses [2], [12], [13]. These competencies include: (1) Global disease burden, (2) health implications of pandemics, displacement, war, disasters, and travel, (3) social and environmental determinants of planetary health, (4) global health care and care, (5) cultural,

humanistic competencies, and holistic care, (6) collaboration and partnership, (7) communication, (8) leadership, management, and advocacy, and (9) ethical issues, equity, and social justice in global health [2], [3]. Having GHC, nurses can carry out their functions more effectively, independently, and confidently [9].

In Indonesia's context, stakeholders have made several efforts to improve the competence of graduates of the nurse's education program in Indonesia, mainly by implementing a curriculum based on the Indonesian National Qualifications Framework in 2016 [14]. This curriculum aims to provide guidelines for preparing institutional nursing curricula to produce competent nurse graduates. However, the current Indonesian nursing curriculum has limited Global health content. As a result, Indonesian nurse students are not ready for facing global health problems after they graduate.

For this reason, the authors believe that nursing education institutions would need to review the existing curriculum to determine the competencies that are still and are no longer appropriate and include new competencies that are currently needed. Reasonably, there are still limited studies related to the use of GHC in health undergraduate education in Indonesia. Therefore, it is necessary to have an experts consensus that is relevant and feasible for the undergraduate nursing curriculum in Indonesia. This study aims to obtain content validation and reach a consensus on GHC for Indonesian undergraduate nursing students using the two-round Delphi method. The findings from this study are expected to be evidence-based information to determine the GHC needed by undergraduate nursing students, especially in Indonesia.

## Methods

This study used a two-rounds Delphi method in a sequential mixed method design adapted from the main study conducted by Torres-Alzate [3]. Quantitative and qualitative data were collected. However, due to space limitations, the qualitative findings will be reported separately. The design of the study is shown in Figure 1.

A non-probability voluntary convenience sampling procedure was used. There were two groups of experts in the Delphi process. In round 1, eight prospective participants were invited by email and *WhatsApp,* yet only six participants responded to the invitation. The objective of this round was to seek content validation of the translated original GHC. In round 2, 29 out of 40 invited participants agreed to participate. In this round, the study had a goal to achieve consensus on the agreed GHC in round 1 in a larger group of experts. Inclusion criteria used were the participants to have a doctorate level in nursing
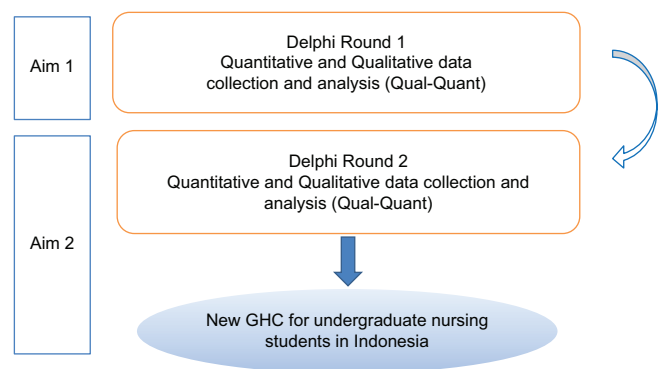


*Figure 1: The process of Delphi method in sequential mixed method design*

and a minimum of 10 years of experience in teaching student nurses. These inclusion criteria applied for rounds 1 and 2. In addition, they were requested to independently identify themselves whether or not they were experts in the global health context, guided by the 5 statements describing their understanding of global health and activities in global health-related research or education. Participants were considered experts if they answered at least three "yes" of the five questions [3].

### Instrument and procedures

The instrument used in this study was adapted from the original list of the GHC [3]. After receiving permission from the journal publisher, they were translated into Bahasa Indonesia by the authors. We did not conduct a two-way translation process. Yet, the experts examined the wording clarity of the list. The instrument was a Likert-type scale (1 = strongly disagree; 2 = disagree; 3 = agree; and 4 = strongly agree). The experts were asked for their opinion on whether the competencies adequately represent the characteristics of the expected undergraduate nursing graduates, whether the domains and competencies were understandable, as well as whether the domains and competencies can be used in the context of Indonesian nursing graduates. The reliability test of the GHC survey list was done in English and Spanish versions [12]. The average Cronbach's $\alpha$ coefficient for the six domain English version was 0.85 and 0.91 for the Spanish version.

