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Facultad de Ciencias Humanas y Sociales

IMPACT OF AN INTERNATIONALIZATION AT HOME PROGRAM ON NURSING STUDENTS

Autora: Maria Galán Lominchar
Directores: Isabel Muñoz-San Roque
           Cristino del Campo Cazallas

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A mi madre, Carmen

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ABSTRACT

The internationalization of higher education has been traditionally linked to an elitist approach based on the international mobility of students. However, the current low participation levels in study abroad programs cannot meet the need for culturally and internationally competent nurses. To this end, implementing strategies based on internationalization at home is essential. Virtual exchange programs and clinical simulation-based experiences are being used separately to internationalize students without the need to travel abroad. A program combining virtual exchange and an innovative approach to clinical simulation created by the author (called international clinical simulation) is presented in this study, namely the Global Nursing Care program.

The main objective of this doctoral thesis is to analyze the extent to which an internationalization at home program that combines virtual exchange and an international clinical simulation impacts the cultural intelligence and general self-efficacy of nursing students.

A quasi-experimental, analytical, and longitudinal study was conducted. The intervention was the Global Nursing Care program, and the participants were nursing students from the San Juan de Dios School of Nursing and Physiotherapy, Universidad Pontificia Comillas, Spain, and the West Coast University, USA. Data were collected utilizing the Cultural Intelligence Scale, the General Self-Efficacy Scale, and a sociodemographic questionnaire.

Three different publications form the core of this dissertation. The first one is a book section that describes the initial research project. The second and third are original articles that present and discuss the results of this study. All cultural intelligence dimensions were augmented following program participation, and participants presented higher cultural intelligence than control students. Similarly, the general self-efficacy of participating nursing students was significantly augmented after the completion of the Global Nursing Care program, and no differences based on sociodemographic characteristics were found.

In conclusion, the use of a mixed-methods internationalization at home program that combines virtual exchange and international clinical simulation has a positive impact

on nursing students. Further research that overcomes this study's limitations and focuses on other significant variables is suggested.

As this dissertation is written in English due to its international character and the inclusion of two articles published in this language, a longer-than-usual abstract in Spanish that outlines the study is presented below.

RESUMEN

La internacionalización de la educación superior ha estado, desde sus inicios, basada en la movilidad internacional de los estudiantes. Las estrategias de internacionalización a todos los niveles, desde el institucional al continental, han estado dirigidas al fomento de esa movilidad internacional. La participación en programas de intercambio internacional ha mostrado ser muy efectiva en la adquisición de varias competencias y en el desarrollo de distintos rasgos y actitudes. Diversas iniciativas, tales como el programa Erasmus+ en Europa y la creación del Espacio Europeo de Educación Superior, han permitido que cada vez más estudiantes puedan participar en un periodo de estudios o prácticas en el extranjero. Sin embargo, a pesar de que la participación de los estudiantes en programas de movilidad internacional haya aumentado exponencialmente en las últimas décadas, la proporción de participantes respecto al total de estudiantes universitarios sigue siendo muy reducida y no es suficiente para asegurar la adquisición de competencias interculturales e internacionales por parte de todos los estudiantes. En el caso de los estudios de enfermería, la formación de los profesionales debe garantizar que, al concluir sus estudios, estos son cultural e internacionalmente competentes. Tal y como señalan varios organismos internacionales, esto es fundamental para asegurar un cuidado de calidad, centrado en el paciente y que tenga en cuenta sus aspectos culturales. Dada la escasa participación de los estudiantes en los intercambios internacionales, la única forma de asegurarse de que todos adquieren estas competencias, y no solo aquellos que pueden permitirse realizar un intercambio en el extranjero, es mediante la internacionalización en casa.

Las estrategias basadas en la internacionalización en casa buscan integrar las dimensiones interculturales e internacionales en los planes de estudios, tanto formales como informales, de todos los estudiantes en sus entornos locales. De esta forma, la internacionalización se hace inclusiva, sostenible y accesible para todos. Gracias al aumento del uso de tecnologías en la educación superior derivado de las restricciones establecidas durante la pandemia de COVID-19, se han popularizado los intercambios virtuales, en especial su variante COIL (Collaborative Online International Learning), en los que los estudiantes de diferentes partes del mundo trabajan en conjunto para lograr unos objetivos comunes establecidos por los docentes. El uso de esta herramienta ha mostrado ser eficaz en el desarrollo de competencias interculturales, en la mejora de los niveles de lengua extranjera y en varias competencias transversales o "soft skills", tales

como las competencias digitales, la resolución de problemas, el trabajo en equipo o la adaptabilidad.

Por su parte, en el ámbito de la enfermería, la simulación clínica es una herramienta pedagógica integrada en la formación de los estudiantes desde hace varias décadas. Las experiencias basadas en simulación permiten sustituir horas de prácticas clínicas en varios países, exponer a los estudiantes a situaciones complejas y poco comunes en el ámbito hospitalario en un entorno controlado y evaluarles en igualdad de condiciones. Asimismo, su uso está recomendado por la Organización Mundial de la Salud para mejorar la seguridad del paciente. Los beneficios de la simulación en los estudiantes de enfermería no se limitan al desarrollo de competencias enfermeras específicas, sino que se ha demostrado su eficacia en el desarrollo del pensamiento crítico, las habilidades psicomotrices, la autoeficacia, la confianza, el juicio clínico y, en el ámbito que nos ocupa, la mejora de diversas variables relacionadas con la competencia intercultural de los estudiantes.

Con el objetivo de mejorar las competencias internacionales e interculturales de los estudiantes del Grado en Enfermería, y basado en la teoría del aprendizaje colaborativo y experiencial, se creó el programa Global Nursing Care en la Escuela de Enfermería y Fisioterapia San Juan de Dios, Universidad Pontificia Comillas de Madrid (España), junto con la West Coast University (EE. UU.). El programa consta de dos módulos interrelacionados: un intercambio virtual de cinco semanas de duración, en el que los estudiantes de ambos países trabajan juntos en diferentes actividades síncronas y asíncronas; y una experiencia basada en simulación internacional, un enfoque innovador de la simulación, creado por la autora de este trabajo.

La elección de estas metodologías tuvo como objetivo ofrecer a los estudiantes la posibilidad de participar en una actividad lo más parecida posible a un intercambio internacional, sin la necesidad de viajar al extranjero. Durante el módulo de intercambio virtual, los participantes interaccionan con compañeros de otras culturas, trabajan en equipo de forma colaborativa, establecen nuevas relaciones, adquieren conocimientos sobre otras culturas, sistemas sanitarios y el papel del profesional de enfermería en los mismos y desarrollan habilidades necesarias para la resolución de conflictos interculturales. Durante la experiencia basada en simulación internacional participan de forma individual en tres escenarios, cada uno con unos objetivos específicos y basados en la interacción con un paciente, su familiar y un compañero, y en los que surgen

diferentes situaciones en las que los estudiantes tienen que aplicar sus competencias interculturales e internacionales. El entorno del centro/laboratorio de simulación replica en la medida de lo posible el de un centro sanitario extranjero. Esta simulación les permite aplicar conocimientos adquiridos durante el intercambio virtual, y experimentar brevemente cómo es trabajar en un contexto internacional.

El módulo de intercambio virtual se desarrolló en inglés, y la simulación internacional en el idioma extranjero para los alumnos (inglés en el caso de los estudiantes españoles y español en el caso de los estudiantes norteamericanos).

El programa se implementó en dos ocasiones a lo largo del año 2022. Se ofreció a 860 estudiantes de enfermería (Grado en Enfermería en la institución española, y Bachelor's Degree in Nursing en la institución norteamericana), de los cuales participaron 70.

El objetivo principal de este estudio es analizar qué impacto tiene en los estudiantes de enfermería un programa de internacionalización en casa que combina un intercambio virtual y una simulación internacional, específicamente sobre su inteligencia cultural y su autoeficacia general.

Se lleva a cabo un estudio cuasiexperimental, analítico y longitudinal, en el que la intervención es la participación en el programa Global Nursing Care. De los 70 estudiantes participantes en el programa, 57 participan en el estudio como grupo GNC. Doscientos cuatro estudiantes que no participan en el programa, y que pertenecen a los mismos cursos que los estudiantes del grupo GNC, participan en el estudio como grupo control. Para la medición de las variables se escoge una escala de inteligencia cultural (CQ) y una de autoeficacia general, en sus versiones en inglés y adaptadas al castellano, todas validadas y con buenas propiedades psicométricas. Además, se crea un cuestionario específico para la recogida de datos sociodemográficos. Se solicita a los estudiantes por parte del profesorado o del personal del equipo de educación internacional que respondan a la encuesta que recoge las tres herramientas de forma online. La participación, tanto en el programa como en el estudio es voluntaria, se obtiene consentimiento informado de los participantes y se garantiza su anonimato. El estudio en su conjunto está aprobado por el Comité de Ética de la Universidad Pontificia Comillas.

Los datos obtenidos se analizan mediante el software SPSS de IBM (versión 28.0.1.1) y los resultados se publican en dos artículos originales en revistas

internacionales con alto factor de impacto, que constituyen, junto con un capítulo de libro derivado de la participación en un congreso internacional, la sección de resultados de esta tesis. En este capítulo de libro se describe el programa y el proyecto de investigación planteado en un principio para la realización de esta tesis doctoral. En el primer artículo, se incluyen los datos que muestran un aumento significativo en la puntuación total de la escala de inteligencia cultural y en cada una de las dimensiones, tras la participación en el programa GNC. Asimismo, se observan diferencias significativas entre los niveles de inteligencia cultural del grupo GCN y el grupo control después de la participación de los primeros en el programa GNC. No hay diferencias en la mejora de esos niveles entre los estudiantes norteamericanos y los españoles. En el segundo artículo, se incluyen los resultados que muestran un aumento significativo en los niveles de autoeficacia general en los estudiantes tras su participación en el programa GNC. También se observa que no existen diferencias entre los niveles de autoeficacia en función de las características demográficas (específicamente año de estudios, nacionalidad y participación previa en programas académicos internacionales), ni antes ni después de la participación del programa.

Como conclusión, se puede afirmar que el uso de un programa de internacionalización en casa que combina un intercambio virtual y una experiencia basada en simulación clínica internacional tiene un impacto positivo en los estudiantes participantes, en concreto, en su inteligencia cultural y en su autoeficacia general.

La mejora de la inteligencia cultural y de sus cuatro dimensiones contribuye a que los profesionales de enfermería puedan trabajar de forma efectiva en situaciones culturalmente diversas, no solo respecto a la cultura de los pacientes, sino también de sus familiares y a su integración en equipos de trabajo. Estas situaciones pueden ocurrir y, de hecho, ocurren cada vez más frecuentemente en los propios entornos locales de los profesionales de enfermería, por lo que no solo se ven beneficiados los estudiantes que pretendan trabajar en el extranjero, sino también los que desempeñarán su labor profesional en sus regiones de origen. La adquisición de estas competencias ha estado tradicionalmente relegada a un segundo plano y, en muchos casos, ha dependido exclusivamente de la participación de los estudiantes en programas de movilidad internacional.

Por otro lado, los resultados muestran que se produce un aumento de la autoeficacia general de los estudiantes, aunque este no fuera un objetivo específico

buscado por el programa. Tal y como se recoge en la literatura, este aumento puede favorecer que los estudiantes se enfrenten a situaciones estresantes de forma más eficaz, y gracias a la relación entre autoeficacia y bienestar, puede implicar un efecto positivo en su salud mental. Es importante señalar que la evidencia disponible sobre el aumento de la autoeficacia según el alumno progresa en sus estudios de enfermería es contradictoria y, por lo tanto, no se puede concluir que se produzca de forma natural a lo largo de los años. Actividades como el programa Global Nursing Care, que producen esa mejora, deben ser tenidas en cuenta.

El entorno controlado en ambos módulos del programa permite que el proceso de aprendizaje pueda ser supervisado, replicado y evaluado con relativa facilidad. Asimismo, el programa completo puede ser adaptado a diferentes instituciones, y a estudiantes con diferentes niveles de competencias enfermeras y lingüísticas. Aunque es necesario apoyo institucional para su implantación, el programa es accesible económicamente para la institución, y es inclusivo, sostenible con el medio ambiente y accesible para todos los estudiantes, independientemente de su capacidad para participar en programas de movilidad internacional.

Aunque la internacionalización en casa no debe considerarse como una alternativa a los programas de movilidad, sino como un continuo a lo largo de los planes de estudios, la integración de programas como el Global Nursing Care en los mismos puede ser beneficiosa para los estudiantes y es nuestra obligación como docentes que todos los estudiantes adquieran esas competencias para que, una vez egresados, ofrezcan cuidados de calidad a los pacientes y sus comunidades.

