



OPEN ACCESS

EDITED BY

Raquel Leirós-Rodríguez,
University of León, Spain

REVIEWED BY

Aneta Grochowska,
University of Applied Sciences in
Tarnów, Poland
Julie Alexander-Ruff,
Montana State University, United States

*CORRESPONDENCE

Elena Andrade-Gómez
✉ elena.andrade@unirioja.es

RECEIVED 04 September 2023

ACCEPTED 13 October 2023

PUBLISHED 09 November 2023

CITATION

Ramírez-Torres CA, Andrade-Gómez E,
Lozano-Ochoa C, Caparrós-Civera MN and
Sapiña-Beltrán E (2023) Nursing students
bringing first aid to the community.
Front. Educ. 8:1288508.
doi: 10.3389/educ.2023.1288508

COPYRIGHT

© 2023 Ramírez-Torres, Andrade-Gómez,
Lozano-Ochoa, Caparrós-Civera and
Sapiña-Beltrán. This is an open-access article
distributed under the terms of the [Creative
Commons Attribution License \(CC BY\)](#). The use,
distribution or reproduction in other forums is
permitted, provided the original author(s) and
the copyright owner(s) are credited and that
the original publication in this journal is cited, in
accordance with accepted academic practice.
No use, distribution or reproduction is
permitted which does not comply with these
terms.

Nursing students bringing first aid to the community

Carmen Amaia Ramírez-Torres¹, Elena Andrade-Gómez^{1*},
Cristina Lozano-Ochoa¹, María Neus Caparrós-Civera² and
Esther Sapiña-Beltrán¹

¹Predepartment of Nursing, Faculty of Health Sciences, University of La Rioja, Logroño, Spain,

²Department of Law, Faculty of Social and Legal Sciences, University of La Rioja, Logroño, Spain

Aim: This study aimed to evaluate the theoretical and practical skills acquired by nursing students and school students after the service-learning project.

Methods: This study promotes nursing students and school students working together to gain awareness and basic theoretical knowledge of first aid. The learning project was conducted with nursing students ($n = 67$) and school students ($n = 131$) from April to June 2022. The nursing students gave scores higher than 8 on the aspects linked to expectations, self-perception, overall assessment, and attainment of the goals, and these results are in line with the qualitative analysis.

Results: Moreover, 100% of the school students reported a satisfactory outcome about the service.

Conclusion: Service-learning is a challenging and motivating methodology for nursing students, which results in greater engagement with theory and practice and the development of essential skills for future professionals.

KEYWORDS

health education, community integration, nurse, education, social learning, students, nursing, first aid

1. Introduction

University students must acquire basic theoretical and practical knowledge. However, other competencies are essential such as being able to teach, think critically, empathize, or participate (Al-Omar, 2004; Jones and Kiser, 2014). Service learning comprises learning based on the participatory experience of students framed between democratic theories, pragmatic philosophy, and cognitive and developmental psychology (Long and Gummelt, 2020). It could be defined as more than volunteering; it combines work in the community that situates students in the real world, and they learn new theoretical knowledge while meeting societal needs (Rossenberg, 2000; Chambers and Lavery, 2012; Percy and Richardson, 2018; Oh, 2019).

Martínez Lozano et al. (2018) showed that students who undertake service-learning projects improve in various aspects compared to those who do not undertake service-learning projects. Moreover, some improvements are linked to theoretical aspects such as the overall mean in grades (Prentice and Robinson, 2010), critical thinking (Astin et al., 2000; Prentice and Robinson, 2010), and writing (Astin et al., 2000).

On the other hand, some competencies demonstrate particularly relevant benefits for nursing such as leadership, interpersonal skills (Astin et al., 2000), communication, teamwork, and civic responsibility (Bentley and Ellison, 2005; Prentice and Robinson, 2010).

Nowadays, there is a global concern in nursing about nurse–patient staffing ratios, an issue further highlighted by the COVID-19 pandemic. The deficient nurse–patient ratio entails greater levels of burnout and increases the number of nurses who leave the profession (Galanis et al., 2021). The study by Collard et al. (2020) mentions the importance of suitable training for nursing students to ensure that they are resilient and continue in the profession. However, higher education seems to be failing at introducing students to practice, which is a key point to the completion of nursing training (Baldwin et al., 2014a; Sytsma et al., 2015).

First aid is essential for nursing training too; moreover, it is also important for the general population to have basic knowledge of life support and emergencies (Mohd Sharif et al., 2018). Despite its importance, studies show that first aid knowledge in the general population is lacking (Başer et al., 2007; Joseph et al., 2015; Midani et al., 2019). In Spain, an exploratory study performed in 2018 found that 75.6% of Spanish people consider their knowledge of first aid insufficient [Spanish Society of Emergency Medicine (SEMES), 2018]. However, quick basic first aid can improve patients' future prognosis. Other Spanish studies consider that there is a need to start improving knowledge of basic first aid from schools in our context (Ballesteros-Peña et al., 2016; Rodríguez-Lorenzo et al., 2020).