Similarly, the Cronbach $\alpha$ coefficient of 0.92 for the total questionnaire was also found in a Brazilian study [13]. Numerical data were analyzed using the Content Validation Index (CVI) for both items (I-CVI) and scale (S-CVI). I-CVI was computed as the number of experts rating 3 or 4, divided by the number of experts. In addition, the scale (S-CVI) was obtained by averaging the I-CVI [15], [16], [17]. This study used a minimum index of 0.78 for I-CVI and 0.90 for S-CVI [18]. Qualitative data were analyzed using content analysis procedures [19].

Delphi method round 1 was completed in 6 weeks, from early May to mid–June 2021. In round

1, the instrument was emailed to the six experts. They were requested to return the completed instrument 2 weeks after receiving it. In this round, the experts reviewed and provided input regarding the relevance, clarity, and feasibility of the original GHC competencies and domains. Quantitative and qualitative data were analyzed. Results were integrated and sent back to the experts for the second time to inform the collective results from the experts. Feedback from the experts was accepted within the next week. Round 2 was completed in 4 weeks, from mid-June to mid-July 2021. The new list of GHC produced from the first round was used as the instrument in round 2. The process of data collection and analysis was similar to round 1.

Ethical Approval letter KEPK.01/05/133/2021 was obtained from the Institutional Review Board of the Health Polytechnic of the Ministry of Health Manado. Confidentiality of participant information was maintained. All information regarding the participants was kept confidential. In addition, the experts were not known to each other. The study description and consent information were given in the initial email contact with experts.

## Results

The profile of research participants in this study is aligned with other studies involving higher education faculty. The participants were predominantly women [3], [13]. This result is consistent with the characteristics of the nursing profession [13]. Similar to a study conducted in Brazil [13], most participants in this study were between 35 and 55 years of age, while participants in Torres-Alzate's study were predominantly 56 years of age or older [3] Interestingly, an average of 75% of experts in this study has worked for teaching undergraduate nursing students for more than 20 years, while about 30%–50% were found in the previous study [3], [13]. Reasonably, most nursing faculties in Indonesia start teaching undergraduate students just after holding a Master's degree and some others mainly had a Bachelor's degree, because continuing education for the doctoral degree in nursing in Indonesia was done later than in developed countries countries [20]. Furthermore, promoting research, education, and/ or global health practice were reported by more than 90% of participants. These results are in line with a similar study conducted by Torres-Alzate [3], in which approximately 90% of participants have expertise in global health research, education, and practice. Studies related to the application of GHC in Africa did not detail the participants' demographic characteristics of the participants [5]. Demographic profiles of the study participants are shown in Table 1.

**Table 1: Demographic characteristics of the experts in the rounds 1 and 2**

| Characteristics | Frequency (%) | |
|---|---|---|
| | Expert round 1 ($n = 6$) | Expert round 2 ($n = 29$) |
| Sex | | |
| Female | 5 (83.33) | 20 (68.96) |
| Male | 1 (16.66) | 9 (31.04) |
| Age range | | |
| 35–45 | 0 (0.00) | 11 (37.93) |
| 46–55 | 4 (66.66) | 13 (44.82) |
| 56–65 | 0 (0.00) | 5 (17.25) |
| Older than 65 | 2 (33.33) | 0 (0) |
| Years of experience in nursing education | | |
| 10–14 | 0 (0.00) | 4 (13.79) |
| 15–19 | 1 (16.66) | 5 (17.25) |
| 20–24 | 2 (33.34) | 12 (41.37) |
| >25 | 3 (50) | 8 (27.59) |
| Promotion of global health research, education, and/or practice | | |
| Yes | 6 (100) | 26 (89.65) |
| No | 0 (0) | 3 (10.35) |
| Total | 6 (100) | 29 (100) |

Furthermore, results from a review of the GHC in round 1 indicated that five competencies had I-CVI <0.78 and were considered irrelevant to undergraduate nurses' competencies. The deletion was done to the five competencies. As a result, all experts achieved a consensus of nine domains and 39 competencies in round 1. The five competencies were from the Social and Environmental Determinants of World Health domain (1 competency), the Global Care and Health Care domain (2 competencies), the Culturally Competent, Humanistic and Holistic Care domain (1 competency), and the Leadership, Management, and Advocacy domain (1 competency). In round 2, quantitative and qualitative data analysis results showed that three competencies did not achieve consensus. They were from the Global Nursing and Health Care Detailed results from each round and decisions made by the experts are shown in Table 2.

