Effects of a global health nursing program on Vietnamese and South Korean students

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ABSTRACT

This study evaluated the improvement of global health nursing knowledge and attitude of participants in a program developed using a students’ needs assessment of global health nursing competency obtained in a previous study. The program comprised a lecture, group work, and field activities based on six global health nursing competence modules over a one-week period. There were 59 participants, 31 from South Korea and 28 from Vietnam. A pre-post survey was undertaken to measure knowledge change, and thematic content analysis was used to further understand attitude change. The overall score increased from 21.02 ± 3.36 before the program to 28.10 ± 6.56 after the program, showing a statistically significant difference ($p < .05$). The change in the perception of knowledge on the healthcare system was high (from 1.53 ± 0.63 to 3.37 ± 4.23; $p < .001$); however, a difference in the perception of knowledge of the functions of the United Nations and World Health Organization was not significant after the program for Vietnam students ($p < .293$). Ten sub-themes of thematic content were derived and regrouped into five themes, resulting in three domains: global health competence, global leadership competence, and cultural competence. The global health nursing program grew students’ knowledge and attitudes. Further studies on the long-term program effects are needed to generalize the global health nursing program.

Key Words: Global health nursing, Cultural competence, Leadership, Program effect

1. INTRODUCTION

The goal of an undergraduate nursing program is to improve nursing students’ competence in a manner appropriate to the global nursing environment as well as to their domestic nursing practice. Globally, sustainable Millennium Development Goals were agreed to and publicized on September 25, 2015, by the United Nations General Assembly, and should be accomplished by all countries in their national policy and education system to meet global standards.\textsuperscript{[1]} Globally, competency-based nursing undergraduate programs are required by all countries, including Vietnam and South Korea, as per the World Health Organization’s recommendations.\textsuperscript{[2]} However, evaluation of the programs is required regarding their development and application to global health.

Global standards for the initial education of professional nurses by the WHO noted a need for a sound understanding of the determinants of health.\textsuperscript{[2]} This implies a number of concepts to program developers regarding socio-environmental differences of healthcare in various countries. Cultural competence and leadership ability were among the program’s graduate attributes.\textsuperscript{[3]}

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The definition of cultural competency is “the capacity to provide effective healthcare taking into consideration people’s cultural beliefs, behaviors, and needs.”[3] The reason for the emphasis is that we live in a multicultural society. The achievement of a nursing educational program in the American Association of Colleges of Nursing white paper was the suggestion of using elements of cultural competency within the nursing curriculum for preparedness to care for patients from different cultural backgrounds.[4] Other research findings also proved the effect of cultural competency of students by the provision of varied social justice and human rights experiences in their curriculum.[3] Studies on the measurement of a nursing program, understanding of culture, or cultural competency were part of the program outcomes.[5–7]

Leadership is also “defined as influence, that is, the art or process of influencing people so that they will strive willingly and enthusiastically toward the achievement of group goals.”[8] The International Council of Nurses evaluated the understanding of global healthcare challenges as one global nursing leadership outcome and recommended the global standards of initial education by the WHO.[9] Many studies on nursing program evaluation are focused on the general program; few previous studies were found on global health or global health nursing.[10–12] Studies on global health competencies for nurses in the Americas were undertaken by Wilson and colleagues, and Ventura and colleagues; this encompassed nursing curriculum development to guarantee students’ competence in order to qualify as a global citizen, including educator capacity building.[13–15] Another recent study on inter-professional global health competencies was undertaken by Jogerst and colleagues, which classified global health competency into four levels: global citizen, exploratory, basic operational, and advanced.[16] These results demonstrate the importance of global health competencies in higher education and practice to pursue global competence, whether it is global professional leadership or otherwise.

Evaluation studies on the effect of global health programs for Asian students, particularly in South Korea and Vietnam, comprised studies by Kang and Piao; Hwang, Kim, Ahn, and Kang; and Lee.[10, 17, 18] However, Hwang and colleagues’ study applied a program developed by an expert panel, and Kang and Piao’s study was based on the International Council of Nurse’s disaster competencies.[10–17]

Therefore, this study evaluated the change in the students’ knowledge and attitudes on global health nursing after a short-term global health nursing program. This study will contribute to the understanding of the competency improvement of students using global health nursing programs in the relevant domain of competence.