Service learning allows students to be placed in society and promotes their acquisition of skills that enhance their professional development (Thomas and Smith, 2017). This methodology supports important benefits; this is the reason why the implementation of service learning at the university is a considerable option, particularly for a bachelor's degree in nursing because it can improve the understanding of students about first aid and provide motivation in training. In addition, it could be a service to the community that can improve the knowledge of first aid and the responsibility that people must take in an emergency. The study aimed to evaluate the theoretical and practical skills acquired by nursing students and school students after the service-learning project.

2. Methods

2.1. The “accessible first aid” project

The project was titled “accessible first aid.” A total of 68 nursing students in their third academic year participated in the project. These nursing students did a workshop from April to June 2022 (3 h per week) for 11 groups of students aged 14–18 years from two different schools. The project was divided into 9 weeks (Figure 1).

The project aimed to promote nursing students and school students working together to gain awareness and basic practical and theoretical knowledge of first aid.

2.2. Design

A post-intervention study was conducted to evaluate the theoretical and practical skills acquired by nursing students and school students after the service-learning project.

The study was approved by the Ethics Committee (CE252022). All nursing students signed informed consent to participate as well as confidentiality agreements with the assurance that they would be used for teaching purposes only and would be kept confidential.

2.3. Study context

The project was performed in a sample of the third academic year students of bachelor's degree in nursing at the University of La Rioja (Spain) in the 2021–2022 academic year. To hold the workshops simultaneously at the schools, the nursing students were split into 11 groups, one group with seven students and 10 groups with six students ($n = 67$; Figure 2).

Additionally, a sample of school students received the accessible first aid workshop ($n = 131$ school students). Two schools were selected by convenience.

2.4. Data collection and instruments

First, a survey was conducted with the students to assess different items in the service-learning project. The survey consisted of 17 items that formed part of an *ad hoc* questionnaire designed by Gragera et al. (2019), and each item was scored on a Likert-type scale (1–10). The 17 items were grouped into five categories, namely, expectations, self-perception, self-perception with others, overall assessment, and service-learning goals (Table 1).

Second, the nursing students' reflection diaries were collected and anonymized by naming them with the initials of the nursing student and a randomly assigned number. Students were encouraged to record the attitudes and skills they believed they had acquired after participating in the project (Cabillas et al., 2018).

Third, a satisfaction survey was conducted on the school students that contained five dichotomous questions (yes/no), one rating scale (1–10), and the opportunity to provide suggestions.

2.5. Data analysis

Quantitative analysis was performed using Statistical Package for the Social Sciences (SPSS) version 26. Descriptive analysis was conducted on the data to view the results in frequencies, means, and standard deviation.

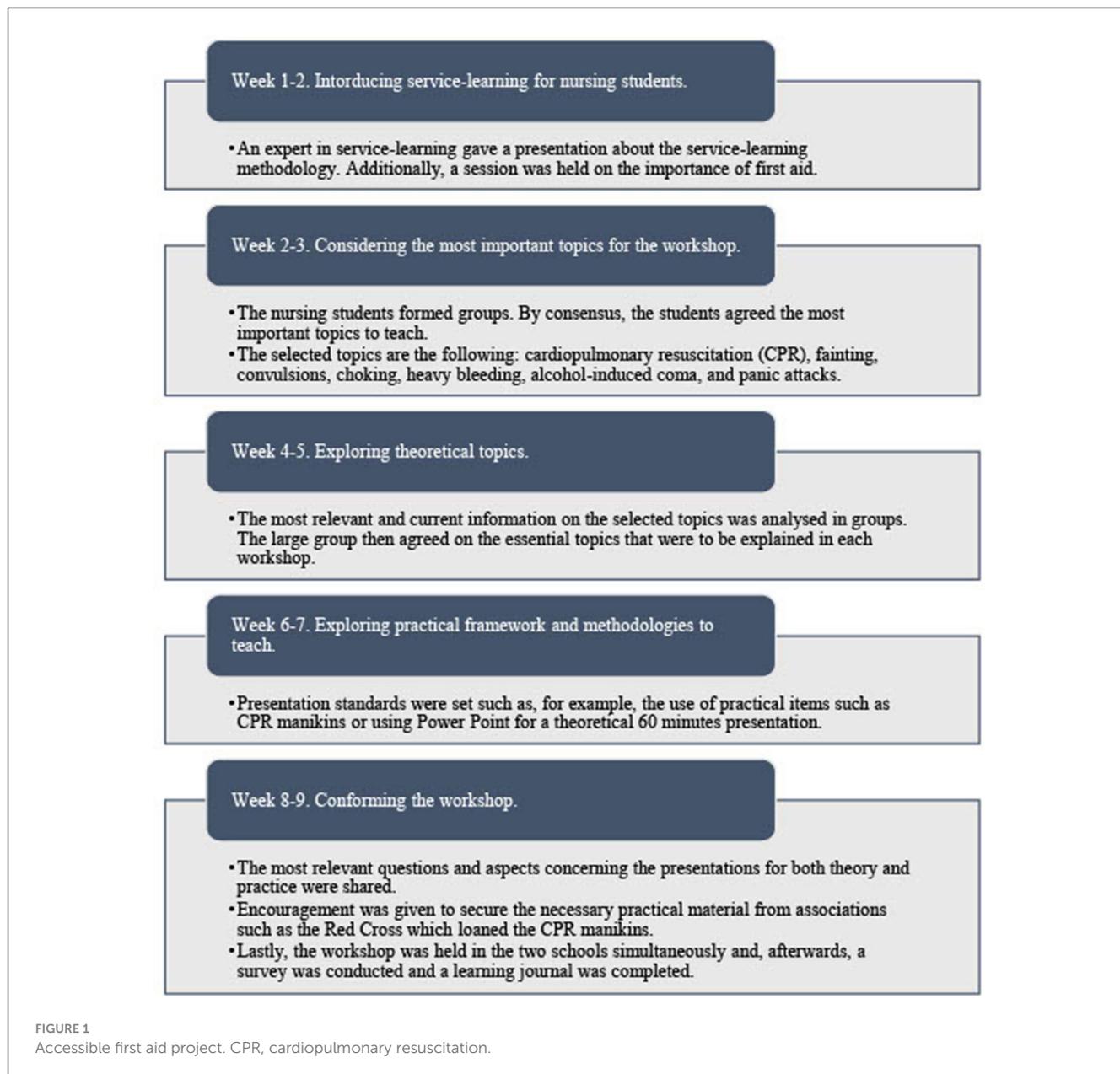
Qualitative analysis was performed by two researchers using NVivo 2020. They each independently analyzed the texts by setting categories. In the final report, they achieved consensus to establish relationships with the quantitative analysis.