In addition, scale content validation was carried out by calculating the average of the I-CVI. To obtain the S-CVI of the new GHC, the average of each domain was first calculated to get the S-CVI of the domains. The results from each domain were then summed and divided by the number of domains in the scale to obtain the overall S-CVI. Table 3 shows the S-CVI for each domain and the S-CVI for the final GHC is greater than the standard S-CVI of 0.90. Domain 5 (Culturally competent, humanistic, and holistic care) had the highest score (97.9). Importantly, the reliability test for the nine domains in the new GHC showed that Cronbach's alpha coefficient is 0.93. These results indicated that the new GHC has excellent content validity and consistency. Details of the S-CVI of the nine domains are as follows.

## Discussion

This study supported nine domains of GHC synthesized in Torres-Alzate's study. However, out of 44 competencies, only 36 competencies were agreed upon by the expert panel in round 2 (Table 4). The

**Table 2: Content validation index of the Global Health Competencies and experts' consensus in the rounds 1 and 2**

| Domains and competencies | I-CVI (R1) | I-CVI (R2) | Mean | Experts' consensus |
|---|---|---|---|---|
| **1. Global burden of disease** | | | | |
| a. Describe the major causes of morbidity, disability, and mortality around the world and how the risk of disease varies with regions | 100 | 88 | 94 | Included |
| b. Describe major public health efforts to reduce disparities in global health (such as SDGs and Global fund to fight AIDS, TB, and malaria) | 92 | 94 | 93 | Included |
| **2. Health implications of pandemics, displacement, wars, disasters, and travel** | | | | |
| a. Explain the health risks for populations as a result of international travel | 92 | 88 | 90 | Included |
| b. Analyze the effects of displacement and migration on individual and population health | 92 | 89 | 90.5 | Included |
| c. Describe basic principles of nursing roles in disasters including helping communities to prepare for and respond to disaster | 100 | 95 | 97.5 | Included |
| **3. Social and environmental determinants of planetary health** | | | | |
| a. Explain how social and economic conditions such as poverty, race, education, and lifestyles affect access to health care | 100 | 92 | 96 | Included |
| b. List major socioeconomic and cultural determinants of health and their impact on differences in life expectancy between and within countries | 75 | - | - | Excluded in round 1 |
| c. Describe the impact of environmental factors such as clean water, sanitation, food, and air quality on individual and population health | 92 | 95 | 93.5 | Included |
| d. Describe the relationship between environmental degradation and human health | 92 | 92 | 92 | Included |
| **4. Global nursing and health care** | | | | |
| a. Analyze how global trends in healthcare practice, commerce, multinational agreements, and multinational organizations contribute to the quality and availability of health and health care locally and globally | 83 | 79 | 81 | Excluded in round 3 |
| b. Describe different national models or health systems for the provision of health care and their respective effects on health outcomes, and healthcare expenditure | 92 | 88 | 90 | Included |
| c. Analyze general trends and influences in the global availability and movement of healthcare workers | 83 | 81 | 82 | Excluded in round 3 |
| d. Describe differences and similarities in national and global healthcare worker availability and shortages | 67 | | | Excluded in round 1 |
| e. Describe the patterns and impact of healthcare worker migration on health care in the country that the healthcare worker leaves and the country to which they migrate | 75 | 81 | 78 | Excluded in round 3 |
| f. Identify the economic, social, political, professional, workplace, and academic conditions that can produce a strong healthy workforce | 70 | | | Excluded in round 1 |
| g. Identify barriers to health care access locally and globally | 83 | 94 | 88.5 | Included |
| h. Carry out interventions and integrated strategies that have been demonstrated to be sustainable and to substantially improve individual and/or community health (e.g., immunizations, essential drugs, and maternal child health programs) | 100 | 95 | 97.5 | Included |