### Table 1. The composition of the global health nursing program [unit hours ()]

| Domains                                | Lecture and discussion (20) | Group work and field trips (22) |
|----------------------------------------|-----------------------------|---------------------------------|
| I. Global burden of disease           | Health status in Vietnam (2) | Visit to Namdong village and health education for elementary students (6) |
|                                        | The UN, International NGOs, and WHO (2) |                                |
| II. Health implications of migration, travel, and displacement | Activities of NGO in Hanoi | Health fair (4) |
|                                        |                             | Health education for elderly people at a nursing home in Vietnam (6) |
| III. Social and environmental determinants of health | The role of Vietnamese nurses’ association (2) | Group work and presentation (4) |
|                                        | Health status of local community (4) | Visit to Hue-Halla nursing education center |
| IV. Globalization of health and healthcare | E-health in health and nursing care practice (2) | Visit to provincial hospital (1) |
|                                        | Healthcare delivery system in Vietnam and South Korea (4) | Visit to provincial hospital (1) |
| V. Healthcare in low-resource settings | Activities of NGO in Hanoi | Health fair |
|                                        |                             | Visit to low-resource healthcare setting |
| VI. Health as a human right and development resource | The UN, International NGOs and WHO (2) | Visit to Korea International Cooperation Agency, Hanoi |
|                                        | Global nursing leadership (2) |                                 |

### 2. Method

#### 2.1 Research design

The study purpose was to examine changes in global health nursing after students completed a 42-hour special field pro-
2.2 Development of a global health nursing program
Based on a previous needs assessment study on global health nursing competency, the priority educational needs level was considered for the students in both countries. There were 42 learning activities overall, comprising 20 lectures on global health nursing topics and 22 group activities with fieldwork. Some activities held in Hanoi were only provided to South Korean students; therefore, these were not included in the total program hours (see Table 1).

2.3 Setting and samples
Undergraduate students in nursing and health-related majors in Vietnam and South Korea were targeted for enrollment. First, the program was announced via the students’ bulletin boards, and those who were interested in the global health nursing program could apply. After an interview, 60 recruited individuals (30 students in each country) were selected. However, only 59 students responded: 51 nursing students and 8 students from health-related majors (emergency medical technicians, dentists, social welfare, and general practitioners). Using Cohen’s standard (d = 0.2, small; d = 0.5, medium; d = 0.8, large), an alpha of .05 was set as the significance level, d = .80 for the effect size, and 0.80 for the statistical power (1-β) to verify the sample size. A total of 42 participants, 21 in each group, were needed to meet the requirement; this total number was met.

2.4 Knowledge change questionnaire
A pre-post knowledge change tool developed by Kang and Piao, was modified to measure the students’ knowledge change. Students were asked to rate their knowledge level using a 4-point Likert scale, ranging from 1 (never know) to 4 (very well know). All participants completed the survey prior to the program and immediately after the one-week program was completed. This questionnaire comprised the knowledge level based on the program content.

2.5 Attitude change analysis
The attitude changes during and post-program were analyzed based on the students’ reflective diaries over five days. Students were asked to write what they thought and felt in the daily activity, and what would be their resolution for their nursing career in order to understand their positive and negative learning experiences. All sentences were categorized to draw a common concept using content analysis. Two researchers familiar with content analysis and one research assistant with a Masters in Nursing analyzed the 255-page reflective diaries. Key statements and concepts were underlined during several readings to identify the meaning units, and then similar meaning units were transformed into condensed meaning units. Two nursing experts outside the research team were consulted regarding the content analysis results and this was revised using their comments.

2.6 Ethical considerations
All participants provided informed consent, and their anonymity and confidentiality were guaranteed. Personal information, including name, department, and grade, was not required for this questionnaire.