3. Results

3.1. Quantitative analysis

3.1.1. Nursing students

A total of 51 nursing students (76.12%) answered a survey assessing the activity. Of the students surveyed, 80.4% were women aged 20–51, with a mean age

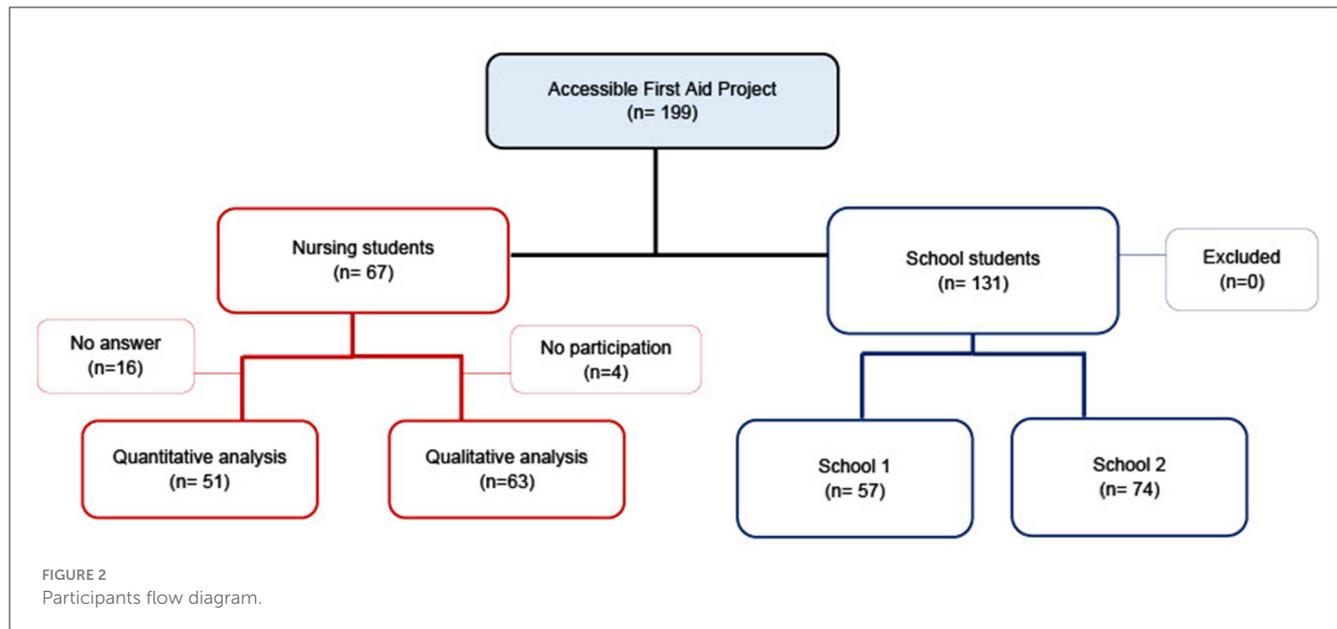


of 22 years [standard deviation (SD) 5.36]. None of the participants had previous experience with service learning.