Este estudio cuenta con diversas limitaciones. El hecho de que el programa no pudiera ser incluido de forma obligatoria en los planes de estudios de las dos universidades y que todos los datos recogidos fuera autorreferidos por los estudiantes puede conllevar sesgos importantes. No es posible realizar un análisis estadístico con perspectiva de género, debido al muy reducido número de participantes masculinos. Además, los datos fueron recogidos al completar el programa completo, por lo que los resultados no pueden atribuirse específicamente al intercambio virtual o a la experiencia basada en simulación internacional. Por último, no se han recogido los mismos datos pasados unos meses o años desde la participación en el programa, por lo que no se puede determinar si este impacto perdura a lo largo del tiempo.

Es necesario seguir investigando sobre el impacto de este tipo de programas en otras variables, los factores que determinan la participación o no de los estudiantes en estos programas y comparar sus efectos con los que produce la participación en programas tradicionales de movilidad internacional.

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Acronyms and abbreviations

GNC (Global Nursing Care program)

COIL (Collaborative Online International Learning)

CQ (Cultural Intelligence)

IHE (Internationalization of Higher Education)

HEI (Higher Education Institution)

OECD (Organization for Economic Co-operation and Development)

UNESCO (United Nations Educational, Scientific and Cultural Organization)

EHEA (European Higher Education Area)

GPAa (Grade Point Averages)

IaH (Internationalization at Home)

EAIE (European Association for International Education)

SUNY (State University of New York)

OIE (Online Intercultural Exchange)

ANECA (National Quality Assessment and Accreditation Agency)

SBE (Simulation-based experiences)

INACSL (International Nursing Association for Clinical Simulation and Learning)

NMC (Nursing and Midwifery Council)

PART I

Introduction and objectives

Chapter 1. Introduction

Chapter 2. Theoretical Framework

Chapter 3. Objectives and Hypotheses

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CHAPTER 1

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1. INTRODUCTION

During the COVID-19 pandemic in 2020, the international mobility of higher education students decreased dramatically. As International Coordinator of the San Juan de Dios School of Nursing and Physiotherapy, Comillas Pontifical University, Spain, a major part of my daily work involved managing students' exchanges, preparing students to make the most of their stays abroad, and receiving and accompanying international students in different mobility programs. Suddenly, all this was at stake. I had to advise students on how to return to their countries and cancel expected mobilities (with the disappointment, sadness, and sense of lost opportunities that this involves).

This difficult situation reminded me of some innovative strategies I learned about at international conferences from colleagues from the Netherlands, Belgium, and the Scandinavian countries. These approaches aimed to offer all students the opportunity to internationalize themselves without needing to spend time abroad. I immediately decided to create a novel initiative that could offer my students this opportunity, which could not only help during turbulent times like the COVID-19 pandemic but also persist and make internationalization more equitable and accessible to all.

How could I connect my students with nursing students from other countries, and how could I make this connection purposeful? After some research, I decided that virtual exchange would be optimal for this objective. It would offer students the opportunity to connect with peers from abroad, work with them to achieve learning objectives, and learn from them about multiple facets of their culture and the nursing profession. This interaction would allow them to consider the nursing profession from different perspectives and encourage them to look beyond the Spanish borders. It sounded great, but something was still missing.

The internationalization of nursing students is peculiar. It cannot be compared with time abroad organized by my colleagues from other faculties, as most of the time that my students spend abroad is dedicated to clinical internships. These clinical placements are an unavoidable requisite to facilitate exchanges, and the process of arranging these mobility periods is often complicated. However, I was sure that this practical component of the experience made it even more significant for students. This

determination to include a practical component in my "at-home" project led me to another instrument, which I had already been using for some years: clinical simulation. I could replicate an international healthcare setting and create scenarios to offer students the opportunity to experience working abroad, at least briefly.

If students do not want to or cannot go abroad, let us bring "abroad" to them.

With the priceless help of my colleague and co-director of this dissertation, Cristino del Campo, an expert in clinical simulation in nursing, and the collaboration of the International Education team of West Coast University, USA, an institution that has been contributing to the internationalization of our students for several years, I designed and implemented the Global Nursing Care program. It consisted of a module based on virtual exchange and a module comprising international clinical simulation, linked by dynamics that would be part of both modules and conferred a logical timeline.

From my perspective as an international educator, the Global Nursing Care program was a well-rounded program that could contribute to the internationalization at home of nursing students. However, I felt the need to ascertain if the program really had an impact on the students. This urge to determine the program's effects on the personal and professional development of the students was the ultimate reason for the present study.

This thesis is presented as a compilation of publications. First, the theoretical framework is expounded. Then, the study's objectives, hypothesis, and methods are presented. The different publications are considered the results of this study and presented as such. Finally, the general conclusions unify the partial results presented in each publication.

Although I have tried not to repeat information contained in the publications, this was unavoidable for some content in the theoretical framework or the methods sections. To avoid redundancy, many details are only included in the publications, and specific references are included in the main text.

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CHAPTER 2

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2. THEORETICAL FRAMEWORK

2.1. THE INTERNATIONALIZATION OF HIGHER EDUCATION (IHE)

2.1.1. History and definition

Since the establishment of the first universities, students and professors have traveled across Europe in what could be called an "academic pilgrimage." Although this practice started much earlier, it became a common phenomenon in the 12th century (De Ridder-Symoens, 1992). A medieval European space emerged since a common religious identity and the Latin language allowed students and scholars to "continue their studies in an internationally renowned university and in disciplines not taught in their own schools" (De Ridder-Symoens, 1992).

According to De Ridder-Symoens (1992) and other authors, such as Altbach (1998), the university has always been global; however, others, such as De Wit and Merkx (2022), argue that the university could not be considered international until quite recently as nation-states did not exist in the Middle Ages. Most universities originated in the 18th and 19th centuries with a national orientation, and internationalization needed to be intentionally introduced (De Wit & Merkx, 2022).

In the first decades of the 16th century, students were mainly concerned with the cultural and intellectual advantages of educational travel. However, later, the Reformation and Counter-Reformation had a negative impact on mobility (De Wit & Merkx, 2022) that ended in the 17th and 18th centuries with the Grand Tour.

In the 20th century, mainly after World War II, international educational efforts became structured, with the creation of national agencies and scholarships, scientific and cultural agreements between countries, and institutional study abroad programs (De Wit & Merkx, 2022). Since the 1980s, the IHE has become a strategic process: "The international dimension and the position of higher education in the global arena are more prominent than ever in international, national, and institutional documents and mission statements." (De Wit, 2011a, p. 242), and higher education has become an important factor in the global economy.

Now, international, national, and regional university-level strategic plans reflect the centrality of the IHE (Knight & De Wit, 2018). According to De Wit et al. (2015, p. 29), the IHE can be defined as "the intentional process of integrating an international, intercultural or global dimension into the purpose, functions, and delivery of post-secondary education, in order to enhance the quality of education and research for all students and staff and to make a meaningful contribution to society."

The IHE takes different forms in different regions as economic, political, and sociocultural characteristics influence higher education and, consequently, its internationalization. The present study focuses on the issue's status in North America and Europe, and sometimes specifically in Spain, as the Global Nursing Care program was created and implemented in these places.

2.1.2. Rationale for internationalization

Higher education institutions (HEIs) implement internationalization for different reasons. Although this issue has mainly been focused on at the college and university levels so far, the development of national internationalization strategies is increasing (De Wit et al., 2021). Thus, the rationale for internationalizing a university stems from factors at the macro (environmental), meso (organizational), and micro (intra-organizational) levels (Seeber et al., 2016).

A survey conducted by the International Association of Universities in 2019 (Marinoni, 2019) considers nine rationales based on the literature:

1. Increased international awareness of and deeper engagement with global issues by students.
2. Enhanced internationalization of the curriculum.
3. Improved quality of teaching and learning.
4. Strengthened institutional research and knowledge production capacity.
5. Enhanced institutional prestige and profile.
6. Opportunity to benchmark and compare institutional performance within the context of international good practice.
7. Enhanced international cooperation and capacity building.
8. Increased international networking by faculty and researchers.

9.   Increased and diversified revenue generation.

In this survey, which counted responses from 907 HEIs from 126 countries, the most important expected benefit of internationalization at the global level was enhanced international cooperation and capacity building, except for North American institutions, where the most important benefit reported was "increased international awareness of and deeper engagement with global issues by students."

At the national level, the US Department of State, together with the Department of Education, issued a Joint Statement of Principles in Support of International Education (Department of State & Department of Education, 2021) that includes the main rationale for the support of internationalization: enhancing national security and the economy, benefitting American students and communities, strengthening US higher education and supporting research and innovation. In Spain, the Ministry of Education, Culture and Sports, in its Strategy for the Internationalization of Spanish Universities (Ministry of Education, Culture and Sports, 2016, p. 7), stated its main objective as "to consolidate a strong and internationally attractive university system that fosters incoming and outgoing mobility of the best students, faculty, researchers and administration staff, educational quality, the potential of the Spanish language in higher education, the internationalization of educational programs, and research, development and innovation activities, contributing to the improvement of the appeal and international competitiveness of Spain and to the socioeconomic development of its immediate environment based on knowledge."

Even if national or regional trends are identified, it is clear that every institution differs in its reasons for and approach to internationalization due to differing characteristics, limitations, objectives, and contexts.

2.1.3. Student mobility

In recent decades, access to higher education has been greater than ever before, and international student mobility has grown exponentially (OECD, 2023). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO), in 2021, there were 6.4 million international students around the world (UNESCO Institute

of Statistics, 2023), defined as "individuals who have physically crossed an international border between two countries with the objective to participate in educational activities in the country of destination" (UNESCO Institute for Statistics, n.d.). This definition includes students who move to another country to enroll in a complete higher education program of any study cycle, also known as degree mobile students, and study abroad students or credit mobile students, who spend only part of their studies in a foreign country in what is commonly known as an academic exchange.

There were 250,000 mobile students in 1965 (De Wit, 2011b), 2 million in 1998, and 5.4 million in 2017 (OECD, 2019). The world has become increasingly interconnected, impacting global higher education.

Although the most accepted definition of IHE, mentioned above, refers to a comprehensive vision of internationalization, in reality, most organizations still associate internationalization with the mobility of students, scholars, or programs (De Wit, 2011c). Thus, in recent decades, many initiatives have helped foster student mobility. Article 126 of the Maastricht Treaty states that Community action shall be aimed at, among others, encouraging the mobility of students and teachers (European Union, 1992). The creation of the European Higher Education Area (EHEA)in 1999 was a determinant of the IHE in Europe, with the promotion of mobility being one of its fundamental objectives (European Ministers of Education, 1999), as well as the recognition of qualifications from periods of study abroad. Furthermore, in 2009, student mobility was defined as the hallmark of the EHEA (European Commission, 2009).

The benefits of international student mobility are evident. Many studies have documented the impact of different forms of traditional internationalization on multiple variables regarding higher education students. The effect of the Erasmus+ program on a wide range of competencies and cross-sectional skills, especially those related to employability and social cohesion, as well as on the personality, attitudes, and behaviors of students, has been widely documented (European Commission, 2014, 2018). According to the results of Varela's meta-analysis, studying abroad yields benefits for learning outcomes linked to knowledge acquisition, attitudes and motivations, skills, and behavioral capabilities (Varela, 2017). Dwyer (2004) and Roy et al. (2019) showed the impact of studying abroad on the use of a foreign language, academic success, intercultural development, global mindedness, career choices and success, perceived employability, and personal growth, including confidence, self-reliance, and maturity.

The impact of studying abroad on cultural competence or similar constructs has also been thoroughly studied, both from general and discipline-specific perspectives (Haas, 2018; Iskhakova & Bradly, 2022). However, the impact of studying abroad on graduation rates and grade point averages (GPAs) is not as clear. Bhatt et al. (2022) and Cardwell (2020) found a positive relationship between a period of study abroad and an improvement in graduation rates and GPAs at graduation, while Nwosu and Wiley (2022) reported a negative impact.

Although scarcely studied, some authors have raised questions about the negative impact of study abroad programs on students and host communities. Besides their impact on climate, which is discussed later in this introduction, Schroeder et al. (2009) suggest that the impact on host communities of short-term study abroad experiences may be similar to that of tourism, with a negative effect on the environment, causing economic inequalities, exclusion, and problems due to misbehavior. Other authors warn about various risks, such as cultural imperialism, culture shock, harassment, sickness, crime, homesickness, and ethical challenges (Davey, 2023). A systematic review by Aresi et al. (2016) concluded that students taking part in an international mobility program might be at higher risk of alcohol and drug abuse. Petzold and Peter (2015) warned that studying abroad has become a norm that can reproduce social classes and lead to the emergence of new social inequalities. Evidence also shows that traditional study abroad programs replicate the social disadvantages found in local access to higher education, with ethnic minorities and students from low-income backgrounds (European Commission, 2018; Lörz et al., 2016; Souto-Otero et al., 2013), as well as students with different disabilities (Heirweg et al., 2020), being underrepresented in such programs.