Table 2. Participants’ demographic characteristics (N = 59)

| Characteristics                  | Categories             | n  | %   |
|----------------------------------|------------------------|----|-----|
| Gender                           | Female                 | 53 | 89.83 |
|                                  | Male                   | 6  | 10.17 |
| Nationality                      | Vietnamese             | 28 | 47.46 |
|                                  | South Korean           | 31 | 52.54 |
| Age                              | Under 18               | 1  | 1.69 |
|                                  | 19–20                  | 28 | 47.46 |
|                                  | 21–22                  | 26 | 44.07 |
|                                  | 23–24                  | 3  | 5.08 |
|                                  | Over 25                | 1  | 1.69 |
| Previous education in global health | No                    | 29 | 49.15 |
|                                  | Yes                    | 30 | 50.85 |
| Previous experience of travel to other country | No | 42 | 71.19 |
|                                  | Yes                    | 17 | 28.81 |
| Fluency in English               | Very poor              | 14 | 23.73 |
|                                  | Poor                   | 34 | 57.63 |
|                                  | Good                   | 9  | 15.25 |
|                                  | Very good              | 2  | 3.39 |
| Major                            | Nursing                | 51 | 86.44 |
|                                  | Emergency medical technician | 3 | 5.08 |
|                                  | Dentistry              | 1  | 1.69 |
|                                  | Social welfare         | 2  | 3.39 |
|                                  | General practitioner   | 2  | 3.39 |

2.7 Data collection and measurements
Data were collected before and after the program in December 2015. Descriptive statistics were used to analyze the demographic characteristics. Differences in global health nursing pre- and post-test were examined using paired t-tests. Independent t-tests were used to verify any changes after the program.

3. RESULTS
3.1 Participants’ demographic characteristics
A total of 59 students participated in the survey; most were women (89.83%), aged 19 to 22 years (91.3%), had no experience of travel to other country (71.19%), and were majoring in nursing (86.44%). Previous education on global health nursing was “none” (49.15%) and fluency in English was “below poor” (81.36%) (see Table 2).
3.2 Global health knowledge differences between Vietnam and South Korea before the program

Regarding previous knowledge on global health nursing—specifically, the function of the UN and WHO, information technology in health and nursing, community health promotion activities, global health, and nursing leadership—there were no differences between Vietnamese and South Korean students (see Table 3). Students of both countries showed significant differences regarding culture and the healthcare system, as expected. Vietnamese students had a higher perception compared to South Korean students regarding Vietnamese culture ($3.21 \pm 0.57$, $p < .001$) and the healthcare system ($2.43 \pm 0.57$, $p < .000$); the same result was found for South Korean students regarding South Korean culture ($3.00 \pm 0.86$, $p < .000$).

Table 3. Global health knowledge differences between Vietnamese and South Korean students before the program (N = 59)

| Categories                                                                 | Vietnam | South Korea | Independent t test |
|---------------------------------------------------------------------------|---------|-------------|--------------------|
|                                                                           | M       | SD          | M       | SD          | t       | p      |
| Function of the UN and WHO                                                | 2.29    | 0.60        | 2.39    | 0.56        | -0.672  | .504   |
| Healthcare systems in Vietnam                                             | 2.43    | 0.57        | 1.55    | 0.51        | 6.268   | .000   |
| Healthcare systems in South Korea                                         | 1.25    | 0.52        | 2.48    | 0.72        | -7.452  | .000   |
| Differences and similarities of the healthcare systems between Vietnam and South Korea | 1.39    | 0.57        | 1.65    | 0.66        | -1.566  | .123   |
| Information technology in health and nursing                              | 2.11    | 0.63        | 2.16    | 0.64        | -0.328  | .744   |
| School health promotion activities                                         | 2.18    | 0.48        | 2.16    | 0.64        | 0.117   | .903   |
| Community health promotion activities                                     | 2.04    | 0.69        | 2.13    | 0.56        | -0.570  | .571   |
| Global health and nursing leadership                                       | 1.71    | 0.60        | 2.06    | 0.57        | -2.292  | .026   |
| Understanding of South Korean culture                                     | 1.79    | 0.63        | 3.00    | 0.86        | -6.148  | .000   |
| Understanding of Vietnamese culture                                        | 3.21    | 0.57        | 2.00    | 0.52        | 8.601   | .000   |
| Sum score                                                                  | 20.39   | 2.82        | 21.58   | 3.73        | -1.368  | .177   |