The results of the final survey show a satisfactory rating in the categories of self-perception, self-perception with others, overall assessment, and service-learning goals, as the means in the Likert scale in these categories are higher than 8 (Table 2). In the case of the expectations category, high mean scores in the Likert scale were recorded in all items except the “I have been prejudiced against the people I have worked with” item, which yielded a lower score, with a mean score in the Likert scale of 3.10 (SD 0.38; Table 2).

3.1.2. School students

In the study, 100% of the school students ($n = 131$) answered the student satisfaction survey on the first aid workshop. All the students responded positively to the first three questions: (1) “Was the group suitably prepared for the workshop?” (2) “Did the group show interest in helping the students learn?” and (3) “Was the workshop structured in such a way that it helped you learn all the concepts?”. In question four, which covered the importance of what had been learned in the workshop, two students answered that they did not think it was important. However, only one would not recommend this course to other students. The activity received a mean rating of 9.60 (SD 0.73).



3.2. Qualitative analysis

In the study, 94.02% of the nursing students' reflection diaries ($n = 63$) were analyzed. A summary of the most important perceptions was included (Table 3).

3.2.1. Perceptions on the service-learning methodology

3.2.1.1. Positive experience

Participants described the methodology as innovative, satisfactory, motivating, interesting, appealing, useful, and effective. It was also categorized as enriching on a personal level. Some participants had a positive perception from the beginning, while others changed their opinion. Finally, they all expressed a positive experience.

3.2.1.2. Suggestions

Some students noted that they would like to do more projects of this nature in other areas of society on other topics, and they remarked on the necessity of using more resources. Others, however, deemed that these types of projects should be carried out at times when there is less study load.

3.2.2. Perceptions on service-learning goals

3.2.2.1. Theoretical knowledge

First, they believe that training in areas linked to first aid has been essential and that this has allowed them to strengthen their knowledge.

3.2.2.2. Teamwork

Teamwork is highlighted, but mention is also made of the importance of these groups being formed by the students themselves on the basis of rapport.

3.2.2.3. Presentation skills

They very positively appreciated the opportunity to present to strangers of different ages. Having a first contact with the teaching role of nursing.

3.2.2.4. Empathy

The need to adapt their knowledge to those of younger school students fosters the development of empathy.

3.2.3. Perceptions on community service

3.2.3.1. Need: teach the community first aid

They thought it was necessary to raise awareness about basic first aid in society. Many of them thought this was a relevant issue and would have liked to have prior knowledge of it before studying nursing; others highlighted its importance due to the positive impact this knowledge may have on survival. Indeed, during the activity, some mentioned a lack of knowledge.

3.2.3.2. Community outreach: a success

Most mentioned that they were satisfied with the activity and the reception they were given by the school students.

4. Discussion

First aid saves lives and must be learned and remembered by everyone in the community (Abelairas-Gómez et al., 2020). This study enabled nursing students to put into practice their knowledge of a real problem that must be addressed in our society [Spanish Society of Emergency Medicine (SEMES), 2018]. Furthermore, introducing school students to first aid in this study allowed for analysis of the perception of the activity from the perspective of nursing students and school students.

The importance of training programs that include service learning as part of the training of future nurses is further underlined (Marcilla-Toribio et al., 2022; Yoong et al., 2022; Zhu et al., 2022).

TABLE 1 Service-learning activity final assessment rubric.

Category	Item
Expectations	1. The activity has exceeded my expectations
	2. I think what I have learned will be very useful in my professional future
	3. I think it has been an enriching experience on a personal level
	4. I have been prejudiced against the people I have worked with
	5. I believe the work has been different from others
Self-perception	6. I feel proud of my work in service learning
	7. In this work, I have felt responsible for what I was doing
	8. I have felt confident in what I was doing
Self-perception with others	9. I have felt useful with the people from the school
	10. I have felt gratitude from the people from the school
Overall assessment	11. It has been an educational experience
	12. Engaging in this experience has been a good decision
	13. I would like to take part in service-learning experiences in other academic courses
	14. I would recommend these service-learning experiences to other classmates and friends
Service-learning goals	15. I have learned that it is also possible to learn in service-learning activities
	16. I have understood that we all have something to teach and something to learn
	17. Service learning provides opportunities for reflection and specific tasks for the project

Similar to other studies, the results are highly satisfactory for the students, exceeding expectations and allowing them to develop essential skills for professional competence (Papastavrou et al., 2016; Thomson et al., 2017; Rodriguez and Lapiz-Bluhm, 2018; Lin, 2021), such as leadership and conflict resolution (Saylor et al., 2018; Spencer, 2021).