Nevertheless, this association of internationalization with student mobility is widespread among HEIs. Even though the development of the IHE has skyrocketed during the last 25 years, most institutions focus primarily on "mobility and competition, rather than a broader approach incorporating internationalization to all" (De Wit & Jones, 2022). The same authors alert about the results of strategies focusing mainly on mobility, including inequality of access, opportunity, and outcomes. Mobility is important and necessary, but it is not enough to warrant inclusive internationalization (De Wit & Jones, 2018), and it should be considered a value-add to an internationalized curriculum rather than a goal in itself (Jones, 2020).

Numbers speak for themselves. Despite an exponential increase in recent decades, less than 3% of higher education students are internationally mobile (UNESCO Institute of Statistics, 2023). Traditional internationalization remains the privilege of an elite minority. As stated by De Wit (2019), the small number of mobile students implies that the employers' requirements for interculturally and internationally competent professionals are not met and prevent local contexts from contributing to solving global problems.

2.1.4. Internationalization of higher education in Europe

2.1.4.1. The Erasmus program

The practical implementation of European internationalization strategies was realized through the creation of the Erasmus program, the flagship of the IHE in the European Union. It was created in 1987 to offer university students the opportunity to study abroad and to promote cooperation between universities and HEIs across Europe (European Commission, 2024b). In its almost 40 years of history, it has expanded to cover a much wider area. Now, it includes different schemes for transnational cooperation and mobility in education (including higher education, vocational education and training, school education, and adult education), training, youth, and sport in Europe. In 2022, 73,000 organizations were involved in the program, with 1.2 million participants (learners and staff) in some kind of mobility program, higher education students being the most numerous (322,300 participants) (European Commission, 2023). Since the beginning of the program in 1987, it has promoted the mobility of 13.7 million participants.

The program includes non-European countries in some activities and, besides mobility, aims to enhance cooperation, quality, inclusion and equity, excellence, creativity, and innovation at the organizational and policy levels in the different fields covered (European Commission, 2024a). It has an overall budget of €26 billion for 2021–2027.

In recent years, a new project has been started under the European Education Area, namely the European Universities Initiative. It consists of transnational alliances of HEIs that develop long-term structural, strategic, and sustainable cooperations. Among these,

the creation of European inter-university campuses aims to offer seamless mobility opportunities for staff and students (European Education Area, n.d.).

Despite the efforts of the Erasmus+ program to increase inclusion and diversity, according to the Erasmus+ Impact Study in 2019, only 9% of students who participated in an Erasmus+ exchange reported facing economic obstacles during their higher education studies, and 5% had "culturally different" backgrounds, such as being immigrants, refugees, and national or ethnic minorities, or cultural inclusion difficulties (European Commission, 2018).

Moreover, the total proportion of higher education students participating in the program is still very far from the 2020 EU Ministers of Education's target of 20% mobile students (European Commission, 2009).

At the national level, European countries also formulate individual policies and strategies. In the last report issued by the Ministry of Education, Culture and Sports of Spain, four strategies were identified to progress IHE: to consolidate a highly internationalized system, to enhance the international appeal of Spanish universities, to promote international competitiveness, and to intensify international cooperation with other world regions (Ministry of Education, Culture and Sport, 2016).

According to the Ministry of Universities (2023), only 3.55% of the total number of Spanish students studied abroad in the academic year 2021–2022.

2.1.5. Internationalization of higher education in the US

Many different actors influence IHE in the US: federal and state governments, accrediting agencies, non-governmental organizations, and institutions issue policies, initiatives, and strategies related to IHE. However, the US lacks a national policy on internationalization, and there is little support from the governments, either at the federal or the state level (Craciun, 2022). According to Helms (2015), the creation of a comprehensive national policy that fosters the advancement of higher education internationalization seems unlikely due to the size, diversity, and decentralization of the higher education system. As stated by this author, "Higher education internationalization is more a by-product of these dispersed policies and initiatives, rather than an explicitly intended goal." (p. 5).

According to an American Council on Education survey (American Council on Education, 2022), only 17% of institutions received funding for internationalization from the federal government and 4% from state governments. However, higher education is very internationalized thanks to initiatives carried out by the large and powerful private higher education sector.

The American Council on Education has made the primary effort to create a national framework for the internationalization model. Its Model for Comprehensive Internationalization (American Council on Education, 2023) identifies interconnected areas that require attention and resources to advance internationalization.

The 2022 report (American Council on Education, 2022) shows that inbound and outbound mobility remains a top priority. However, while the US is the country with the highest number of international students, with more than a million in the academic year 2022–2023 (comprising 5.6% of the total number of higher education students), only 188,753 were credit mobile students, totaling less than 1% of the US higher education student population (Open Doors, 2023). Although this number was affected by the COVID-19 pandemic, the highest number of US students going to study abroad was 347,099 in the academic year 2017–2018, that is, less than 2% of US higher education students.

2.1.6. Challenges to IHE

Besides unequal access to mobility programs, new challenges have arisen during the last few years that have put traditional internationalization at stake. The global COVID-19 crisis in 2020 profoundly affected HEIs, especially their international activities (Marinoni et al., 2020; Martel, 2020; Rumbley, 2020a). The effects of COVID-19 and climate change are currently shaping the direction of IHE.

2.1.6.1.   The COVID-19 pandemic

In March 2020, due to the sudden emergence of the COVID-19 pandemic, many students had to come back home hastily, while others stayed in their destination countries despite being unable to attend in-person classes (Gabriels & Benke-Åberg, 2020) and

having to continue their study programs virtually (European University Association, 2020). The travel restrictions and social distancing measures led to a sharp fall in student mobility. During the first semester of the academic year 2020–2021, more than 50% of HEIs registered a drop in students participating in a mobility program in the EHEA (European Association for International Education, 2021). In 2020, the Erasmus+ program registered 60% fewer mobilities than the average of the previous years (from 2016 to 2019) (European Commission, 2023).

COVID-19-related restrictions resulted in a change in the plans and strategies of many institutions. According to the International Association of Universities Global Survey (Jensen et al., 2022), 31% of HEIs revised their internationalization strategy during the pandemic, and 43% discussed a revision of strategies. HEIs started paying attention to dimensions of internationalization other than mobility.

2.1.6.2. Climate change

In recent years, the attention paid to the impact of international higher education on the planet has grown. While Erasmus+ 2021–2027 names the fight against climate change among its priorities, promoting mobility in "green forward-looking domains" that "…engage participants in strategic areas for sustainable growth" and advocating for sustainable transport and environmentally responsible action, mobility remains the program's core (European Commission, 2024a). Most authors agree that traditional mobility is invaluable in opening minds and changing views, and, among other benefits, it can contribute to strengthening the engagement of individuals in fighting against the deterioration of the planet. However, at the same time, the carbon footprint from international travel is increasing (Dvorak et al., 2011; Shields, 2019). To minimize this problem, some authors propose drastic measures: De Wit and Altbach (2020, 2021) defend eliminating or drastically reducing short-term study abroad programs (of 8 weeks or less), which have become more popular than semester- and year-long programs, especially in the US. Others propose stimulating the use of green alternatives to air travel (Rumbley, 2020b), while all of them agree on advocating for boosting some form of IaH as it is a carbon-neutral form of internationalization that, at the same time, is accessible to all (American Council on Education, 2021; Shields & Lu, 2023).

2.2. INTERNATIONALIZATION AT HOME (IaH)

Universities are responsible for making internationalization accessible to all. As stated in the American Council on Education's report "The Future of International Exchanges in a Post-pandemic World" (American Council on Education, 2021), "expectations of educational quality and student demand in the marketplace also tell us that international educational opportunities need to be more environmentally sustainable, more accessible, and equity-minded." In the last decades, more attention has been paid to the internationalization of non-mobile students. Several movements emerged at the turn of the century in different locations: in 1999, in Malmö, Sweden, the Internationalization at Home (IaH) movement was born (Crowther et al., 2000), while in the United Kingdom and Australia, a similar movement asked for attention to the "internationalization of the curriculum." Likewise, in the US, the concepts of "internationalization of the campus" and "comprehensive internationalization" started to gain traction in university strategies. From the beginning, IaH has rested on two fundamental pillars (Wächter, 2003): "an understanding of internationalization that goes beyond mobility and an emphasis on learning and teaching in culturally diverse settings." As Jones and De Wit (2021) note, a socially responsible approach to IHE implies paying greater attention to the internationalization of the curriculum at home.

Internationalization at home is defined as "the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments" (Beelen & Jones, 2015). Due to its similarity with other movements and its prevalence in Europe, this term is the most used in the present work. The core of IaH is the internationalization of learning outcomes, educational tools, and assessment (Beelen & Jones, 2015) without being simply focused on activities. This strategy allows for changing the approach and focusing on what faculty and students do locally in their classes and communities instead of depending solely on sending students abroad to develop their international perspectives (Leask, 2015).

IaH is based on activities and tools that help students develop their international understanding and intercultural competencies, and it is the only way to ensure that every student can acquire them (Beelen, 2019; Knight, 2008). Many different national and international organizations have reported the need to consider this international dimension of every student, such as the European Parliament (De Wit et al., 2015), the

European Higher Education Area (2012), the European Commission (2013), the Spanish Ministry of Education, Culture and Sports (2016), and the American Council on Education (2023).

Internationalization at home is sometimes considered the opposite of traditional mobility; however, these concepts must be considered complementary (Beelen, 2017). This misconception displaces the key role that internationalization should have throughout the curriculum and perpetuates the belief that internationalization is equivalent to mobility. Internationalizing the curriculum should not prevent students from taking part in mobility experiences. Ideally, it should contribute to preparing students who want to go abroad to benefit from these experiences better (Jones, 2020).

In 2015, 64% of European HEIs declared carrying out IaH activities (Sursock, 2015). In the 5th IAU Global Survey, carried out before the pandemic, IaH was identified as a very important aspect of internationalization by almost all institutions, except for North American universities, one-third of which considered it unimportant (Marinoni, 2019). However, many institutions turned to IaH when COVID-19 emerged, showing that IaH is usually seen as the second-best alternative (Beelen, 2023). Although the modes of implementation of internationalization changed during the pandemic thanks to the introduction of alternative opportunities based on digital tools, most institutions did not change their internationalization strategies, even if they considered it during the pandemic, and the increased interest in IaH could be linked to a reduction in economic resources (Guidi et al., 2023).

It is important to note that many institutions that state implementing IaH are, in reality, falling prey to one of the common misconceptions surrounding IaH. According to Beelen (2019), the main misconceptions besides the one discussed above include confusing specific components of IaH with the concept as a whole, focusing on activities rather than learning outcomes, understanding IaH as an aim instead of an instrument to develop students' competencies, believing that IaH is equivalent to teaching in English, considering IaH to be preparation for mobility, and considering it equal to offering elective courses.

2.2.1. Internationalization at home and mainstream technology

At the start of the conceptualization of IaH, Crowther et al. (2000) highlighted the potential rise of internationalization opportunities with the information and communication technologies revolution. Years later, other authors, such as Leask (2015) and Beelen and Jones (2015), acknowledged the increasing importance of digital learning and online collaboration as tools to internationalize teaching and learning. Solutions based on technology could ensure equalitarian access to internationalization opportunities for all students. Although these technologies were already being used by many institutions, the COVID-19 crisis caused a digital transformation. The forced change from face-to-face to remote teaching and learning led to "strengthened digital infrastructure, improved collaboration through digital technology, and enhanced processes through increased use of digital procedures" (Guidi et al., 2023). This, in connection with the halt in traditional mobility, brought alternatives to student exchange, such as virtual exchange, to the forefront. According to the IAU Global Survey (Jensen et al., 2022), 81% of HEIs stated that virtual exchange and Collaborative Online International Learning (COIL) had increased in importance, and 58% declared that IaH had grown since the beginning of the pandemic. In the last survey from the European Association for International Education (EAIE), 58% of respondents who were staff in charge of internationalization stated that virtual internationalization activities require more attention for their institution to meet its internationalization goals over the next 3–5 years (Rumbley & Hoekstra-Selten, 2024).