Table 4. Effects of the program on knowledge changes (N = 59)

| Categories                                                                 | Pre     | Post    | Paired t test |
|---------------------------------------------------------------------------|---------|---------|---------------|
|                                                                           | M       | SD      | M       | SD      | t       | p      |
| Function of the UN and WHO                                                | 2.34    | 0.58    | 2.54    | 0.54    | -2.266  | .027   |
| Healthcare systems in Vietnam                                             | 1.97    | 0.69    | 2.73    | 0.52    | -7.577  | .000   |
| Healthcare systems in South Korea                                         | 1.90    | 0.88    | 3.14    | 3.99    | -2.436  | .018   |
| Differences and similarities of the healthcare systems between Vietnam and South Korea | 1.53    | 0.63    | 3.37    | 4.23    | -3.345  | .001   |
| Information technology in health and nursing                              | 2.14    | 0.63    | 2.59    | 0.59    | -4.685  | .000   |
| School health promotion activities                                         | 2.17    | 0.56    | 2.71    | 0.62    | -6.147  | .000   |
| Community health promotion activities                                     | 2.08    | 0.62    | 2.68    | 0.54    | -5.765  | .000   |
| Global health and nursing leadership                                       | 1.90    | 0.61    | 2.64    | 0.55    | -7.812  | .000   |
| Understanding of South Korean culture                                     | 2.42    | 0.97    | 2.76    | 0.65    | -3.440  | .001   |
| Understanding of Vietnamese culture                                        | 2.58    | 0.81    | 2.93    | 0.61    | -3.399  | .001   |
| Sum score                                                                  | 21.02   | 3.36    | 28.10   | 6.56    | -9.827  | .000   |

Table 5. Effects of the program on knowledge changes for Vietnamese students (N = 28)

| Categories                                                                 | Pre     | Post    | Paired t test |
|---------------------------------------------------------------------------|---------|---------|---------------|
|                                                                           | M       | SD      | M       | SD      | t       | p      |
| Function of the UN and WHO                                                | 2.29    | 0.60    | 2.43    | 0.50    | -1.072  | .293   |
| Healthcare systems in Vietnam                                             | 2.43    | 0.57    | 2.86    | 0.45    | -3.576  | .001   |
| Healthcare systems in South Korea                                         | 1.25    | 0.52    | 2.46    | 0.58    | -9.363  | .000   |
| Differences and similarities of the healthcare systems between Vietnam and South Korea | 1.39    | 0.57    | 2.71    | 0.46    | -9.053  | .000   |
| Information technology in health and nursing                              | 2.11    | 0.63    | 2.71    | 0.46    | -5.109  | .000   |
| School health promotion activities                                         | 2.18    | 0.48    | 2.71    | 0.60    | -4.091  | .000   |
| Community health promotion activities                                     | 2.04    | 0.69    | 2.75    | 0.59    | -4.215  | .000   |
| Global health and nursing leadership                                       | 1.71    | 0.60    | 2.64    | 0.56    | -6.412  | .000   |
| Understanding of South Korean culture                                     | 1.79    | 0.63    | 2.43    | 0.57    | -5.473  | .000   |
| Understanding of Vietnamese culture                                        | 3.21    | 0.57    | 3.18    | 0.39    | 0.328   | .745   |
| Sum score                                                                  | 20.39   | 2.82    | 26.89   | 3.31    | -10.267 | .000   |
± 0.86, \( p < .000 \)) and the healthcare system (2.48 ± 0.72, \( p < .000 \)) compared to Vietnamese students. However, the perception of global health nursing leadership was higher in South Korean students (2.06 ± 0.57, \( p < .026 \)).

### Table 6. Effects of the program on knowledge changes for South Korean students (\( N = 31 \))

| Categories                                                                 | Pre | Post | Paired t test |
|---------------------------------------------------------------------------|-----|------|---------------|
| Function of the UN and WHO                                               | 2.39| 2.65 | -2.108 .043   |
| Healthcare systems in Vietnam                                            | 1.55| 2.61 | -7.679 .000   |
| Healthcare systems in South Korea                                        | 2.48| 3.74 | -1.301 .203   |
| Differences and similarities of the healthcare systems between Vietnam and South Korea | 1.65| 3.97 | -2.226 .034   |
| Information technology in health and nursing                             | 2.16| 2.48 | -2.158 .039   |
| School health promotion activities                                       | 2.16| 2.71 | -4.522 .000   |
| Community health promotion activities                                    | 2.13| 2.61 | -4.981 .000   |
| Global health and nursing leadership                                     | 2.06| 2.65 | -4.811 .000   |
| Understanding of South Korean culture                                    | 3.00| 3.06 | -0.465 .645   |
| Understanding of Vietnamese culture                                      | 2.00| 2.71 | -4.793 .000   |
| Sum score                                                                 | 21.58| 29.19| -6.081 .000   |