| i. Display integrity, regard, and respect for others in all aspects of global nursing practice | 100 | 93 | 96.5 | Included |
| j. Adapt clinical or discipline-specific skills and practice in varied settings | 100 | 96 | 98 | Included |
| k. Discuss roles and contributions of nurses to health care in different global regions | 83 | 87 | 85 | Included |
| **5. Culturally competent, humanistic, and holistic care** | | | | |
| a. Provide culturally competent, humanistic, and holistic care and support for clients from diverse population groups | 100 | 94 | 97 | Included |
| b. Explain how cultural context influences perceptions of health and disease | 100 | 96 | 98 | Included |
| c. Elicit individual health concerns in a culturally sensitive manner | 100 | 96 | 98 | Included |
| d. Act respectfully according to what is appropriate in the culture and the situation | 100 | 97 | 98.5 | Included |
| e. Discuss the concept of cultural humility | 67 | | | Excluded in round 1 |
| **6. Collaboration and partnerships** | | | | |
| a. Describe roles of key members of healthcare teams | 100 | 94 | 97 | Included |
| b. Demonstrate collaboration and leadership skills including negotiation, communication, team-building, and conflict management | 100 | 93 | 96.5 | Included |
| c. Apply relationship-building practices to perform effectively as a member of an interprofessional team | 100 | 97 | 98.5 | Included |
| d. Exhibit interprofessional values and communication skills that demonstrate respect for and awareness of the unique cultures, values, roles/responsibilities, and expertise represented by other professionals and groups that work in global health | 100 | 96 | 98 | Included |
| e. Recognize one's skills, knowledge, attitudes, and abilities, both strengths and areas for growth | 83 | 97 | 90 | Included |
| f. Engage self and others to constructively manage disagreements about values, roles, goals, and actions using respectful language appropriate for a given difficult situation, crucial conversation, or interprofessional conflict | 83 | 95 | 89 | Included |
| **7. Communication** | | | | |
| a. Communicate effectively when confronted with language barriers using translators when necessary | 100 | 93 | 96.5 | Included |
| b. With input from the community, participate in designing practical and culturally relevant health information for a variety of settings | 83 | 92 | 87.5 | Included |
| c. Communicate with team members to clarify one's role and responsibility and each member's role and responsibility on the team | 100 | 94 | 97 | Included |
| d. Choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function, avoiding discipline or culturally specific terminology when appropriate | 83 | 94 | 88.5 | Included |
| **8. Leadership, management, and advocacy** | | | | |
| a. Apply concepts of community engagement, development, policy, and advocacy to promote planetary health | 100 | 86 | 93 | Included |
| b. Advocate for improving the health of vulnerable populations | 100 | 94 | 97 | Included |
| c. Participate in the development, implementation, and evaluation of strategies to address major health problems in varied settings, incorporating locally determined priorities and assessing their efficacy and cost-effectiveness | 83 | 93 | 88 | Included |
| d. Discuss priority setting, healthcare rationing, and healthcare funding for health and health-related research | 67 | | | Excluded in round 1 |
| **9. Ethical issues, equity, and social justice in global health** | | | | |
| a. Examine the relationship between health, human rights, and global inequities | 100 | 86 | 93 | Included |
| b. Describe the role of organizations and governing bodies that address human rights in health care and health research | 100 | 85 | 92.5 | Included |
| c. Describe the role and challenges of the WHO in linking health and human rights, the Universal Declaration of Human Rights, International Ethical Guidelines for Biomedical Research Involving Human Subjects (2002), Declaration of Helsinki (2008) | 100 | 81 | 90.5 | Included |
| d. Apply social justice and human rights principles in addressing global health problems | 100 | 91 | 95.5 | Included |
| e. Demonstrate a commitment to social justice and social responsibility | 100 | 92 | 96 | Included |