2.2.1.1. Virtual exchange

There is confusion about the different terms related to virtual exchange and the different types of collaboration. Virtual exchange is defined as "technology-enabled, people-to-people education programs sustained over a period of time in which sustained communication and interaction take place between individuals or groups that are geographically separated, with the support of facilitators and/or educators" (European Union & EACEA, 2020). These collaborations have evolved and differ in terms of objectives, design, and forms of online interaction (O'Dowd & Beelen, 2021) and, now, "virtual exchange" is generally used as an umbrella term to refer to different kinds of online collaborative learning that engage students from different cultures.

Virtual exchange has been employed in foreign language education since the end of the 20th century, but it was rarely used (O'Dowd, 2021). In 2018, the European Commission implemented the Erasmus+ Virtual Exchange program to expand the scope of the Erasmus+ program through online collaboration. The general objective of the program was to "link young people, youth workers, youth organizations, students, and academics from Europe and the South Mediterranean through online learning activities in order to strengthen people-to-people contacts and intercultural dialogue" (European Union, 2023). Erasmus+ has included virtual exchange as one kind of mobility action supported by the program for the 2021–2027 period and specifies the possibility of carrying out blended mobility, understood as "a combination of physical mobility with a virtual component facilitating collaborative online learning exchange and teamwork" (European Commission, 2024a).

COIL is a specific approach to virtual exchange described by the State University of New York (SUNY) COIL Center in 2006 (SUNY Commons, 2021) as "a teaching and learning paradigm that promotes the development of intercultural competence across shared multicultural learning environments. Using Internet-based tools and innovative online pedagogies, COIL fosters meaningful exchanges between university-level teachers and students with peers in geographically distant locations and from different linguacultural backgrounds."

As early as 2013, De Wit noted that the term "COIL" included the four essential dimensions of virtual mobility: collaboration between teachers and students, technology and interaction, potential international dimensions, and integration into the learning process (De Wit, 2017). The American Council on Education advised faculty and institutions to connect classrooms using this methodology in 2016 (American Council on Education, 2016). However, the use of this methodology, like other tools used for IaH, significantly rose during the COVID-19 pandemic. The pandemic caused the increased use of virtual exchange and COIL (De Wit & Jones, 2022), just as universities quickly adapted to offer their services in a virtual environment. A survey conducted by the Stevens Initiative (2020), an organization that promotes the use of virtual exchange in the US and that is sponsored by the US Department of State, showed that more than 200,000 students took part in some kind of virtual exchange in 2020, and in their 2021 Survey of the Virtual Exchange Field, 69% of respondents indicated that their participation in virtual exchange expanded because of the pandemic (Stevens Initiative, 2021).

Other terms are also used for this kind of program, such as "telecollaboration" or Online Intercultural Exchange (OIE) (Jager et al., 2019), but all of them are based on the same premise: online collaboration between students during a maintained period that allows them to develop their global competencies. It is important to note what does not constitute virtual exchange: distance education, online learning, blended learning, or virtual mobility are not equivalent to virtual exchange, although virtual exchange can be incorporated as part of some of these modalities, as well as in physical classrooms (Satar, 2021).

As mentioned above, when referring to IaH in general, the use of virtual activities to connect students must not be seen only as an alternative to traditional mobility but as a complement. The American Council on Education, in its report "The Future of International Exchanges in a Post-pandemic World" (American Council on Education, 2021), remarks the importance of using these activities to begin creating relationships between students before the on-site period. This moderates the impact of the fact that periods abroad are increasingly shorter by allowing students to explore and understand the host country's culture, all without raising the cost of the experience and the burden of family or work responsibilities.

Virtual exchange has proven effective in improving several learning outcomes in higher education students. Its impact on foreign language learning, intercultural competence/skills development, and peacebuilding is reported in the literature (Commander et al., 2022; Hackett et al., 2023; Naicker et al., 2022; Vahed & Rodriguez, 2021; Zak, 2021), as well as its effect on several cross-sectional competencies or "soft skills," such as digital competencies, problem-solving, teamwork, and flexibility (EVOLVE Project Team, 2020; Helm & van der Velden, 2020). The Erasmus+ Virtual Exchange impact report (Helm & van der Velden, 2020) showed that students learned to accept and/or respect different perspectives on global issues and built self-awareness and a better understanding of "how their own backgrounds, sociocultural context, and individual experiences can influence their perspectives." The same study showed a rise in students' self-esteem, curiosity, and openness to people from different backgrounds. The exchanges also promoted citizenship, freedom, tolerance, and non-discrimination (p. 55). Moreover, according to Lee et al. (2022a), participation in virtual exchange may increase the likelihood that students subsequently participate in traditional international mobility. Evidence of the positive impact of international virtual exchange on students'

success metrics (average GPA, first-year retention, and graduation rate) is also available (Lee et al., 2022b).

However, it is important to note that although the use of this tool fosters the internationalization of students in a more accessible and equitable form than traditional mobility programs, obstacles that need to be addressed to improve equity in virtual exchanges remain: different levels of foreign language competence, digitalization, and structural gaps in educational systems may hinder access to these methodologies by all students (O'Dowd, 2023).

2.3. INTERNATIONALIZATION OF NURSING STUDENTS

The internationalization of nursing studies began more than 50 years ago (McAuliffe & Cohen, 2005). Since 1980, the need to integrate an international approach into nursing curricula that prepares students to practice in increasingly diverse societies has been considered (Cotroneo et al., 1986).

The need to internationalize nurses is already known and recognized by multiple stakeholders. The International Council of Nurses (2013) recognizes the need to educate linguistically and culturally competent nursing professionals to provide quality care to patients, families, and communities. With more than 27 million nurses and midwives worldwide, accounting for almost 50% of the global health workforce (World Health Organization, 2020), nursing professionals have an essential role in the transformation needed to improve healthcare practice and policies, as well as cope with new challenges and opportunities, such as conflicts, pandemics, and migratory flows, that must be addressed through education (Allen & Ogilvie, 2004; Charles & Plager, 2015; Kulbok et al., 2012).

Nursing professionals provide a wide range of public health and care services at all levels of healthcare. They increasingly care for chronically ill patients and rising populations of migrants, and they are migrating themselves. The number of foreign-born nurses more than doubled between 2000/01 and 2015/16, with an average share of 16% in the OECD area (Socha-Dietrich & Dumont, 2021).

The American Association of Colleges of Nursing (2021) included several competencies related to the intercultural sphere of care among the Core Competencies for

Professional Nursing Education for entry-level professional nursing education or advanced-level nursing education, including participation in the implementation of socio-cultural and linguistically responsive interventions, the use of culturally and linguistically responsive communication strategies, the demonstration of cultural sensitivity and humility in practice, and the structuration of the practice environment to facilitate care that is culturally and linguistically appropriate.

In a recent review of the expected competencies of undergraduate nursing students or newly graduated nurses, Purabdollah et al. (2023) identified, inside the expected competency called "individualized care," the sub-theme of cultural humility. According to their results, six studies emphasized that "newly graduated nurses need to possess knowledge, awareness, and cultural humility to show respect for the cultural context, values, and beliefs of the patient and to assess the care needs and concerns of patients from different cultures."

The notion of internationalization in nursing tends to focus on the intercultural dimension. This is also noted by Kain (2015), who argues that it may be a characteristic of the nursing profession. This aim to provide culturally competent care has been studied and defended by multiple nursing theorists who have focused their models and theories on transcultural nursing (Campinha-Bacote, 1999; Giger et al., 2007; Leininger, 1995; Purnell & Paulanka, 1998). However, some authors and initiatives also contemplate the international and global dimensions of the nursing profession, not just intercultural competence. In Spain, the National Quality Assessment and Accreditation Agency (ANECA) included the competencies "ability to work in an international context," "appreciation of diversity and multiculturality," and "knowledge of cultures and traditions from other countries" in the "White paper on the Bachelor's Degree in Nursing" (Agencia Nacional de Evaluación de la Calidad y Acreditación, 2005) that numerous universities used as a reference to design their nursing curricula. This guide was elaborated by consulting nursing professionals, employers, and academics, taking as a basis the Tuning Project (González & Wagenaar, 2003), a European initiative that identified the most important generic competencies that higher education students must achieve. In the UK, the Nursing and Midwifery Council (2024) established that at the point of registration, the registered nurse will be able to "provide and promote non-discriminatory, person-centered and sensitive care at all times, reflecting on people's values and beliefs, diverse backgrounds, cultural characteristics, language requirements, and needs and preferences,

taking account of any need for adjustments" (Nursing and Midwifery Council, 2024, p. 12).

2.3.1. Traditional internationalization in nursing

The impact of study abroad on nursing students has been widely documented in many studies and systematic reviews. Most authors have studied the effects of studying abroad on cultural competence or similar constructs, such as cultural awareness (Browne et al., 2015; Edmonds, 2012; Kokko, 2011; Kulbok et al., 2012; Matthews et al., 2021). Besides the well-known effect of these programs on cultural competencies, the participation of nursing students in different kinds of mobility experiences has shown effectiveness in providing students with a global perspective of healthcare (Browne et al., 2015; Edmonds, 2012), including knowledge about other healthcare systems, health problems, and nursing practices in other countries (Bagnasco et al., 2020; Kulbok et al., 2012). In a study by Baernholdt et al. (2013), participants considered that they had gained creativity and openness in their nursing practice. Evidence also suggests that studying abroad is useful in the translation of theory to practice (Browne et al., 2015), personal growth (Browne et al., 2015; Edmonds, 2012; Kelleher, 2013; Kokko, 2011), the development of critical thinking (Edmonds, 2012), self-perception of personal and professional development, communication abilities, self-reliance and self-confidence (Kelleher, 2013; Kokko, 2011; Nielsen et al., 2020; Tuncer Unver et al., 2021), self-efficacy, adaptation to unknown environments, enhanced ability to connect with others through social networks (Kelleher, 2013), ability to make decisions and solve problems (Edmonds, 2012; Kokko, 2011), and tolerance and willingness to work globally (Kokko, 2011). In a study by Nilsson et al. (2014), students reported that their nursing competence improved after an international experience, understanding it as a group of competencies considered essential to providing high-quality and safe care by society, the healthcare sector, and nursing professionals. Some students reported the benefit of identifying differences in higher education systems and curricula (Siles Gonzalez et al., 2016) and the opportunity to learn about new possibilities for interdisciplinary collaboration (Gilliland et al., 2016).

Nursing students have also encountered challenges and problems during their experiences abroad, including difficulties communicating in a foreign language (Brown

et al., 2016; Browne et al., 2015; Kokko, 2011; Kulbok et al., 2012; Tjoflåt et al., 2017; Tuncer Unver et al., 2021), anxiety, a sense of insecurity and stress due to not knowing the working routines (Jenkins et al., 2011; Siles Gonzalez et al., 2016), the social differences, inequalities, and poverty observed in some host countries, as well as different cultural values (Kokko, 2011; Kulbok et al., 2012). In some cases, students have also expressed worries about personal security and their capacity to positively contribute to the local community (Browne et al., 2015; Caldwell & Purtzer, 2015).

Culture shock is also a topic discussed in some of the reviewed studies. In studies by Jenkins et al. (2011), Ulvund and Mordal (2017), and Tuncer Unver (2021), participants reported experiencing culture shock when they arrived in the destination country. However, this quickly disappeared in most cases. Jenkins et al. (2011) define this shock as the pressure experienced when students must adapt their nursing skills and knowledge to meet the demands of practice in another culture and society. Students may feel frustrated at being unable to meet patients' needs (Curtin et al., 2015). The perceived differences in healthcare systems and nursing cultures, which are included as a benefit in the previous section, are experienced as stressful by some students until adaptation and a change in attitudes and beliefs occur (Baernholdt et al., 2013; Murray, 2015). Likewise, Gower et al. (2017) found that some students found it difficult to return to their routine activities as their values had changed following their experiences during an international stay in a country with fewer resources than their country of origin.

Nursing students and institutions have always faced several obstacles when arranging and participating in international mobility. Financial barriers, a low level of foreign language competence, separation from family, job obligations, and concerns about family-related responsibilities are among the most prominent challenges (Brown et al., 2016; Kelleher et al., 2016; Kent-Wilkinson et al., 2015). Likewise, the specific characteristics of nursing curricula, especially the lack of flexibility that sometimes entails a delay in finishing the studies, the differences in nursing programs and clinical placements between countries, and a significant workload regarding clinical practice and legal issues, make widespread participation even more difficult (Dobrowolska et al., 2015; Mill et al., 2005; Quintana Zavala & Paravic Klijn, 2011).