#### 3.3 Effects of the program on knowledge changes

The overall score increased from 21.02 ± 3.36 before the program to 28.10 ± 6.56 after the program, showing a statistically significant difference (\( p < .05 \); see Table 4). In particular, there were higher perceptions of knowledge on the healthcare system (from 1.53 ± 0.63 to 3.37 ± 4.23; \( p < .001 \)) and global health nursing leadership (from 1.90 ± 0.61 to 2.64 ± 0.55; \( p < .000 \)).

The perception of knowledge regarding the function of the UN and WHO did not achieve a significant difference for Vietnamese students after the program (\( p < .293 \)). There was also no significant difference in the healthcare system (\( p < .203 \)) and culture (\( p < .645 \)) regarding South Korea for South Korean students, and regarding Vietnam (\( p < .293, p < .745 \)) for Vietnamese students (see Tables 5 and 6).

#### 3.4 Content analysis of retrospective journals

Ten sub-themes of thematic content were derived (see Table 7); these were regrouped into five themes, resulting in three domains: global health competence, global leadership competence, and cultural competence. Content analysis of the responses revealed the students’ positive learning experiences on global health nursing. Each statement was calculated to ascertain how many students responded. The students stated that the benefit from the global health nursing program was to gain knowledge about global health competency and it gave them challenges to study more for their major. The highest statement among the global health domain was the role of nursing leadership in today’s healthcare. Other benefits were having the opportunity for group work in the field activities and presentation, and that it encouraged them to understand cultural diversity and have an open mind. Some were challenged on global health issues and this gave them the vision to be a global leader in their professional field.

### 4. Discussion

This special program was designed after a students’ needs assessment on the global health nursing of three countries undertaken by Kang, Nguyen, and Xippolitos.[12] The program design was mostly based on the differences between the present perception level of competence and future required level of competence. The students who participated in this special program showed significant knowledge and attitude changes regarding global health nursing as well as cultural competency based on the survey and reflective journal analysis.

For most of the program’s participants, this was their first experience in a global health nursing program with fieldwork in a low-resource environment. While Western countries often have global health programs, few participants in this program had received such benefits previously. This result was similar to those of Kang, Hwang and colleagues, and Lee, Kim, and Lee in terms of insufficient program provision.[10, 11, 19] This demonstrates to nursing programs developers that they should understand the effect of field experience programs and include such experiences in their nursing curriculum or special activities.

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Table 7. Content analysis of students’ attitude changes described in their reflective journals (N = 59)

| Domains                | Themes                                                                 | Sub-themes                                      | Statements (Number of students)                                      |
|------------------------|------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------|
| Global Health          | Social and environmental determinants of health                        | Understanding of local needs and environment    | Chances and challenges of my country were clearly understood. (25)   |
|                        |                                                                        |                                                  | I got a deeper understanding of the health situation in my country  |
|                        |                                                                        |                                                  | in comparison to the other country. (35)                            |
|                        | Different health systems and global trends                             | Rediscovery of health and nursing field         | I expanded my knowledge regarding modern medical IT advances. (40)   |
|                        |                                                                        |                                                  | The role of nursing leadership in today’s healthcare is really     |
|                        |                                                                        |                                                  | important. (45)                                                    |
|                        |                                                                        |                                                  | I knew about the future direction of the nursing field in my      |
|                        |                                                                        |                                                  | country. (35)                                                      |
| Global Leadership      | Preparation for global leadership                                      | The role of the UN, WHO, and INGOs in linking    | There are still many places where human health is not really        |
|                        |                                                                        | health and human rights                          | cared about; this will be a problem in the near future. (25)       |
|                        |                                                                        |                                                  | It is better to help the poor have a chance to obtain their life   |
|                        |                                                                        |                                                  | themselves. (19)                                                   |
|                        |                                                                        |                                                  | I will study more about global efforts to attain health equality.  |
|                        |                                                                        |                                                  | (37)                                                              |
| Cultural Leadership    | Cultural perceptions                                                   | Awareness of cultural diversity                 | It is nice for me to meet Korean/Vietnam friends and get           |
|                        |                                                                        |                                                  | international contacts. (15)                                       |
|                        |                                                                        |                                                  | It was a good chance to know another country’s culture,           |
|                        |                                                                        |                                                  | language, and their way of life. (25)                             |
|                        |                                                                        | Open to and mindful of foreign people            | I improved myself and experienced a new culture as well as         |
|                        |                                                                        |                                                  | knowledge. (27)                                                    |
|                        |                                                                        | Importantly work with a different country        | This program gave me a good chance to understand another           |
|                        |                                                                        |                                                  | country’s culture and their disease pattern. (32)                 |
|                        |                                                                        |                                                  | My group was educated about some stretching exercises and it       |
|                        |                                                                        |                                                  | was very meaningful. (12)                                          |
|                        |                                                                        |                                                  | The experience of working together with others from another        |
|                        |                                                                        |                                                  | country made me feel excited. (15)                                |
|                        |                                                                        |                                                  | I learnt how to work in a group effectively. (17)                 |