Students highlighted that they were motivated by the work involved in a different learning environment for students and teachers (Papastavrou et al., 2016; Herrmann, 2020; Godoy-Pozo et al., 2021). In fact, it demonstrates that innovative methodologies boost motivation and encourage self-learning in students (Al Murshidi, 2020). Some of the knowledge they acquired in this project is essential for their professional future, such as empathy, critical thinking, and teamwork (Baldwin et al., 2014b; Thomson et al., 2017). Bringing future nurses and the community together creates the opportunity for conversation with the public and to understand real needs and how to address them. This development of cultural empathy and community nursing offers significant benefits to the nursing curriculum, as has been shown by other published studies (Thomas and Smith, 2017; Rodriguez-Costa et al., 2020; Tanna et al., 2020; Gradellini et al., 2021).

Beaman et al. (2018) found that most studies measured results in nursing students but not in the community itself; in this study, we considered the satisfaction of the school students. In fact, there

TABLE 2 Mean scores on Likert scales from 1 to 10 in the final assessment of the service-learning activity.

Category	Item	Likert scale
		Mean (SD) (n = 51)
Expectations	1. The activity has exceeded my expectation	8.88 (0.16)
	2. I think what I have learned will be very useful in my professional future	8.92 (0.18)
	3. I think it has been an enriching experience on a personal level	8.80 (0.21)
	4. I have been prejudiced against the people I have worked with	3.10 (0.38)
	5. I believe the work has been different from others	9.24 (0.14)
Self-perception	6. I feel proud of my work in service learning	9.27 (0.18)
	7. In this job, I have felt responsible for what I was doing	9.43 (0.14)
	8. I have felt confident in what I was doing	8.75 (0.19)
Self-perception with others	9. I have felt useful with the people from the school	9.16 (0.22)
	10. I have felt gratitude from the people from the school	9.02 (0.25)
Overall assessment	11. It has been an educational experience	9.25 (0.15)
	12. Engaging in this experience has been a good decision	9.39 (0.14)
	13. I would like to take part in service-learning experiences in other academic courses	8.35 (0.26)
	14. I would recommend these service-learning experiences to other classmates and friends	9.10 (0.20)
Service-learning goals	15. I have learned that it is also possible to learn in service-learning activities	9.31 (0.17)
	16. I have understood that we all have something to teach and something to learn	9.59 (0.09)
	17. Service-learning provides opportunities for reflection and specific tasks for the project	9.06 (0.15)

SD, standard deviation.

is a mutual benefit, which should not be overlooked (Cannon et al., 2020; Tyndall et al., 2020). For future studies, measuring the results of service-learning projects in the community is complex and pertinent. Furthermore, in university settings, it may represent an opportunity for interprofessional collaboration (Higbea et al., 2020) with different university courses and degrees, as well as with other universities, to enhance the cross-curricular scope of the content that is offered to school students. Longitudinal studies would also be interesting in assessing the effects of service learning at scales that measure essential skills over the long term.

TABLE 3 Perception of nursing students about service-learning projects.

Perceptions on the service-learning methodology	
Positive experience	“The experience, despite not very inspiring first expectations, has been very positive and gratifying, I have enjoyed it, and it has been enriching” NS37
Suggestions	“And finally, address other topics beyond first aid and not only in schools. Health education can also be addressed in residences and associations” NS40
Perceptions on service-learning goals	
Theoretical knowledge	“Nevertheless, I think that, on a personal level, each of us has dispelled our internalized myths on first aid and, similarly, we have strengthened knowledge on it that maybe we weren't so clear on” NS45
Teamwork	“Having the opportunity to form the groups on the basis of rapport has made the work easier, as otherwise, groupwork is usually very conflictive” NS49
Presentation skills	“As future nurses, undertaking this project may encourage us to continue training to find opportunities in teaching” NS64
Empathy	“One of our priorities has been putting ourselves in the place of the students who came to listen to our content in order to make it as digestible as possible” NS57
Critical thinking	“The working plan and how we have all built it up stage by stage has been extraordinary, I think we have all learned how to debate and, above all, listen to others, which doesn't always happen in class” NS44
Conflict resolution	“I would like to mention that regarding the problems that came up during the course of the work, I think they have been tackled maturely and solutions have been found quickly and effectively” NS43
Perceptions on community service	
Need: teach the community first aid	“When I asked people, I know I realized that they really did not know how to respond properly” NS38
Community outreach: a success	“We got started in our talk and all our prejudices fell away when we saw they were paying attention to us, listening to us, and were interested in the topic” NS47

NS, nursing student.

4.1. Limitations

The study has some limitations that should be mentioned. First, in the study, only students with a bachelor's degree in nursing were included, with a high percentage of women, and this aspect limits the generalizability of our results.

Second, there is no control group using a different methodology than service learning to teach the general population first aid knowledge. Furthermore, no assessment was made of the school students' knowledge before and after the activity, an aspect that may prove interesting.

