Implementation and Evaluation of an English-Language Basic Life Support Training Workshop for Japanese Nursing and Medical Students

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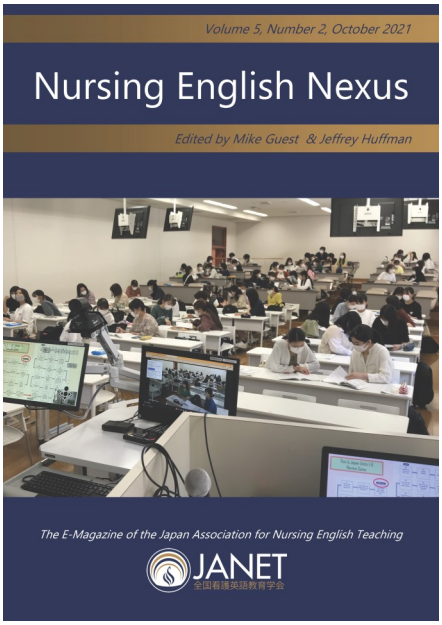

Article citation

Elfandi, S., Ghashut, R., & Bolstad, F. (2022). Implementation and Evaluation of an English-Language Basic Life Support Training Workshop for Japanese Nursing and Medical Students. *Nursing English Nexus, 6*(1), 7–13.

Nursing English Nexus

http://www.janetorg.com/nexus

ISSN 2433-2305

Implementation and Evaluation of an English-Language Basic Life Support Training Workshop for Japanese Nursing and Medical Students

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***Abstract**: Sudden cardiac arrest is a significant public health problem. Early defibrillation and high-quality cardiopulmonary resuscitation (CPR) are crucial for improving the survival rate after a cardiac arrest. Therefore, mastering high-quality CPR is an essential skill for nursing and medical students. In addition, allowing students to participate in training activities that develop critical thinking in the context of task-based learning helps improve students' language, decision-making, and communication skills. With an eye to integrating communication skills training with clinical skills training, this study explored the challenges and effects of an intensive first-aid workshop held in English with Japanese medical and nursing students. Twenty-four medical students and one nursing student attended this workshop. A pre- and post-workshop questionnaire was administered, the results of which showed that 76% of participants had previously participated in a first-aid workshop in Japanese. Before the workshop, 64% of participants reported that they would try to help an unconscious person and 80% that they would call an ambulance. These percentages increased to 88% and 96%, respectively, after the workshop. In addition, before the workshop, 16% felt confident in helping an unconscious person; this increased to 64% after the workshop. From these results, we conclude that teaching hands-on first-aid workshops in English with similar students in similar educational contexts is likely to improve their clinical knowledge and skills while at the same time enhancing their English communication skills.*

Keywords: Basic life support training, Japanese nursing students, Japanese medical students, CLIL, task-based language learning

Sudden cardiac arrest (SCA) is one of the largest causes of mortality and health care utilization in the world (Narayan et al., 2019). First aid is the immediate action taken to save a life and reduce the effects of injury and illness until medical help is obtained (Khan et al., 2010). Early defibrillation by bystanders using automated defibrillators (AEDs), along with the initiation of high-quality cardiopulmonary resuscitation (CPR), plays a crucial role in improving the survival rate after out-of-hospital cardiac arrest (OHCA) (Kitamura et al., 2010).

Authorities in Japan legalized the use of AEDs by bystanders in July 2004; since then, they have been widely disseminated in public spaces (Japan Heart Foundation, n.d.). The nationwide dissemination and availability of public-access AEDs has allowed early defibrillation by bystanders, leading to an increase in the survival rate after OHCA (Nakashima et al., 2019).

One of the main teaching strategies at Nara Medical University (NMU) is teaching English subjects using content and language integrated learning (CLIL), which is an educational approach where curricular content is taught through the medium of a foreign language. CLIL has been shown to bring about many benefits, one of which is a synergy between language and content, which is needed to prepare highly-qualified specialists (Gavrilova & Trostina, 2014). In contrast, some studies have pointed towards "beneficial effects of CLIL on various areas of language learning, i.e., it seems to have potential as a language learning environment" (Dalton-Puffer et al., 2010, p. 12). Accordingly, students often have more active communicative interactions than in regular classes. Maillat (2010, p. 49) found that CLIL could primarily benefit students through spoken interaction such as role-play activities.

Moreover, this approach promotes learning

content of interest to students and language skills concomitantly (Stapel, 2016). However, despite the increase in awareness of the importance of integration of CLIL programs in Japanese universities, the CLIL concept is still relatively new and spreading slowly in Japan (Pinner, 2013).

To the best of our knowledge, the impact of first-aid training in English on first-year medical and nursing students in Japan has not been studied. Therefore, the authors undertook a study to investigate the challenges and effects of an intensive first-aid workshop conducted in English for first-year medical and nursing students.