Exposure to this kind of global health nursing program could contribute to students’ abilities to adapt to clinical practice in a resource-constrained setting after graduation. Most of the lecture topics and fieldwork drew students’ interest and encouraged their future career visions, similar to previous studies by Kang, and Hwang and colleagues. Some programs were provided in English; this acted as a motive to prepare language competency for being a global leader. The reason why critical thinking disposition was not used was that the experience of such participation over a one-week period would not be appropriate. Some activities, such as visitation to the Korea International Cooperation Agency, Hanoi, were only provided to South Korean students. If a program in a third country is planned, we can identify the pro-
program’s effect via an experimental study with more controlled variables.

Regarding the analysis of the students’ reflective journals, three domains—global health competency, global leadership competency, and cultural competency—were analyzed; however, Hwang and colleagues suggested three different domains: global health leadership, nursing care, and capacity development.\[11\] This difference can be explained in that this study’s program was based on a needs assessment of global health categories; meanwhile, Hwang’s program was developed by an expert group. Some sub-themes from the content analysis by Hwang and colleagues were grouped as global health competency in this study, but global leadership and cultural competency were similar in both studies.\[11\] The result of the improvement of cultural competency in this study was similar to several previous studies, and being open minded to different cultures was the most significant change in cultural competence.\[20, 21\]

The most significant result of this program was that students were encouraged to pursue their career and profession with the vision of being a leader, and this result was found in many previous studies.\[22\] One objective of the undergraduate nursing program was to help students fulfill their leadership roles in the nursing profession. However, the contemporary situation is different from past situations, so decision-makers and others involved in the nursing curriculum and program design should scrutinize the development of students’ global leadership in the nursing curriculum and other special activities. The best way is to provide a culturally diverse setting outside of their area of residence with a special educational purpose, as noted in previous studies.\[23, 24\] However, the financial burden of the program was a limitation in implementing such a global health nursing program, which was a similar result to Long.\[24\] The only difference was in the result of the reflective journal in which South Korean students wanted a longer program; this result is very similar to other study results.\[10, 11, 25\]

This study involved a special program on global health nursing, which primarily comprised lectures, group work, and field activities in a low-resource environment.

5. CONCLUSION AND RECOMMENDATION

This study attempted to ascertain the knowledge change of students’ global health nursing and their attitude after the development of a special program based on a students’ needs assessment, which was conducted in a previous study. Fifty-nine students participated in this global health nursing program comprising lectures and field activities.

The knowledge change was evaluated using pre-post-surveys and their reflective journals were analyzed to identify attitude changes. The knowledge change in global health issues was statistically significant. The attitude change was categorized in three domains: global health competence, global leadership competence, and cultural competence.

A global program for students is indispensable to increase their readiness to live as a global citizen, and must be considered from their entrance to their graduation in any undergraduate nursing program. Further studies on the long-term program effects are needed to generalize the global health nursing program’s before and after-effects in knowledge and attitude across the three domains.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest.

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