4.2. Recommendations

This study's methodology has employed tools previously described and used in similar samples. Nevertheless, there are, at present, very few studies that use the service-learning methodology in an activity led by nursing students for school

students. The majority of the studies included activities with older populations (Gardner and Emory, 2018; Kwok et al., 2021) and vulnerable adults.

5. Conclusion

University teaching occasionally features a gap between theory and practice. The positive results of this study on nursing students' first aid motivation and training encourage the development of health professional training programs that include service learning as an ideal methodology. For that reason, nursing teachers must take responsibility within their capacity for the advancement and progression of future nurses by making them aware of the circumstances in their communities.

Data availability statement

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

Ethics statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

CR-T: Conceptualization, Investigation, Methodology, Writing—original draft, Writing—review & editing. EA-G: Formal analysis, Investigation, Writing—original draft, Writing—review & editing. CL-O: Conceptualization, Writing—review & editing. MC-C: Methodology, Writing—review & editing. ES-B: Funding acquisition, Investigation, Supervision, Writing—original draft, Writing—review & editing.

Funding

The author(s) declare financial support was received for the research, authorship, and/or publication of this article. This work was supported by University of La Rioja.

Acknowledgments

IES Práxedes Mateo Sagasta and Colegio Purísima Concepción.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated

organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

- Abelairas-Gómez, C., Carballo-Fazanes, A., Martínez-Isasi, S., López-García, S., Rico-Díaz, J., Rodríguez-Núñez, A., et al. (2020). Knowledge and attitudes on first aid and basic life support of Primary and Preschool teachers and parents. *An. Pediatr.* 92, 268–276. doi: 10.1016/j.anpedi.2019.10.010
- Al Murshidi, G. (2020). The advantages and challenges faced by the students of learning english as a foreign language during service-learning participation. *Psychol. Educ.* 57, 456–463.
- Al-Omar, B. (2004). Knowledge, attitudes and intention of high school students towards the nursing profession in Riyadh city, Saudi Arabia. *Saudi. Med. J.* 25, 150–155.
- Astin, A. W., Vogelgesang, L. J., Ikeda, E. K., and Yee, J. A. (2000). *How Service Learning Affects Students*. Available online at: <http://digitalcommons.unomaha.edu/slehigheredhttp://digitalcommons.unomaha.edu/slehighered/144> (accessed July 25, 2022).
- Baldwin, A., Bentley, K., Langtree, T., and Mills, J. (2014a). Achieving graduate outcomes in undergraduate nursing education: following the Yellow Brick Road. *Nurse Educ. Pract.* 14, 9–11. doi: 10.1016/j.nepr.2013.06.011
- Baldwin, A., Mills, J., Birks, M., and Budden, L. (2014b). Role modeling in undergraduate nursing education: an integrative literature review. *Nurse Educ. Today* 34, e18–e26. doi: 10.1016/j.nedt.2013.12.007
- Ballesteros-Peña, S., Fernández-Aedo, I., Pérez-Urdiales, I., García-Azpiaz, Z., and Unanue-Arza, S. (2016). Knowledge and attitudes of citizens of the Basque Country about cardiopulmonary resuscitation and automated external defibrillators. *Med. Intensiva.* 40, 75–83. doi: 10.1016/j.medim.2015.10.004
- Başer, M., Çoban, S., Taşci, S., Sungur, G., and Bayat, M. (2007). Evaluating first-aid knowledge and attitudes of a sample of Turkish Primary School teachers. *J. Emerg. Nurs.* 33, 428–432. doi: 10.1016/j.jen.2006.11.003
- Beaman, A., Asano, R., Sibbritt, D., Newton, P. J., and Davidson, P. M. (2018). Global service learning and health systems strengthening: an integrative literature review. *Heliyon* 4, e00713. doi: 10.1016/j.heliyon.2018.e00713
- Bentley, R., and Ellison, K. (2005). Impact of a service-learning project on nursing students. *Nurs. Educ. Perspect.* 26, 285–290.
- Cabillas, M., Macías Gómez-Estern, B., and Marco, M. (2018). “Los diarios de campo como herramienta de investigación de las experiencias de ApS en la Universidad. Una propuesta de análisis,” in *El Aprendizaje-Servicio en la Universidad. Una Metodología Docente y de Investigación al Servicio de la Justicia social y el Desarrollo Sostenible, 1st edn* (Salamanca: Comunicación Social y Publicaciones), 41–41.
- Cannon, M. L., Perkinson, M. A., DeLaTorre, A. K., Martinez, I. L., Ozer, E., Sweatman, W. M., et al. (2020). Service-learning through conference-based, interdisciplinary workshops on age-friendly design. *Gerontol. Geriatr. Educ.* 41, 200–205. doi: 10.1080/02701960.2019.1643337
- Chambers, D. J., and Lavery, S. (2012). Service-learning: a valuable component of pre-service teacher education. *Aust. J. Teach. Educ.* 37, 128–137. doi: 10.14221/ajte.2012v37n4.2
- Collard, S. S., Scammell, J., and Tee, S. (2020). Closing the gap on nurse retention: a scoping review of implications for undergraduate education. *Nurse Educ. Today* 84, 104253. doi: 10.1016/j.nedt.2019.104253
- Galanis, P., Vraika, I., Fragkou, D., Bilali, A., and Kaitelidou, D. (2021). Nurses' burnout and associated risk factors during the COVID-19 pandemic: a systematic review and meta-analysis. *J. Adv. Nurs.* 77, 3286–3302. doi: 10.1111/jan.14839