Data about the number of nursing students that take part in study abroad programs are scarce, but the available numbers are not promising: according to the Council of Deans of Health (2017), in the UK, only 0.31% of nursing students participated in a mobility

program between 2015 and 2016. In 2011, a survey completed by 382 administrators of Bachelor's in Nursing programs in the US showed that only 23.3% of schools offered a semester study abroad opportunity, and 76% of these schools reported that only 0%–5% of students participated in the semester abroad program. Data from the two institutions where this dissertation was developed, Universidad Pontificia Comillas and West Coast University, showed similar numbers: in the first institution, nursing students are not allowed to study abroad for longer than 3 months; in the second, only short-term programs of 2 weeks are offered to students. In both institutions, only around 2% and 3% of eligible students, respectively, participated in international mobility programs in the last decade.

2.3.2. Internationalization at home in nursing

Most studies addressing IaH and nursing students focus on different kinds of virtual exchange and their impact on cultural competencies or similar constructs. The reported benefits include the development of cultural awareness, international social responsibility and cultural sensitivity (Kor et al., 2022; Leung et al., 2020), the understanding of nursing as a universal and recognizable practice (Carlson et al., 2017), an improved understanding of healthcare systems, the reconsideration of own attitudes, self-perceived improvements in own cultural competence and sensibility, the enhancement of an international nursing perspective, and the understanding of global health problems (Carlson et al., 2017; Chan & Nyback, 2015; Gemmell et al., 2015; Leung et al., 2020; Procter et al., 2017).

Besides cultural aspects, most publications describe the creation of specific programs or initiatives and provide advice to internationalize nursing curricula, generally based on international virtual collaborations, but do not offer evidence of their impact (Davey, 2023; Kunaviktikul & Turale, 2020; Law & Muir, 2006).

No numbers are available about the use of IaH strategies in nursing education programs.

2.4. CLINICAL SIMULATION IN NURSING

2.4.1. Definition

The Healthcare Simulation Dictionary of the Society for Simulation in Healthcare (Lioce et al., 2020) includes several definitions of the word "simulation." Among them, we highlight the following two:

- A technique that creates a situation or environment to allow persons to experience a representation of a real event for practice, learning, evaluation, testing, or gaining an understanding of systems or human actions.
- An educational technique that replaces or amplifies real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner (Gaba, 2004).

When addressing healthcare simulation specifically, the authors understand it as follows:

- A technique that creates a situation or environment to allow persons to experience a representation of a real healthcare event for practice, learning, evaluation, testing, or gaining an understanding of systems or human actions (Society for Simulation in Healthcare).
- The application of a simulation activity to training, assessment, research, or systems integration toward patient safety (Society for Simulation in Healthcare).

The term "patient safety" has been included in the last definition as it is a key aspect of healthcare or clinical simulation. Simulation-based activities enable students to progress from novice to expert in a controlled environment without exposing patients to risks (Lopez et al., 2024). At the same time, simulation allows faculty to manage the experiences that every student is exposed to, thereby allowing accurate assessments of each student's competency by eliminating the variability of clinical placements. Simulation also facilitates training in skills needed to manage infrequent situations, such as cardio-respiratory arrests. Students can also practice competencies that, due to their student role, they are not likely to apply in clinical settings, such as leadership or task delegation. Moreover, simulation scenarios are repeatable until an optimal degree of training is achieved.

2.4.2. History

The first steps in simulation development were not taken in healthcare disciplines. Although some authors consider healthcare simulation to have begun thousands of years ago based on stone carvings of the human form and clay livers (Bienstock & Heuer, 2022), in the modern era, it was aviation and the military that used simulation to train pilots and personnel in technical and non-technical skills (Aebersold, 2016). Meanwhile, little but meaningful progress was also made in the nursing discipline. For example, in 1911, Martha Jenkins Chase created a doll to train nurses in dressing, turning, and transferring patients and administering medication (Aebersold, 2016), and some decades later, in the 1940s, the US Army started to work on healthcare simulation, using manikins to teach medical corpsmen emergency techniques (Bienstock & Heuer, 2022).

The 1960s were very fruitful regarding simulator development. In 1960, Resusci Anne, a simulator created to train breathing resuscitation techniques, was launched by Laerdal. In 1966, a sophisticated manikin designed to train anesthesiologic techniques, called SimOne, was born. It could breathe and blink, had a heartbeat, a pulse, blood pressure, and mouth movements, and responded to drugs. In 1968, the first cardiology patient simulator, Harvey, was developed (Cooper & Taqueti, 2008).

In the 1980s and 1990s, the first high-tech simulators in the health sciences were developed by different simulation companies, and simulation as a learning method became part of the curriculum of anesthesiologists and nurses. They started to undergo training in coordination, communication, teamwork, and leadership with the help of advanced simulators (Karlsaune et al., 2022)

The development of simulation in the 21st century has been exponential, regarding not only technology but also the embedding of simulation into the curricula of many healthcare disciplines and its use in continuous education. Nowadays, this methodology includes multiple technologies and modalities and is regulated by different agencies, boards, and associations.

2.4.3. Simulation modalities or simulated learning methods

Now, simulation can be used as a learning tool in multiple ways. The principles, pedagogies, and educational strategies used in healthcare simulation include the following (Lioce et al., 2020):

- Case-based learning: Written and oral presentations that present and review clinical scenarios. They do not involve hands-on learning.

- Computer-based simulation: The modeling of real-life processes with inputs and outputs exclusively confined to a computer. Subsets of computer-based simulation include virtual patients, virtual reality task trainers, and immersive virtual reality simulation.

- Task trainer: A model that represents a part or region of the human body. Such devices may use mechanical or electronic interfaces to teach and give feedback on manual skills such as IV insertion, ultrasound scanning, and suturing. Task trainers are generally used to support procedural skills training; however, they can be used in conjunction with other learning technologies to create integrated clinical situations (Australian Society for Simulation in Healthcare).

- Hybrid simulation: The union of two or more simulation modalities to provide a more realistic experience, for example, when a task trainer is affixed to a standardized or simulated patient.

- Integrated procedural training (psychomotor focus): A series of discrete tasks that are conducted simultaneously or in sequence to form a complex clinical task.

- Integrated procedural training (whole procedure): Task training integrated with role play (actors) to enable procedural and communication tasks to be practiced simultaneously.

- Mixed simulation: The use of a variety of different simulation modalities; this is distinct from hybrid simulation in that it is not characterized by the use of one type of simulation to enhance another but rather the use of multiple types of simulation in the same scenario or place.

- Simulation/scenario-based learning: Learners interact with people, simulators, computers, or task trainers to accomplish learning goals that represent their

real-world responsibilities. The environment may resemble the workplace. Depending on the learning objectives, realism can be built into the equipment or the environment.

- Standardized/simulated patient: An individual trained to portray a patient with a specific condition in a realistic, standardized, and repeatable way, where the portrayal/presentation varies based only on learner performance; this strict standardization of performance in a simulated session can distinguish standardized patients from simulated patients.

- Debriefing: Encourages reflective thinking among participants and provides feedback about their performance while various aspects of the completed simulation are discussed.

2.4.4. Standards of best practice

Simulation-based experiences (SBE) must not be improvised. They should be created, implemented, and evaluated according to evidence-based best practices. The International Nursing Association for Clinical Simulation and Learning (INACSL) Healthcare Simulation Standards of Best PracticeTM are widely accepted by nursing simulation professionals. They were designed by the INACSL in 2011 and updated in 2021 (Watts et al., 2021). Their objective is "to advance the science of simulation, share best practices, and provide evidence-based guidelines for the practice and development of a comprehensive standard of practice" (INACSL, 2024).

They consist of the following individual standards: Professional Development, Prebriefing: Preparation and Briefing, Simulation Design, Facilitation, The Debriefing Process, Operations, Outcomes and Objectives, Professional Integrity, Sim-Enhanced Interprofessional Education, Evaluation of Learning and Performance, and the Simulation Glossary. Each one aspires to serve as a guide to professionals and institutions.

According to the Simulation Design Standard (INACSL Standards Committee et al., 2021, p. 15), 11 criteria are necessary to meet it:

1. Design SBEs in consultation with content experts and simulationists knowledgeable in best practices in simulation education, pedagogy, and practice.

2. Perform a needs assessment to provide foundational evidence of the need for a well-designed SBE.

3. Construct measurable objectives that build upon the learner's foundational knowledge.

4. Build the SBE to align the modality with the objectives.

5. Design a scenario, case, or activity to provide the context for the SBE.

6. Use various types of fidelity to create the required perception of realism.

7. Plan a learner-centered facilitative approach driven by the objectives, learners' knowledge and level of experience, and expected outcomes.

8. Create a prebriefing plan that includes preparation materials and briefing to guide participant success in the SBE.

9. Create a debriefing or feedback session and/or a guided reflection exercise to follow the SBE.

10. Develop a plan for the evaluation of the learner and the SBE.

11. Pilot test SBEs before full implementation.

One element required to meet Criterion 4 is to "choose a theoretical and/or conceptual framework based on the identified purpose and the targeted learners" (INACSL Standards Committee et al., 2021, p. 16).

According to Lavoie et al. (2018), the most used learning theories cited in the literature to assess nursing competencies in simulations are the National League for Nursing/Jeffries Simulation Theory, Kolb's Experiential Learning Theory, and Bandura's Social Cognitive Theory.

2.4.5. Kolb's Experiential Learning Theory and simulation

Kolb (1984) defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience." His Experiential Learning Theory (Kolb, 1984), based on the work of Dewey, Lewin, and Piaget, is focused on creating learning experiences that allow learners to build upon their current knowledge and experience. It includes six propositions (Kolb & Kolb, 2009):

1. Learning is best conceived as a process, not in terms of outcomes.

2. All learning is re-learning.

3. Learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world.

4. Learning is a holistic process of adaptation.

5. Learning results from synergetic transactions between the person and the environment.

6. Learning is the process of creating knowledge.

It is typically represented by a four-stage learning cycle: (1) having a concrete experience; (2) observation of and reflection on that experience; (3) abstract conceptualization (analysis) and generalization (conclusions); and (4) active experimentation, that is, using those conclusions to test the hypotheses in futures situations, which will result in new experiences. In the first and second stages, learners acquire new knowledge. The third and fourth stages occur when learners transform and incorporate new knowledge into their behaviors.

If we apply this cycle to the simulation process, we can see that when learners take part in a simulation scenario, they live a concrete experience (Stage 1). After the scenario, in the debriefing, that is, the "session after a simulation event where educators/instructors/facilitators and learners re-examine the simulation experience for the purpose of moving toward assimilation and accommodation of learning to future situations" (Lioce et al., 2020), they reflect on the scenario and analyze their thought processes and actions (Stage 2), drawing conclusions about what they will do when living a similar experience in the future (Stage 3). Subsequently, the learner will use this new knowledge, skill, or attitude in a future simulated or real experience (Stage 4).

2.4.6. Benefits of simulation

Evidence shows that healthcare simulation provides multiple benefits to nursing students. In an umbrella systematic review by Cant and Cooper (2017), which included 13 systematic reviews and 12 integrative reviews, the following key learning outcomes were identified: learning of clinical and non-clinical knowledge and skills acquisition; development of critical thinking; improvement of psychomotor skills; improvement of perceptions of self-efficacy, confidence, clinical judgment, and competence; and strong student satisfaction with simulation. Evidence also shows that SBEs that include

intercultural or international aspects are useful for developing variables related to the intercultural competence of nursing students (Chae et al., 2021; Foronda et al., 2018; Ozkara San, 2015) and improving students' communication competence in a second language (Karaçay et al., 2022; King et al., 2017).

However, the benefits of simulation go further. Now, there is a scarcity of nursing instructors and clinical placement sites that, at least in the US, has a direct effect on the ability to increase enrollment in nursing programs. According to an American Association of Colleges of Nursing report (American Association of Colleges of Nursing, 2024), in 2023, US nursing schools turned away 65,766 qualified applications from undergraduate and graduate nursing programs, with a shortage of clinical sites being the most frequently reported reason, followed by a lack of faculty and preceptors. This scarcity of faculty and preceptors is thought to be one of the causes of the clinical placement shortage, besides healthcare system constraints, patient safety requirements, and staffing models (Hayden et al., 2014b; Jeffries et al., 2015).