WHO: World Health Organization, I-CVI: Item content validation index, TB: Tuberculosis.

main reasons for rejecting the competencies were due to the lack of relevance, clarity, and feasibility. Several qualitative studies also did not support the inclusion of several competencies, because they were irrelevant for undergraduate level competencies and burdensome for the undergraduate nursing curriculum [3], [12], [13]. There were fewer positive comments on the domain of health implications of pandemics, displacement, war, disasters, and travel. This domain may be irrelevant to the Indonesian context, because this domain is too broad and covers war situations. A more positive comment was found on the global disease burden domain. The pandemic has increased the global disease burden, which is a more important competency for nursing graduates [21], [22]. Interestingly, the culturally competent, humanistic, and holistic care domain got the most positive results. Nurse educators from Africa said that all GHC was important for a nurse, especially

**Table 3: Scale Content Validation Index for the agreed Global Health Competencies for Indonesian Undergraduate Nursing Education**

| Domains and competencies | S-CVI |
|---|---|
| 1. Global burden of disease | 93.5 |
| 2. Health implications of pandemics, displacement, wars, disasters, and travel | 92.6 |
| 3. Social and environmental determinants of planetary health | 93.8 |
| 4. Global nursing and health care | 92.6 |
| 5. Culturally competent, humanistic, and holistic care | 97.9 |
| 6. Collaboration and partnerships | 94.8 |
| 7. Communication | 92.4 |
| 8. Leadership, management, and advocacy | 92.7 |
| 9. Ethical Issues, equity, and social justice in global health | 93.5 |
| Mean S-CVI | 93.7 |

S-CVI: Scale Content Validation Index.

in social and environmental determinants of health, but the domain of globalization of health and health care was considered inferior [23]. On the other hand, studies from developed countries, such as America, showed that health care and human rights were the most important domains. On the contrary, social and environmental determinants were not considered important [12], [13]. Thus, it is argued that the nine domains and 36 competencies were the most important competencies for nurses in Indonesia. This is in line with studies conducted among educators who believed that nursing needs to adapt to global health in response to the impact of globalization on health [24], [21], [25].

Strengthening the nursing curriculum to support professional practice locally and globally needs to be done in line with the development of science and technology, and social and environmental needs [3], [13], [26]. A review of the undergraduate nursing curriculum indicated that the Indonesian undergraduate nursing curriculum has several competencies required in the GHC [14]. However, several competencies included in the curriculum only require students to learn about health care in the national context. More importantly, several competencies have not been covered such as the health risks for populations due to international travel and the effects of displacement and migration on individual and population health. These competencies are gradually becoming more important in the pandemic COVID-19 situation [10]. The spreading of disease across continents due to international travel has long been predicted. However, undergraduate nursing institutions in Indonesia do not include GHC in their curriculum. Similarly, studies in Korea [27], [28] showed that teaching or activities that support the achievement of GHC for undergraduate nursing students are still very limited, because learning so far has focused more on specific nursing topics. This study is in line with the previous studies which showed that many nurses do not have the required global competencies [4], [10], nurses are less prepared when facing health problems, such as COVID-19, which occur in their designated area.

To have GHC, the WHO (2021) requires educational institutions to focus on improving patient quality and safety, preventing and controlling infectious

**Table 4: The agreed list of Global Health Competencies for the Indonesian Undergraduate Nursing Students**

Domains and competencies

1. Global burden of disease
   a. Describe the major causes of morbidity, disability, and mortality around the world and how the risk of disease varies with region
   b. Describe major public health efforts to reduce disparities in global health (such as SDGs and Global fund to fight AIDS, TB, and malaria)
2. Health implications of pandemics, displacement, wars, disasters, and travel
   a. Explain the health risks for populations as a result of international travel
   b. Analyze the effects of displacement and migration on individual and population health
   c. Describe basic principles of nursing roles in disasters including helping communities to prepare for and respond to disaster
3. Social and environmental determinants of planetary health
   a. Explain how social and economic conditions such as poverty, race, education, and lifestyles affect access to health care
   b. Describe the impact of environmental factors such as clean water, sanitation, food, and air quality on individual and population health
   c. Describe the relationship between environmental degradation and human health
4. Global nursing and health care
   a. Describe different national models or health systems for the provision of health care and their respective effects on health outcomes, and healthcare expenditure
   b. Identify barriers to health care access locally and globally
   c. Carry out interventions and integrated strategies that have been demonstrated to be sustainable and to substantially improve individual and/or community health (e.g., immunizations, essential drugs, and maternal child health programs)
   d. Display integrity, regard, and respect for others in all aspects of global nursing practice
   e. Adapt clinical or discipline-specific skills and practice in varied settings
   f. Discuss roles and contributions of nurses to health care in different global regions
5. Culturally competent, humanistic, and holistic care
   a. Provide culturally competent, humanistic, and holistic care and support for clients from diverse population groups
   b. Explain how cultural context influences perceptions of health and disease
   c. Elicit individual health concerns in a culturally sensitive manner
   d. Act respectfully according to what is appropriate in the culture and the situation
6. Collaboration and partnerships
   a. Describe roles of key members of healthcare teams
   b. Demonstrate collaboration and leadership skills including negotiation, communication, team-building, and conflict management
   c. Apply relationship-building practices to perform effectively as a member of an interprofessional team
   d. Exhibit interprofessional values and communication skills that demonstrate respect for and awareness of the unique cultures, values, roles/responsibilities, and expertise represented by other professionals and groups that work in global health
   e. Recognize one's skills, knowledge, attitudes, and abilities, both strengths and areas for growth
   f. Engage self and others to constructively manage disagreements about values, roles, goals, and actions using respectful language appropriate for a given difficult situation, crucial conversation, or interprofessional conflict
7. Communication
   a. Communicate effectively when confronted with language barriers using translators when necessary
   b. With input from the community, participate in designing practical and culturally relevant health information for a variety of settings
   c. Communicate with team members to clarify one's role and responsibility and each member's role and responsibility on the team
   d. Choose effective communication tools and techniques, including information systems and communication technologies, to facilitate discussions and interactions that enhance team function, avoiding discipline or culturally specific terminology when appropriate
8. Leadership, management, and advocacy
   a. Apply concepts of community engagement, development, policy, and advocacy to promote planetary health
   b. Advocate for improving the health of vulnerable populations
   c. Participate in the development, implementation, and evaluation of strategies to address major health problems in varied settings, incorporating locally determined priorities and assessing their efficacy and cost-effectiveness
9. Ethical issues, equity, and social justice in global health
   a. Examine the relationship between health, human rights, and global inequities
   b. Describe the role of organizations and governing bodies that address human rights in health care and health research
   c. Describe the role and challenges of the WHO in linking health and human rights, the Universal Declaration of Human Rights, International Ethical Guidelines for Biomedical Research Involving Human Subjects (2002), Declaration of Helsinki (2008)
   d. Apply social justice and human rights principles in addressing global health problems
   e. Demonstrate a commitment to social justice and social responsibility