Method

Participants

The authors offered a one-day intensive first-aid workshop for first-year nursing and medical students at Nara Medical University. The workshop was an elective course, and it was made available for 30 students. Twenty-four 1st-year medical and one 1st-year nursing student joined the intensive workshop. Participants consisted of 13 males (52%), 11 females (44%), and one who preferred not to mention their gender (4%). Three (12%) students were 18, eight (32%) were 19, six (24%) were 20, seven (28%) were 21, and one (4%) was 36 years old. Students were informed that those who attended and actively participated in the workshop would have their final course grade increased by 10%. A brief explanatory leaflet describing the workshop content and learning outcomes was made available to all students.

Basic life support training workshop

We divided the students into six groups of three or four, and each group was given a half-body CPR training mannequin and an AED simulator. One infant and one child CPR training mannequin were also used in this workshop. COVID-19 prevention measures were strictly followed, including wearing face masks at all times, maintaining physical distance, using alcohol hand-sanitizing gel, and avoiding performing rescue breathing during CPR.

The main theme was about how to deal with an unconscious person. The workshop consisted of three sessions of 90 minutes each. In the first session, we started by giving a lecture explaining how to assess an unconscious person and the general concepts of cardiopulmonary resuscitation (CPR), and this was followed by hands-on supervised practice assessing an unconscious person, dealing with an unconscious breathing person, and dealing with an unconscious non-breathing person.

In the second session, we explained the basic concepts of an automated external defibrillator (AED), and this was followed by hands-on practice using the AED. We used three different scenarios: 1) the student is alone with an unconscious person with no available AED machine, 2) the student is alone with an unconscious person with an available AED machine, and 3) there is a nearby bystander and an available AED machine.

In the third session, we started by giving a 15-minute mini-lecture, about dealing with an unconscious child or infant; dealing with a choking person; and dealing with burns, chemical injuries, and wounds. After that, students were supervised while attending to the mock unconscious child or infant.

The questionnaire

The students were asked to fill out online pre-workshop and post-workshop questionnaires. The pre-workshop questionnaire elicited the students' basic life support and first aid knowledge. Both pre- and post-workshop questionnaire items included what the ambulance phone number in Japan is, whether students would help an unconscious person and call an ambulance, whether they know what an AED is, and how confident they felt in helping an unconscious person. The post-workshop questionnaire also included a single open-ended item asking for

students' impressions of the workshop. The questionnaires were made available online through a QR code so that they could be completed on the students' smartphones. Content analysis was used to categorize and thematically analyze their comments.

Ethical considerations

We obtained informed consent from the students participating in the study and explained the purpose of the study. We maintained the anonymity and confidentiality of the questionnaire responses throughout the study. Students had the option to withdraw from answering the questions at any time.

Results

Nineteen students (76%) had attended basic life support training before this workshop and it had been offered in Japanese, whereas it was the first time for six students (24%); no one had taken such a workshop in English. The response rate for the pre- and post-workshop questionnaire was 100%, and for the feedback question was 64%.

Pre-workshop questionnaire

Prior to the workshop, all 25 students knew the ambulance phone number (119) in Japan. Sixteen students (64%) reported that they would try to help an unconscious person on the street, while nine (36%) were not sure. In addition, 20 students (80%) would call an ambulance for help, whereas five (20%) were not sure. All 25 students recognized what an AED is. Of those, 13 (52%) knew how to use it, 10 (40%) were not sure, and two (8%) stated that they did not know how to use it.