In 2014, the National Simulation Study demonstrated that up to 50% of clinical hours could be effectively substituted for simulation in undergraduate programs (Hayden et al., 2014a). High-quality simulation experiences produce comparable end-of-program educational outcomes and new graduates ready for clinical practice. This study led to changes in regulation. In 2019, a study by Bradley et al. that explored the regulation of simulation in nursing education in the US showed that 13 Boards of Nursing (BONs) allowed up to 50% of clinical hours to be replaced with simulation, two BONs allowed up to 30%, and seven BONs up to 25% (Bradley et al., 2019). In the UK, regulation about the number of hours of clinical practice that can be replaced by simulation was introduced during the COVID-19 pandemic. The Nursing and Midwifery Council (NMC) started to allow for up to 600 hours of the required 2300 clinical placement hours to be replaced by simulation-based learning and permanently adopted the standards in 2023. These measures were supported by a systematic review and meta-analysis undertaken by the Council of Deans of Health in 2024, which indicated that SBEs are more effective than traditional clinical education in improving various outcomes (such as knowledge, clinical judgment, critical thinking, and measures of clinical competencies) and that the combination of simulation and clinical practice is also more effective in improving outcomes compared to clinical education alone (Harrison et al., 2024).

Furthermore, the World Health Organization (World Health Organization, 2018) recommends using SBEs to improve and ensure patient safety. Nursing students who care for patients without developing the appropriate and prerequisite clinical competencies can pose various risks to patient safety.

In the European Union, the type and duration of nursing programs, the number of credits awarded, and the kind of institutions that provide the education vary greatly, but all programs are implemented following the same regulation (European Parliament and the Council of the European Union, 2013). However, although simulation in nursing education is part of the curriculum in most undergraduate nursing programs, and this directive states the minimum number of clinical practices (2300 hours), it does not contemplate any substitution by simulation hours (Chabrera et al., 2021).

Besides its direct impact on students and the possibility of clinical hour substitution, the most important effect of simulation is that it ultimately benefits patients. Although robust research on the effects of nursing simulation on patient outcomes is lacking, a review by El Hussein et al. (2022) suggested that it is an effective method for improving the clinical performance of nurses, with results reflecting an improvement in patient safety practices, mainly those related to safe injection practices, neurological assessments, and nursing management of continuous renal replacement therapy and medication safety, as well as actual patient outcomes.

2.4.7. Disadvantages of simulation

Despite the numerous benefits of using simulation-based activities in nursing education, some disadvantages and limitations have also been identified in the literature:

- Lack of reality: Manikins and instruments can never match humans completely. This could lead to disbelief and make it impossible to approach a patient as a biopsychosocial human being (Koukourikos et al., 2021; Krishnan et al., 2017).

- Defective learning: Poorly designed SBEs can encourage negative learning and promote shortcuts and artificial communication skills (Krishnan et al., 2017). Researchers also suggest that professional socialization and

communication are acquired mainly during clinical experiences and that simulation has strong limitations in this area (Larue et al., 2015).

- Stress and anxiety: For some students, simulation-based activities are a source of anxiety and can even interfere with learning (Al-Ghareeb et al., 2017; Cantrell et al., 2017; Foronda et al., 2013). However, a recent meta-analysis suggests that simulation activities evoke fewer feelings of anxiety in nursing students than conventional teaching strategies (Oliveira Silva et al., 2022).

- Attitude of learners: If there is disbelief, students can show disengagement and unconcerned behaviors. Some students show hypervigilant behaviors because they know that an event is about to occur (Koukourikos et al., 2021; Krishnan et al., 2017).

- Cost: Simulators and simulation infrastructure are expensive and high-maintenance (Koukourikos et al., 2021; Krishnan et al., 2017; Larue et al., 2015). A 2006 study estimated that a simulation center set-up costed more than $875,000, with fixed costs per year of more than $360,000 and variable costs of $311 per course hour (McIntosh et al., 2006). More recent data are unavailable, but it is reasonable to assume that these numbers are much higher now, almost 20 years later.

- Time: Especially in countries where no substitution of clinical hours is allowed, the introduction of simulation to already burdened curricula may be difficult (Krishnan et al., 2017).

- Infrastructure and staff: Trained staff is necessary, and a low student-to-instructor ratio is needed, which poses challenges related to human resources, time, and costs (Krishnan et al., 2017).

2.5. THE GLOBAL NURSING CARE PROGRAM

As mentioned in the description of the reasons for conducting this research, I decided to create the Global Nursing Care (GNC) program due to the COVID-19 pandemic. With the collaboration of my doctoral thesis directors and the San Juan de Dios School of Nursing and Physiotherapy, as well as my colleagues from West Coast University, the program was realized in 2022.
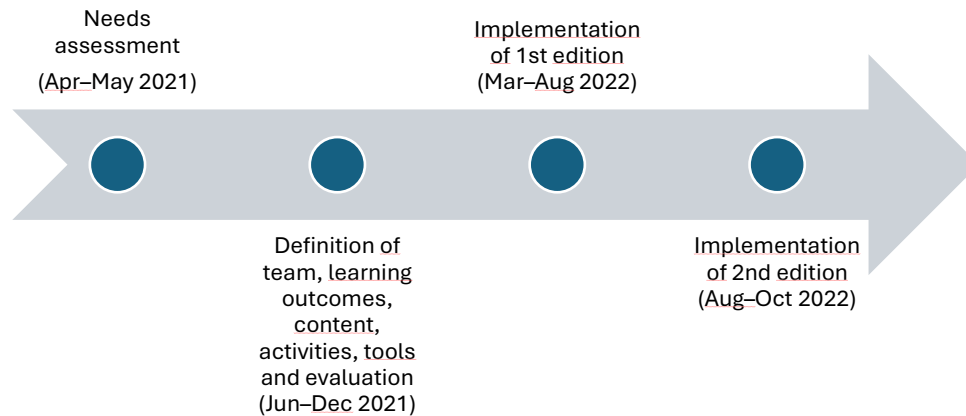
A timeline of the main steps is shown in Figure 1.

Figure 1. Global Nursing Care Program timeline.

The program was created using a constructivist, collaborative, and experiential learning approach. It consisted of a combination of virtual exchange, which followed the premises of the COIL approach developed by SUNY (SUNY Commons, 2021), and a new approach to simulation, created by us and called "international clinical simulation," outlined below.

The selection of these methodologies aimed to provide students with an activity that replicated international exchange as far as possible without the need to travel abroad. The virtual exchange component allowed the participants to interact with colleagues from other cultures, work collaboratively, create new relationships, gain knowledge about other cultures, develop skills to face intercultural conflicts, and understand different healthcare systems and nurses' roles within them. On the other hand, the international clinical simulation allowed participants to apply their learnings and to experience working as a nurse in a foreign country as realistically as possible.

The program's main objective was to develop the intercultural and international competencies of its participants.

Details about the specific objectives and the creation and implementation of the GNC program can be found in the publications included in this dissertation's Results section. The topics, methodologies, times, and tools used in the virtual exchange

component are described in Table 1 of the second publication. However, as only an outline of the international clinical simulation is included in the publications, a more detailed description is given below.

2.5.1. International clinical simulation

As mentioned in the section "Benefits of simulation," including intercultural components in SBEs can improve the intercultural competence of nursing students, as well as their communication competence in a second language. However, as part of the GNC program, we wanted to create a more comprehensive SBE that not only included a standardized patient from a different cultural background but also allowed students to experience working in an international context. With this aim, and following the Healthcare Simulation Standards of Best Practice developed by the International Nursing Association for Clinical Simulation and Learning (INACSL Standards Committee et al., 2021), we designed and implemented an SBE that included three simulation scenarios, all performed in an environment that replicated a clinical setting abroad as far as possible. Interactions with a patient, a relative, and a colleague in this international environment aimed to provide the students with an intercultural experience as well as an international one.

A description of the international clinical simulation implemented in the Global Nursing Care program can be found in Table 1.

Table 1. International clinical simulation outline.

International Clinical Simulation	Description	Comments
PREBRIEFING		
Preparation	Student handbook with: 1. General and specific objectives 2. Scenario synopsis	The self-evaluation questionnaire was considered a "ticket" to enter the experience.
	Readings: 1. Diabetes 2. How to measure glucose levels 3. How to inject insulin	
	Audiovisual materials: 1. Intercultural care presentation	
	Self-evaluation questionnaire	

Table 1 (continued). International clinical simulation outline.

International Clinical Simulation	Description	Comments
PREBRIEFING		

Briefing	1. Logistical factors, ground rules, and fictional contracts are set.
	2. A psychologically safe space is established.
	3. Structured orientation:
	  - Roles and expectations
	  - Objectives of each scenario
	  - Environment: equipment and standardized patients/persons	

SIMULATION SCENARIOS		

1. Patient care and education	Synopsis: A young patient recently diagnosed diabetes mellitus type 1 is referred to the diabetes outpatient office for education.
	
	Objectives:
	1. To conduct an assessment in an organized and systematic manner
	2. To perform appropriate patient education
		1. Besides the specific objectives of each scenario, two transversal objectives were set:
		  - To communicate with the patient/relative/worker in a manner that reflects cultural competence.
		  - To communicate in a second language, using any available resources if needed.

2. Intercultural conflict with a relative	Synopsis: The father of the patient seen in Scenario 1 inquiries about the disease and intends to apply an alternative treatment related to their cultural background. Objectives: 1. To assess the relative's knowledge of the patient's situation 2. To identify cultural conflicts 3. To adapt care provision to the patient's cultural practices and beliefs as far as possible	2. Scenarios were developed consecutively, always in the same order, following a logical timeline. 3. A debriefing was carried out at the end of each scenario. See the description below. The students were offered the opportunity to repeat the scenario after the debriefing and before continuing to the following scenario.
3. Interaction with a colleague	Synopsis: A new colleague from a different cultural background starts their shift. Objectives: 1. To write and communicate an effective nursing report 2. To collaborate with a colleague to solve a logistical issue of the service	4. The simulation lab/centers were designed to replicate an outpatient setting in a foreign country (a US hospital for Spanish students and a Spanish hospital for US students) regarding posters and signs, medications, computer software, and others.

Table 1 (continued). International clinical simulation outline.

International Clinical Simulation	Description	Comments
SIMULATION SCENARIOS		
		5. Standardized persons and patients with native/high language proficiency participated in each scenario. 6. Each scenario's progression was adapted to the participant's level of knowledge, skills, and attitudes, utilizing prompts and cues. 7. Students participated individually in each scenario.
DEBRIEFING		
Reactions/defusing phase	Emotions and reactions to each scenario were explored just after completion.	1. Standardized patients/persons participated in the description phase when necessary.
Description	The participant described the facts that took place in the scenario.	
Analysis	Using a Plus-Delta structure (Fanning & Gaba, 2007), the participant reflected on the experiences and gaps in knowledge, skills, or attitudes.	2. Elements from coaching were introduced in the debriefing, as proposed by Fernández-Ayuso et al. (2024).
Summary and application	Participants explored how to transfer their experiences to the real world.	3. The DASH instructor version was used by the facilitator to evaluate self-performance (Brett-Fleegler et al., 2012).
FINAL WRAP-UP	A final wrap-up was implemented after completing the three scenarios and their three debriefings. An overall recap of the SBE, general objectives, and insights were verbalized.	

2.6. CULTURAL INTELLIGENCE AND SELF-EFFICACY

The need to determine if the Global Nursing Care program impacted the participating students led us to select the two following variables: cultural intelligence (CQ) and self-efficacy. The rationale behind this decision was the need to determine, first, if the program's main objective, that is, to develop the intercultural and international competencies of the students, was being met. We selected CQ among multiple similar variables because we found that the model of Earley and Ang (2003), based on the multiple-loci framework of intelligence developed by Stenberg and Detterman (1986), allowed us to explore changes in both the total CQ and each of its four components: metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ. This variable has

been widely utilized in education, specifically in research related to international higher education.

Second, we wanted to explore if the program affected students' traits beyond cultural intelligence like periods of traditional mobility do, although this was not a specific objective considered in the creation of the program. We decided to study the program's impact on self-efficacy as evidence shows that it can be developed by both a period of study abroad and by clinical simulation without international components. Moreover, we consider self-efficacy a very important construct that affects nursing students' personal, academic, and professional scopes. In this case, we decided to follow Bandura's approach to the concept (Bandura, 1977) but with a focus on general self-efficacy as described by Schwarzer (2014).

A more detailed description of the variables can be found in the publications in the Results section.

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CHAPTER 3

</div>

3. OBJECTIVES AND HYPOTHESES

3.1. Objectives

3.1.1. Main objective

The main objective of this study was to analyze the extent to which an IaH program that combines virtual exchange and an international simulation impacts the CQ and general self-efficacy of nursing students.

3.1.2. Specific objectives

- To compare the total CQ and its four dimensions in the participating students before and after the IaH program.
- To compare the CQ between the participating students and a control group.
- To assess the gain in CQ in participating students according to their nationality.
- To compare the general self-efficacy of the participating students before and after the IaH program.
- To assess the general self-efficacy of the participating students according to their sociodemographic characteristics.