- Gardner, J., and Emory, J. (2018). Changing students' perceptions of the homeless: a community service learning experience. *Nurse Educ. Pract.* 29, 133–136. doi: 10.1016/j.nepr.2018.01.001
- Godoy-Pozo, J., Bustamante, D., Valenzuela, T., Sánchez Güenol, J., Illesca-Pretty, M., Flores González, E., et al. (2021). Service-learning: experience of teacher-tutors in the nursing career. *Medwave* 21, e8218–e8218. doi: 10.5867/medwave.2021.06.8218
- Gradellini, C., Moreno-García, J., Bufalino, G., Chaves, M. C., Gómez-Cantarino, S., Dominguez-Isabel, P., et al. (2021). Cultural competence and cultural sensitivity education in university nursing courses. A scoping review. *Front. Psychol.* 12, 682920. doi: 10.3389/fpsyg.2021.682920
- Gragera, R., Asenjo, A., Gigante, C., Martín, A., Cuesta, D., García-Sastre, M., et al. (2019). “Evaluación de una experiencia de ApS como instrumento del aprendizaje interdisciplinar en el Grado de Enfermería,” in *V Congreso Internacionales sobre Aprendizaje, Innovación y Competitividad (CINAIC)* (Madrid), 62–67. doi: 10.26754/CINAIC.2019.0015
- Herrmann, A. D. (2020). Service-learning and professional values development of baccalaureate nursing students. *Nurs. Educ. Perspect.* 41, E47–E479. doi: 10.1097/01.NEP.0000000000000484
- Higbee, R. J., Elder, J., VanderMolen, J., Cleghorn, S. M., Brew, R., Branch, K., et al. (2020). Interprofessional service-learning definition. *J. Interprof. Care* 34, 283–286. doi: 10.1080/13561820.2019.1650729
- Jones, A. L., and Kiser, P. M. (2014). Conceptualizing criticality as a guiding principle for high quality academic service learning. *Int. J. Teach. Learn. High. Educ.* 26, 147–156.
- Joseph, N., Narayanan, T., Bin Zakaria, S., Venugopal Nair, A., Belayutham, L., Mihiraa Subramanian, A., et al. (2015). Awareness, attitudes and practices of first aid among school teachers in Mangalore, south India. *J. Prim. Health Care* 7, 274. doi: 10.1071/HC15274
- Kwok, S. W. H., Pang, P. C. P., Chung, M. H., and Wu, C. S. T. (2021). Faculty service-learning students as home-visitors: outcomes of a lifestyle modification program for vulnerable families with residents in rural Indonesian communities. *Front. Public Health* 9, 597851. doi: 10.3389/fpubh.2021.597851
- Lin, T. H. (2021). Revelations of service-learning project: multiple perspectives of college students' reflection. *PLoS ONE* 16, e0257754. doi: 10.1371/journal.pone.0257754
- Long, E. M., and Gummelt, G. (2020). Experiential service learning: building skills and sensitivity with Kolb's learning theory. *Gerontol. Geriatr. Educ.* 41, 219–232. doi: 10.1080/02701960.2019.1673386
- Marcella-Toribio, I., Moratalla-Cebrián, M. L., Bartolomé-Guitierrez, R., Cebada-Sánchez, S., Galán-Moya, E. M., Martínez-Andrés, M., et al. (2022). Impact of service-learning educational interventions on nursing students: an integrative review. *Nurse Educ. Today* 116, 105417. doi: 10.1016/j.nedt.2022.105417
- Martínez Lozano, V., Melero Aguilar, N., Ibañez Ruiz del Portal, E., and Sánchez Sánchez, M. C. (2018). *El Aprendizaje-Servicio en la Universidad: Una Metodología Docente y de Investigación al Servicio de la Justicia Social y el Desarrollo Sostenible*. Salamanca: Comunicación Social Ediciones y Publicaciones.
- Midani, O., Tillawi, T., Saqer, A., Hammami, M. B., Taifour, H., Mohammad, H., et al. (2019). Knowledge and attitude toward first aid: a cross-sectional study in the United Arab Emirates. *Avicenna J. Med.* 9, 1–7. doi: 10.4103/AJMAJMJ_140_18
- Mohd Sharif, N. A., Che Hasan, M. K., Che Jamaludin, F. I., and Zul Hasymi Firdaus, M. K. (2018). The need for first aid education for adolescents. *Enferm Clin.* 28, 13–18. doi: 10.1016/S1130-8621(18)30028-7
- Oh, J. (2019). Effects of nursing students' empathy and interpersonal competence on ideal nurse attributes. *J. Nurs. Educ.* 58, 130–135. doi: 10.3928/01484834-20190221-02
- Papastavrou, E., Dimitriadou, M., Tsangari, H., and Andreou, C. (2016). Nursing students' satisfaction of the clinical learning environment: a research study. *BMC Nurs.* 15, 44. doi: 10.1186/s12912-016-0164-4
- Percy, M., and Richardson, C. (2018). Introducing nursing practice to student nurses: How can we promote care compassion and empathy. *Nurse Educ. Pract.* 29, 200–205. doi: 10.1016/j.nepr.2018.01.008
- Prentice, M., and Robinson, G. (2010). Improving student learning outcomes with service learning part of the service learning commons. *Am. Assoc. Community Colleges* 1–17. Available online at: <http://digitalcommons.unomaha.edu/slehigheredhttp://digitalcommons.unomaha.edu/slehighered/148>
- Rodríguez, Y., and Lapiz-Bluhm, M. (2018). Community service learning in undergraduate nursing: impact and insights among students. *J. Nurs. Pract. Appl. Rev.* Res. 8, 42–49.
- Rodríguez-Costa, I., González-Rivera, M. D., Ortega, C., Llabrés-Mateu, J. M., Blanco-Morales, M., Abuin-Porras, V., et al. (2020). Professional and personal physical therapist development through service learning in collaboration with a prisoner reinsertion program: a qualitative study. *Int. J. Environ. Res. Public Health* 17, 1–11. doi: 10.3390/ijerph17249311
- Rodríguez-Lorenzo, L., Ruibal-Lista, B., Toro, S. (2020). First aid in the compulsory education curriculum in Spain. *Sport. Sci. J. Sch. Sport Phys. Educ. Psychomotricity* 6, 365–389. doi: 10.17979/sportis.2020.6.2.5831
- Rossenbergl, L. (2000). Becoming the change we wish to see in the world: combating through service learning learned passivity. *Acad. Exch. Q.* 4, 6–11.