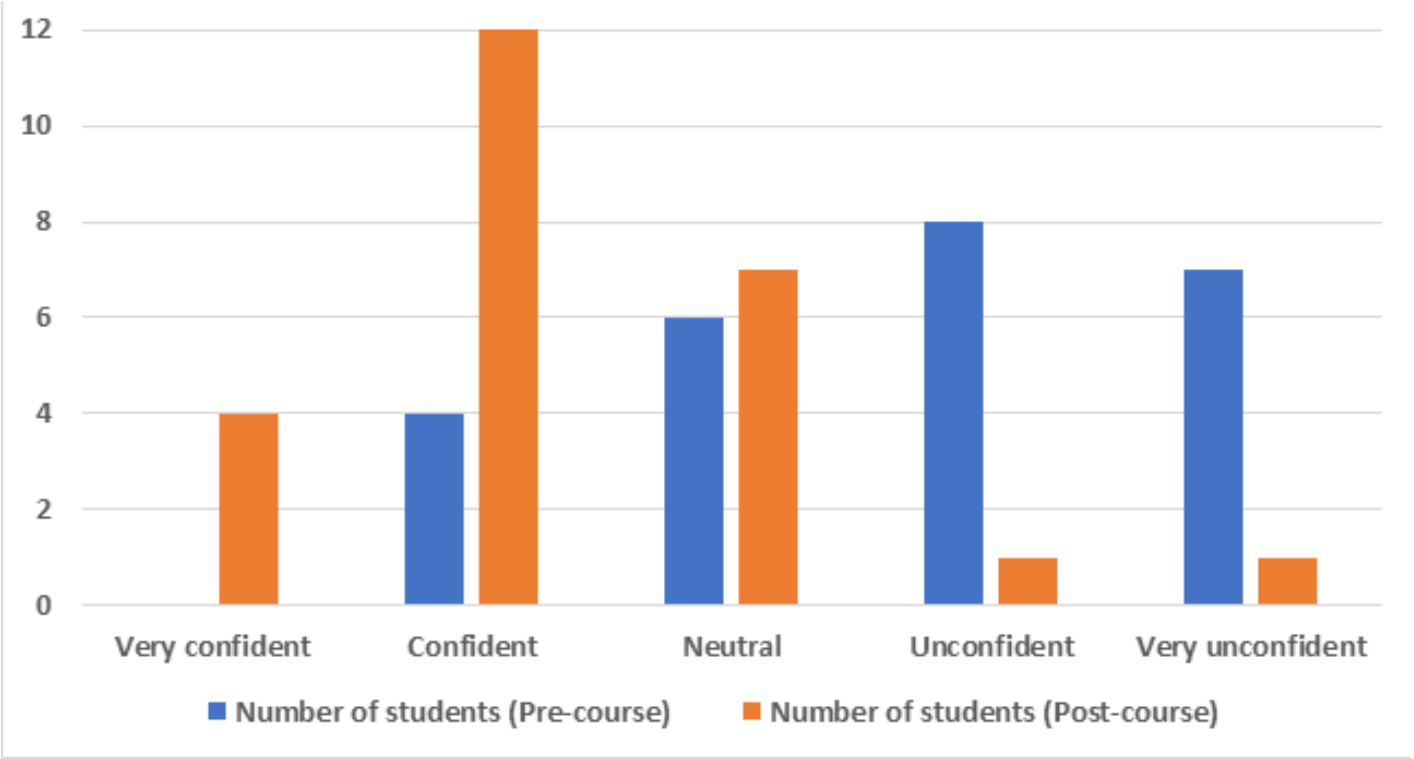
Using a Likert-type scale from 1 (very confident) to 5 (very unconfident), seven students (28%) described themselves as feeling very unconfident, eight (32%) felt unconfident, six (24%) were neutral, four stated that they were confident (16%), and none reported being "very confident" in helping an unconscious person, as shown in (Figure 1).

Post-workshop questionnaire

After the workshop, 24 students (96%) reported knowing how to use an AED, while one student

Figure 1

Degree of confidence in helping an unconscious person



(4%) was unsure how to use it. Twenty-two students (88%) reported that they would help an unconscious person on the street, while three students (12%) said they would not. Twenty-four students (96%) reported that they would call an ambulance for an unconscious person on the street, while one student (4%) was not sure. The level of confidence in helping an unconscious person after the workshop was as follows: four students (16%) were very confident, 12 students (48%) were confident, seven students (28%) were neutral, one student (4%) was unconfident, and one student (4%) was very unconfident, as shown in Figure 1.

In addition, sixteen students responded to the general feedback section of the questionnaire. Fourteen students reported learning how to aid an unconscious person and two students referred to the difficulties and concerns in using English in the workshop.

Discussion

Most of the participating students (76%) had attended a first-aid workshop held in Japanese before. Because our students are future medical doctors and nurses, it is of absolute importance that they have sufficient knowledge and skills to save a life in case of an emergency, so having a first-aid workshop increases their ability and readiness to quickly respond in case of an emergency. However, using English to communicate with bystanders or colleagues, as in our workshop, helps to remove learners from their comfort zones and actively encourages them to use English while putting their knowledge into practice.

Participants

Despite offering the workshop to both medical and nursing students, almost all the participants were medical students (96%), with only one (4%) nursing student. This might be due to confusion about the role of nurses and the importance of attending medical-related workshops. We plan to encourage more nursing students to attend future workshops by providing a pre-workshop lecture highlighting the significance of knowledge obtained through such a workshop, and the importance of early delivery of high-quality CPR by bystanders out-of-hospital regardless of profession. In addition, emphasizing the crucial role of nurses in performing CPR in a hospital setting may encourage more nursing students to attend future workshops.