3.2. Hypotheses

- H1: Participation in an IaH program that combines virtual exchange and an international simulation improves the total CQ and its four dimensions in participants.
- H2: Participating students present a higher CQ after completing the IaH program than non-participating students (control group).
- H3: Participating students from different countries present different levels of improvement in the CQ as a result of their participation in the IaH program.
- H4: Participation in the IaH program improves general self-efficacy.

- H5: Participating students present different levels of self-efficacy according to their nationality, previous international academic experience, and year of studies.

PART II

Methodology

Chapter 4. Methods

CHAPTER 4

4. METHODS

4.1. Study Design and Participants

A quasi-experimental, analytical, and longitudinal study was designed. The intervention was the Global Nursing Care program, and the participants were recruited by convenience sampling among the students of the Bachelor's Degree in Nursing at West Coast University (USA) and the San Juan de Dios School of Nursing and Physiotherapy, Universidad Pontificia Comillas (Spain).

The program was offered to approximately 860 students (450 in Spain and 410 in the US). Participation in the program was voluntary, and 70 students enrolled (47 in Spain and 23 in the US). These were the GNC students. Two hundred and eighty-eight students who did not participate in the GNC program or any other international exchange during their higher education were recruited to the control group. Students from both groups belonged to the same cohorts.

An online survey, including a sociodemographic questionnaire and the measurement tools, was administered by faculty or staff from the international office to the GNC students before the program started (pre) and after completion (post). Control students answered the survey around the same time as the GNC cohort answered the post-intervention survey. Finally, 57 GNC students completed the pre-intervention and post-intervention surveys (81.42%), and 204 control students completed the post-intervention survey (70.83%).

4.2. Measures

An online instrument was created to measure the selected variables. It included a sociodemographic questionnaire created by the author, the Cultural Intelligence Scale (Van Dyne et al., 2008), and the Generalized Self-Efficacy Scale (Jerusalem & Schwarzer, 1992). The original versions in English were administered to the students from the US, and the Spanish versions of the CQS (Moyano et al., 2015) and the Generalized Self-Efficacy Scale adapted and translated into Spanish by Baessler and Schwarzer (1996) were administered to Spanish students.

Sociodemographic data included gender, nationality, year of studies, and previous participation in international academic experiences and were collected only as a baseline.

All the instruments had been validated and showed good psychometric properties in diverse studies, as described in the publications, where more detailed information about the instruments can also be found.

4.3. Study Stages

4.3.1. Pre-intervention phase (January 2021–March 2022)

1. Review of the literature and research project – the creation of the GNC program.

First, a review of the published evidence related to the main topics of this study was conducted, and a research project that included planning for the following steps was elaborated and approved by the Academic Commission of the doctorate program.

Simultaneously, the needs assessment from which the GNC program originated was conducted in both institutions, and the program was designed.

2. The study was reviewed and approved by the Ethics Committee of Comillas Pontifical University.
3. Just before the first edition of the GNC program started, the survey (pre) was administered to the first cohort of GNC students.

4.3.2. Intervention phase (March 2022–October 2022)

1. The first edition of the GNC program was implemented with the GNC students between March and August 2022, and the second edition between August and October 2022. When the first edition ended, post-intervention data were collected from GNC and control students. Before the second edition started, pre-intervention data were collected from GNC students.
2. The author of the study carried out an international research stay at West Coast University from June to August 2022 with the aim of collecting data.

3. In July 2022, the first publication, a book section describing the research project derived from participation in an international congress, was submitted and accepted.

4.3.3. *Post-intervention phase (October 2022–September 2024)*

1. Once the second edition of the GNC program finished, the post-intervention survey was administered to the GNC students and control students.

2. Data were analyzed from January 2023 to June 2023, and the second publication, an original article, was written and submitted.

3. In January 2024, that article was accepted and published.

4. From June 2023 to January 2024, the third publication, another original article, was written and submitted.

5. In August 2024, this article was accepted and published.

6. Simultaneously, the final text of this dissertation was written between August and September 2024.

4.4. Ethical Considerations

As mentioned in the previous sub-section, the study was reviewed and approved by the Ethics Committee of Comillas Pontifical University (determination 2022/1). Student participation in the program and the study was voluntary and did not impact their grades. In virtual exchange activities that included intercultural issues, students were advised about potential triggers and encouraged to talk to the facilitator in case of emotional discomfort to ensure psychological safety. In the international SBE, a psychologically safe space was created in the prebriefing, and emotional support was offered to students if needed after each debriefing.

At each data collection point, informed consent was obtained from the participants. Student responses were voluntary and anonymous. To identify linked pre- and post-intervention responses, a unique identifier generated by each respondent was utilized.

PART III

Results

**Chapter 5. Proyecto de internacionalización en casa con estudiantes de
Enfermería: COIL y simulación internacional**

**Chapter 6. Nursing students' internationalization: Virtual exchange
and clinical simulation impact cultural intelligence**

**Chapter 7. Internationalization at home program significantly
increases the self-efficacy of nursing students: A pre-post study**

RESULTS – COMPILATION OF PUBLICATIONS

Table 2. Characteristics of the three publications considered for the thesis results.

Title	Type of Publication	Year of Publication
Proyecto de internacionalización en casa con estudiantes de Enfermería: COIL y simulación internacional (Internationalization at home Project with nursing Students: COIL and International simulation)	Book section	2022
Nursing students' internationalization: Virtual exchange and clinical simulation impact cultural intelligence	Original article	2024
Internationalization at home program significantly increases the self-efficacy of nursing students: A pre-post study	Original article	2024

5. Characterization of the first publication

Author: María Galán Lominchar

Type of publication: Book section

Publication status: Published

Editorial: Dykinson S.L. indexed in SPI (Scholarly Publishers Indicators in Humanities and Social Sciences) as the third most prestigious Spanish editorial according to Spanish experts in 2022. General ICEE (indicator of editorial quality according to experts) factor: 758.

Original reference: Galan-Lominchar, M. (2022). Proyecto de internacionalización en casa con estudiantes de Enfermería: COIL y simulación internacional. In A. Quintero Cabello & J. Oliva Contero (Eds.), *Tendencias educativas emergentes en Ciencias de la Salud y Enfermería* (pp. 570–578). Dykinson.

Reference in English: Galan-Lominchar, M. (2022). Internationalization at home Project with nursing Students: COIL and International simulation. In A. Quintero Cabello & J. Oliva Contero (Eds.), *Emerging educational Trends in Nursing and Health Sciences* (pp. 570–578). Dykinson.

Introduction to the publication: This book section, included in the book *Tendencias educativas emergentes en Ciencias de la Salud y Enfermería* (Emerging Educational Trends in Health Sciences and Nursing), was derived from participation in the first International Congress on Educational Trends in Nursing, held in July 2022 in Spain. It consists of the description of the GNC program without results, a discussion, or conclusions as it was presented before all the data were collected. Slight differences between the methodologies described in this publication and the present dissertation can be identified. This is due to changes made to the original research project throughout the research process.

The original book section was published in Spanish as required by the organizing committee, but an English translation is provided below.

Tendencias educativas emergentes en Ciencias de la Salud y Enfermería

Coords.
Ana Quintero Cabello
Julio Oliva Contero

Dykinson, S.L.

TENDENCIAS EDUCATIVAS EMERGENTES EN CIENCIAS DE LA SALUD Y ENFERMERÍA

Coords.

Ana Quintero Cabello
Julio Oliva Contero

Dykinson, S.L.

2022

TENDENCIAS EDUCATIVAS EMERGENTES EN CIENCIAS DE LA SALUD Y ENFERMERÍA

APARTADO IV.IV

NUEVAS TECNOLOGÍAS
EN LA EDUCACIÓN UNIVERSITARIA

PROYECTO DE INTERNACIONALIZACIÓN EN CASA CON ESTUDIANTES DE ENFERMERÍA: COIL Y SIMULACIÓN INTERNACIONAL

MARÍA GALÁN LOMINCHAR
Escuela Universitaria de Enfermería y Fisioterapia San Juan de Dios
Universidad Pontificia Comillas

1. INTRODUCCIÓN

La pandemia de COVID-19 ha conllevado una limitación importante de la movilidad internacional de los estudiantes de educación superior. Aunque la movilidad por motivos de estudios se ha reactivado en los últimos meses y se espera que pronto vuelva a los valores anteriores a la crisis, estos se encontraban ya muy por debajo de las expectativas de las instituciones europeas para el año 2020. El acceso de los estudiantes a experiencias internacionales que desarrollen sus competencias y habilidades y que promuevan cambios en sus actitudes es aún escaso, siendo estos aspectos claves para desarrollar su carrera profesional en un mundo globalizado en el que los lugares de trabajo son cada vez más diversos étnica, cultural y lingüísticamente (OCDE, 2019).

El desarrollo actual no tiene fronteras; desde hace décadas, no se produce solo a nivel local, regional o nacional, sino que tiene lugar en un mundo cada vez más interconectado. Por ello, los egresados deben ser competentes internacionalmente, es decir, capaces "de ver cómo el enfoque y la aplicación de su disciplina puede ser diferente en otros contextos y en otras partes del mundo" (Aerden, 2015). Además, aunque las sociedades están cada vez más conectadas y los límites entre unas y otras son cada vez más difusos, siguen existiendo diferencias culturales entre los individuos. Por ello, los profesionales actuales y futuros deben ser "capaces de pensar y de actuar interculturalmente" (Aerden, 2015).

Sin embargo, incluso en un escenario con libertad de movilidad internacional, este tipo de programas no es accesible a la gran mayoría de los estudiantes y limitar la internacionalización de la educación superior a este tipo de experiencias supone un enfoque simplificado y desequilibrado (De Wit, 2013) que discrimina a la mayor parte de los estudiantes que, por muy variadas razones no puede o no quiere realizar una estancia en el extranjero. En el año 2018, en el marco del programa Erasmus+, buque insignia de la estrategia de internacionalización de la Unión Europea, 351.682 estudiantes europeos de educación superior realizaron una estancia en el extranjero con motivo de estudios o de prácticas, de los cuales 44.052 eran alumnos de universidades españolas (Comisión Europea, 2019a; Eurostat, 2020). Esto significa que solo el 2% de los alumnos europeos de educación superior y menos del 2,8% de los alumnos universitarios españoles accedieron ese año a un programa de movilidad internacional.

En el caso concreto de los estudiantes de enfermería, no hay datos exactos sobre la cantidad de alumnos que participa en programas de movilidad tradicional. Sin embargo, el porcentaje de estudiantes de ciencias de la salud que realiza intercambios dentro del programa Erasmus+ está ligeramente infrarrepresentado: el 10% de los alumnos que participan en estos programas pertenecen a esta área de estudio, cuando suponen más de un 13% de los estudiantes de la Unión Europea (Eurostat, 2020).

En un momento en el que la sociedad aún está recuperándose de un problema de salud pública internacional sin precedentes en nuestra era y en el que el profesional de enfermería tiene un papel fundamental, se hace más necesario que nunca dotar a los estudiantes de enfermería de todas las herramientas que garanticen que serán profesionales competentes en un mundo cada vez más interconectado: que serán capaces de ofrecer cuidados adaptados a diferentes pacientes y contextos, independientemente de que permanezcan en su país de origen o trabajen en el extranjero, de que tendrán las competencias necesarias para trabajar en un equipo de salud intercultural y de afrontar problemas de salud globales.

Si tan solo el 2-3% de los estudiantes europeos realiza estancias en el extranjero, ¿qué ocurre con el 97-98% restante? ¿Cómo garantizan las

instituciones que estos alumnos se convertirán en ciudadanos y profesionales globales una vez terminen sus estudios?

La internacionalización en casa (IaH) se define como "la integración deliberada de aspectos interculturales e internacionales en el plan de estudios formal e informal para todos los estudiantes en los entornos de aprendizaje domésticos" (Beelen y Jones, 2015). Esta estrategia busca la adquisición de competencias internacionales e interculturales por parte de todos los alumnos, y no solo de aquellos que tienen el privilegio de realizar estancias en el extranjero. La importancia de fomentar este tipo de internacionalización se reconoce desde hace ya varios años, por parte de instituciones y organismos tanto nacionales como internacionales (Ministerio de Educación, Cultura y Deporte; 2016; EHEA Ministerial Conference, 2012; Comisión Europea, 2013).

Aunque la implementación de estrategias de internacionalización en casa no pretende sustituir a las experiencias de movilidad internacional, supone un enfoque integrador que favorece la accesibilidad y la equidad entre los estudiantes y que puede proporcionar las herramientas necesarias para cubrir las deficiencias respecto a la consecución de determinadas competencias incluidas en nuestros planes de estudios.