- Saylor, J., Hertsberg, L., McQuillan, M., O'Connell, A., Shoe, K., Calamaro, C. J., et al. (2018). Effects of a service learning experience on confidence and clinical skills in baccalaureate nursing students. *Nurse Educ. Today* 61, 43–48. doi: 10.1016/j.nedt.2017.11.009
- Spanish Society of Emergency Medicine (SEMES) (2018). *Knowledge of the Spanish Society in Basic Life Support Maneuvers and Attitude to Emergencies*. Madrid: MAPFRE Foundation.
- Spencer, J. A. (2021). Integrating service learning into the RN to BSN curriculum with the application of QSEN competencies. *J. Prof. Nurs.* 37, 1044–1048. doi: 10.1016/j.profnurs.2021.08.007
- Sytsma, T. T., Haller, E. P., Youdas, J. W., Krause, D. A., Hellyer, N. J., Pawlina, W., et al. (2015). Long-term effect of a short interprofessional education interaction between medical and physical therapy students. *Educ. Prim. Care* 8, 317–323. doi: 10.1002/ase.1546
- Tanna, S., Fyfe, M., and Kumar, S. (2020). Learning through service: a qualitative study of a community-based placement in general practice. *Educ. Prim. Care* 31, 305–10. doi: 10.1080/14739879.2020.1759459
- Thomas, M. H., and Smith, R. S. (2017). Building community engagement: Incorporation of service learning in a nursing curriculum. *Nurse Educ. Today* 52, 63–65. doi: 10.1016/j.nedt.2017.01.013
- Thomson, R., Docherty, A., and Duffy, R. (2017). Nursing students' experiences of mentorship in their final placement. *Br. J. Nurs.* 26, 514–521. doi: 10.12968/bjon.2017.26.9.514
- Tyndall, D., Kosko, D., Forbis, K., and Sullivan, W. (2020). Mutual benefits of a service-learning community-academic partnership. *J. Nurs. Educ.* 59, 93–96. doi: 10.3928/01484834-20200122-07
- Yoong, S. Q., Liao, A. W. X., Goh, S. H., and Zhang, H. (2022). Educational effects of community service-learning involving older adults in nursing education: an integrative review. *Nurse Educ. Today* 113, 105376. doi: 10.1016/j.nedt.2022.105376
- Zhu, Z., Xing, W., Liang, Y., Hong, L., and Hu, Y. (2022). Nursing students' experiences with service learning: a qualitative systematic review and meta-synthesis. *Nurse Educ. Today* 108, 105206. doi: 10.1016/j.nedt.2021.105206