Student feedback

Students' attitudes towards responding to a medical emergency. Sixteen students (64%) said they would help an unconscious person. This increased to 22 students (88%) post-workshop. Likewise, the number of students who said they would call an ambulance increased from 20 students (80%) to 24 students (96%). This shows that most of our students are willing to aid a person in an emergency, especially with proper knowledge and practice. However, three students (12%) reported they would not help an unconscious person after the workshop. This reluctance may be attributable to students' lack of confidence, implying that more training is required.

Pre-workshop, all students recognized what an AED is, but only half (54%) said they knew how to use it. This noticeably increased to (96%) after the workshop. In addition, about two-thirds (60%) of the students said that they lacked confidence in providing help to an unconscious person before the workshop. This was surprising, given that most of our students had attended a first-aid workshop conducted in Japanese before. The low confidence level could be attributed to the students' low retention of knowledge and skills and this suggests that those workshops should be mandated before and after graduation. Approximately two-thirds (64%) of the students felt confident performing first-aid support for an

unconscious person after the workshop.

At the end of the workshop, students recognized the importance of mastering such skills, as emergencies could happen anywhere without regard to one's profession. Therefore, appropriate and immediate intervention by bystanders is crucial and could save lives.

Among the comments expressed by the students in the feedback section of the questionnaire were:

> *"I will repeat what I learned in this class. I can apply it to ordinary days."*
> *"I learned how to help him or her, and I imagined it at home."*

We divided the students into small groups of three or four, as small-group active learning effectively develops students' knowledge, skills, and personal and professional attributes (Onyura et al., 2016; Schneider and Preckel, 2017). In addition, students were asked to actively put the information we provided in the workshop into practice by performing hands-on training, which helped boost and consolidate their confidence. Moreover, our goal was to keep the students engaged; this encouraged students to communicate with their colleagues in English, develop their collaborative and decision-making skills, and help them in building their self-confidence. As these students expressed it:

> *"I learned in English the procedure how to help an unconscious person and could do it in practice."*
> *"I didn't know anything about the way to help unconscious people before this course. And I could learn it with some activities in English, not only listing to teacher's lecture."*

Learning outcomes. After the workshop, participants stated that their first-aid-related knowledge increased. This was expected because detailed lectures with explanatory videos, followed by an on-site demonstration of how and what to do in case of an emergency, were provided for the students. However, further research is needed to address long-term retention of knowledge and skills, which were not assessed in this study.

Twelve students reported that they felt more confident assessing and providing help for an unconscious person on the street. According to the students' own comments in the questionnaire, this improvement was because of the knowledge gained through the workshop. As one student mentioned:

> *"I feel more confident now because I have learned how to do CPR."*

Other students reported the importance of knowing what to do in case of an emergency:

> *"I could learn what to do if I see an unconscious person and how to use AED."*
> *"At first, I didn't know a lot about first aid. However, by carrying out the procedures, I can memorize them well."*

English communication. Having an intensive first-aid workshop in English might be a challenging burden and may cause high levels of anxiety for some first-year medical and nursing students, partly because of their inability to communicate fluently while dealing with an emergency and partly because of an inability to express their thoughts and ideas owing to their fear of making mistakes in front of other students. However, we believe that active participation and interaction with other students while using English helps develop communication and decision-making skills. In addition, if properly implemented, the integrated and interdisciplinary approach of CLIL can contribute to improving language skills and subject knowledge alike (Gavrilova & Trostina, 2014, p. 8).

In this workshop, we used some medical vocabulary and concepts. Despite briefly explaining all the medical terms we used in the workshop, students found some challenging words. This was expected since they are in pre-clinical years, and some of those terms might be difficult even in Japanese.

Two students expressed their concerns about using English for communication as follows:

> *"Using English was not easy, because we have certain knowledge in English, but in Japan, we can use Japanese, it is easier."*
> *"I could learn about what to do as a sudden procedure, but getting more information about the patient in English was not easy."*

Conclusion

Upon reflection, we identified some limitations of this workshop and study. The first is that we did not assess the retention of the knowledge and skills acquired, because students were assessed immediately after the workshop and there was no follow-up questionnaire. Future studies should administer the questionnaire at spaced intervals after the workshop. The second is that some of the lectures lasted for an hour and a half, which is relatively long. We suggest making them shorter with hands-on practice sessions between each lecture in the future. The third is that only one nursing student attended the workshop; accordingly, these results might not be applicable to nursing students. Therefore, we should encourage more nursing students to participate in future workshops.

Most of the students stated that they would help and call an ambulance for an unconscious person. However, they felt unconfident in helping an unconscious person. Despite having previously attended a first-aid training workshop, the knowledge and skills gained in such workshops might be short-lived. This alone justifies the incorporation of first-aid training workshops in our curriculum. Additionally, conducting them in English helps improve students' communication skills and motivates them to use English actively. Allowing students to participate in training activities that develop decision-making skills in a task-based learning format helps improve students' language, critical thinking, and communication skills synergistically.

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