WHO: World Health Organization, TB: Tuberculosis.

diseases, and fighting antimicrobial resistance. Hence, nursing students need knowledge and skills about health promotion, health literacy, and management of non-communicable diseases [7]. It emphasized the importance of the role of nurses in handling the pandemic, so nurses will be ready to face future

pandemics [7]. Therefore, it is suggested to include more global health-related subjects, so students, when they graduate, would possess broader knowledge and skills in the context of global health [28]. However, Morin [7] said that nurse faculty needs to avoid adding content to an overloaded curriculum. Instead, the author suggested a reconceptualization of the taught content and critical competencies in the curriculum for the entry-level students (equal to the first 4 years program of undergraduate nursing education in Indonesia). Experts' concerns about the need to identify the different levels of competency for diverse nursing programs in Indonesia and strategies to teach global health were similar to the previous studies [13], [29]. Educational institutions need to prioritize the most effective, teachable, and measurable competencies [5]. Hence, to provide room for the inclusion of other relevant competencies, some learning contents need to be removed. For example, care for mothers, infants, and children may be offered at the postgraduate level, because more specialized [7]. To solve problems related to the application of GHC in the undergraduate nursing curriculum, collaboration among the national and international stakeholders is urgently needed.

There are some limitations to this study. Although the list of competencies has been reviewed by researchers and experts who are fluent in Indonesian and English, there is still the possibility that the translation of this GHC might be apprehended differently by other nursing educators. In addition, the number of participants in round 1 was only six experts. However, it is argued that there is no agreement on the ideal number in the Delphi study [3]. To enhance the reliability of the findings, it is recommended to seek consensus from a more significant sample of nursing experts and other stakeholders.

## Conclusion

Findings from this study have contributed to the development of GHC in the nursing profession, especially in Indonesia. The two-rounds Delphi method has achieved agreement for nine domains and 36 GHC. A review of the current Indonesian nursing curriculum revealed limited inclusion of GHC within the courses. The health competencies in the curriculum emphasize more local and national rather than global contexts. Therefore, four recommendations resulting from this study are as follows. First, the Association of Indonesian Nurse Education Centre (AINEC) should revise the current nursing curriculum to include courses about global health issues that cultivate GHCs in nursing students. Accordingly, improving nurse educators' knowledge and attitudes toward GHC are also required. In addition, educational institutions may

facilitate more global health promotion and research activities for educators and students. Second, AINEC should work collaboratively with the Indonesian Nursing Association to enhance nurses' interest in solving global health problems and awareness of the importance of GHC. Third, future researches need to focus on validating the new GHC list. Finally, exploring the perception of nurse managers and students is also crucial. To overcome the existing gap in the current nursing curriculum, attention and collaboration between nursing education leaderships and other stakeholders are urgently needed.

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