En el caso concreto de los estudios de Enfermería, la literatura sobre IaH es escasa. Aun así, diversos estudios muestran datos positivos en cuanto al impacto en los estudiantes mediante el uso de diferentes herramientas de colaboración online: desarrollo de habilidades relacionales de los estudiantes de enfermería, reflexión sobre la importancia de la diversidad multicultural en la práctica de la enfermería, comprensión de otras experiencias y sistemas de salud, replanteamiento de las propias actitudes, percepción de la mejora de la competencia y la sensibilidad cultural o el fomento de una perspectiva internacional de la enfermería y de los problemas de salud globales (Carlson et al., 2017; Gemmell et al., 2015; Leung et al., 2020; Strickland et al., 2013).

El desarrollo de la tecnología permite utilizar nuevas herramientas en esta estrategia de IaH. Como recogen De Wit y Jones (2022), a raíz de las restricciones y limitaciones impuestas por la pandemia, se produjo un aumento del uso de herramientas alternativas para internacionalizar

la enseñanza. El Aprendizaje colaborativo internacional en línea (COIL, Collaborative Online International Learning) es un enfoque que permite conectar a estudiantes y profesores de diferentes culturas para aprender, discutir y colaborar entre sí. Los profesores participan en el diseño de la experiencia y los alumnos en la ejecución de las actividades diseñadas. El COIL se vuelve parte de la clase, permitiendo que todos los estudiantes tengan una experiencia intercultural significativa dentro de su curso de estudio (SUNY Commons).

Por otro lado, la simulación clínica, una herramienta utilizada en la educación en ciencias de la salud desde hace varias décadas, permite crear una situación o un entorno que ofrece a los participantes experimentar una representación de un evento real, con el objetivo de practicar, aprender, evaluar, probar o comprender sistemas o acciones humanas (Lioce et al., 2020) El uso de la simulación para el desarrollo de las competencias interculturales de los estudiantes de enfermería es un ámbito que está experimentando un crecimiento importante en los últimos años, y cuya evidencia sugiere resultados positivos (Chae et al., 2021; Ozkara San, 2015).

Por todo ello, consideramos relevante crear un programa enmarcado dentro de la estrategia Internacionalización en Casa, que permitiera el desarrollo de las competencias globales de los estudiantes de Enfermería y que estuviera basado en estas dos metodologías innovadoras, así como estudiar el efecto que estas prácticas producen en el desarrollo de nuestros estudiantes y si son realmente eficaces.

2. OBJETIVOS

2.1. OBJETIVO PRINCIPAL

El objetivo principal de este proyecto es mejorar la competencia intercultural y otras competencias internacionales (comunicación en lengua extranjera, desarrollo de la personalidad, compromiso social y conocimiento internacional de la propia disciplina) en los estudiantes de Grado en Enfermería de la Escuela Universitaria de Enfermería y Fisioterapia San Juan de Dios – Universidad Pontificia Comillas y en los estudiantes

del Bachelor of Sciences in Nursing y del Associate Degree in Nursing de West Coast University (EE.UU.)

2.2. OBJETIVOS SECUNDARIOS

- Determinar el impacto del programa de internacionalización en casa en el desarrollo de competencias internacionales e interculturales de los estudiantes de enfermería.

- Comparar el desarrollo de esas variables en los alumnos que realizan un programa de internacionalización en casa con el de alumnos que participan en un programa de movilidad internacional tradicional y el de alumnos que no participan en ninguna experiencia académica internacional.

- Determinar la influencia de las características demográficas de los estudiantes, su nivel de estudios y las experiencias internacionales anteriores en el nivel de dominio de las citadas variables.

3. METODOLOGÍA

3.1. PROGRAMA DE INTERNACIONALIZACIÓN EN CASA: COIL+ SIMULACIÓN INTERNACIONAL

Se combinan dos metodologías diferentes:

- COIL (Collaborative Online International Learning): programa colaborativo en el que un grupo formado por estudiantes de la EUEF y la West Coast University trabaja en diversas actividades síncronas y asíncronas, individuales y colectivas que tienen como objetivo la mejora de sus competencias internacionales e interculturales. Se desarrolla utilizando tecnología digital e implica comunicación online entre los estudiantes. El programa incluye actividades culturales de toma de contacto, trabajo conjunto sobre sistemas sanitarios, roles del profesional de enfermería, actividades para desarrollar la conciencia cultural y un proyecto final sobre problemas interculturales en el cuidado de los pacientes. Se realizan dos ediciones del

COIL: la primera entre marzo y abril de 2022 y la segunda entre septiembre y octubre de 2022. Durante el programa los alumnos tienen acceso al software de aprendizaje online de la Universidad Pontificia Comillas. Asimismo, se utilizan diversas metodologías activas y plataformas en línea, tales como Padlet, Youtube, Genially, Instagram, etc.

– Simulación internacional: se diseñan varios escenarios clínicos simulados que tienen como objetivo principal proporcionar al alumno una experiencia inmersiva en un contexto profesional internacional. Para proporcionar este contexto, se organiza un entorno físico que simula un servicio de salud extranjero, incluyendo pacientes estandarizados, familiares y profesionales de habla inglesa, en el caso de los alumnos españoles, y de habla hispana en el caso de los alumnos estadounidenses. Este entorno físico se recrea en los Laboratorios de Simulación de Alta Fidelidad de la Escuela Universitaria de Enfermería y Fisioterapia San Juan de Dios – Universidad Pontificia Comillas y en los Centros de Simulación pertenecientes a West Coast University, en los campus de North Hollywood, Orange County y Ontario (California), Richardson (Texas) y Miami (Florida). Se fijan objetivos relacionados con el cuidado del paciente, la relación con los familiares y con profesionales de diferentes orígenes culturales. El alumno realiza diversas actividades de preparación (relacionadas con el contenido del COIL en el que ha participado previamente), se realiza una orientación y un prebriefing, se desarrollan los casos por medio del uso de pacientes estandarizados y seguidamente, se realiza el debriefing correspondiente.

3.2. METODOLOGÍA DE INVESTIGACIÓN

Metodología cuantitativa: estudio cuasiexperimental, observacional, analítico y longitudinal. Se miden las diferentes variables con un formato pre-post en un grupo de alumnos que participa en un programa de internacionalización en casa, en un grupo de alumnos que participa en

un programa de movilidad internacional y en un grupo de alumnos que no participa en ninguno de los dos programas.

- – Variables: datos sociodemográficos, competencia intercultural, competencia internacional, autopercepción de desarrollo de competencias clave para la empleabilidad y la cohesión social y auto-eficacia. Se crea una herramienta ad-hoc que incluye diversos cuestionarios validados para medir las variables correspondientes.

Metodología cualitativa: grupos de discusión y entrevistas semiestructuradas a alumnos y a personal universitario responsable de la internacionalización de los estudiantes de Grado en Enfermería de diversas instituciones.

Muestra**:** alumnos del Grado en Enfermería de la Escuela Universitaria de Enfermería y Fisioterapia San Juan de Dios (Universidad Pontificia Comillas). Alumnos del Bachelor's Degree in Nursing de West Coast University (EE.UU.).

4. RESULTADOS

En el momento de la entrega de este manuscrito, el proyecto se encuentra en su fase de implementación. Se están analizando los resultados cuantitativos y cualitativos obtenidos en la primera edición del programa (marzo-julio de 2022) y se están recogiendo actualmente los datos de la segunda edición (septiembre-diciembre 2022).

5. DISCUSIÓN

A la espera del análisis de resultados.

6. CONCLUSIONES

La importancia del desarrollo global de los profesionales de la salud del siglo XXI es la razón fundamental de la creación de este programa y de la investigación asociada al mismo, y la escasez de evidencia específica de este tipo de actividades en estudiantes de enfermería nos motivó aún más para llevarlo a cabo. La comunicación con los estudiantes que han participado en la primera fase y su feedback inmediato son prometedores.

7. AGRADECIMIENTOS/APOYOS

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English version of the book section

Internationalization at Home Project with Nursing Students: Coil and International Simulation

María Galán Lominchar

San Juan de Dios School of Nursing and Physiotherapy, Comillas Pontifical University

1. INTRODUCTION

The COVID-19 pandemic caused significant limitations to the international mobility of higher education students. Although mobility for study purposes has resumed in recent months and is expected to soon return to pre-crisis levels, these levels were already well below the expectations of European institutions for 2020. Students' access to international experiences that develop their skills and abilities and promote changes in their attitudes is still limited, although these competencies are key to developing professional careers in a globalized world in which workplaces are increasingly ethnically, culturally, and linguistically diverse (OECD, 2019).

Current development has no borders; for decades, internationalization has not only occurred at a local, regional, and national level but also in an increasingly interconnected world. Graduates must, therefore, be internationally competent, that is, able "to see how the approach and application of their discipline may be different in other contexts and in other parts of the world" (Aerden, 2015). Furthermore, although societies are increasingly connected and their boundaries are increasingly blurred, cultural differences between individuals still exist. Therefore, current and future professionals must be "capable of thinking and acting interculturally" (Aerden, 2015). However, even in a scenario with free international mobility, this type of program is not accessible to the vast majority of students, and limiting the internationalization of higher education to this type of experience represents a simplified and unbalanced approach (De Wit, 2013) that discriminates against the majority of students who, for a variety of reasons, cannot or do not want to spend time abroad. In 2018, within the framework of the Erasmus+ program,

the flagship of the European Union's internationalization strategy, 351,682 European higher education students undertook a stay abroad to study or do an internship, of which 44,052 were students at Spanish universities (European Commission, 2019a; Eurostat, 2020). This means that only 2% of European higher education students and less than 2.8% of Spanish university students accessed an international mobility program that year.

Regarding nursing students, exact data on the number of students participating in traditional mobility programs are unavailable. However, the percentage of health sciences students who undertake exchanges within the Erasmus+ program is slightly underrepresented: 10% of the students participating in these programs belong to this area of study, representing more than 13% of students in the European Union (Eurostat, 2020).

At a time when society is still recovering from an unprecedented international public health crisis in our era, in which nursing professionals have a fundamental role, it is more necessary than ever to provide nursing students with all the tools that guarantee that they will be competent professionals in an increasingly interconnected world: that they will be able to offer care adapted to different patients and contexts, regardless of whether they remain in their country of origin or work abroad and that they will have the necessary skills to work in an intercultural health team and face global health problems.

If only 2–3% of European students spend time abroad, what about the remaining 97–98%? How do institutions ensure that these students will become global citizens and professionals after completing their studies?

Internationalization at home (IaH) is defined as "the deliberate integration of intercultural and international aspects into the formal and informal curriculum for all students in their home learning environments" (Beelen & Jones, 2015). This strategy seeks the acquisition of international and intercultural competencies by all students, not only those who have the privilege of spending time abroad. The importance of promoting this type of internationalization has been recognized for several years by both national and international institutions and organizations (Ministry of Education, Culture and Sport, 2016; EHEA Ministerial Conference, 2012; European Commission, 2013).

Although the implementation of internationalization strategies at home does not aim to replace international mobility experiences, it does represent an integrative approach that favors accessibility and equity among students and can provide the

necessary tools to compensate for deficiencies regarding the achievement of certain competencies included in our study plans.

In the specific case of nursing studies, the literature on IaH is scarce. Even so, several studies show positive data regarding the impact of IaH on students through the use of different online collaboration tools, including the development of relational skills of nursing students, reflection on the importance of multicultural diversity in nursing practice, the understanding of other experiences and health systems, the rethinking of own attitudes, the perception of the improvement of competence and cultural sensitivity, and the promotion of an international perspective of nursing and global health problems (Carlson et al., 2017; Gemmell et al., 2015; Leung et al., 2020; Strickland et al., 2013). The development of technology allows for the use of new tools in this IaH strategy. As reported by De Wit and Jones (2022), following the restrictions and limitations imposed by the pandemic, there was an increase in the use of alternative tools to internationalize teaching. Collaborative Online International Learning (COIL) is an approach that allows students and teachers from different cultures to connect to learn, discuss, and collaborate. Teachers participate in the design of the experience, and students in the execution of the designed activities. COIL becomes a part of the class, allowing all students to have a meaningful intercultural experience within their course of study (SUNY Commons, 2021). On the other hand, clinical simulation, a tool used in health sciences education for several decades, allows the creation of a situation or environment that allows participants to experience a representation of a real event with the aim of practicing, learning, evaluating, testing, or understanding human systems or actions (Lioce et al., 2020). The use of simulation for the development of intercultural competencies in nursing students has experienced significant growth in recent years, and related evidence suggests positive results (Chae et al., 2021; Ozkara San, 2015).

For all these reasons, we consider it relevant to create a program framed within the IaH strategy based on these two innovative methodologies, which would allow the development of global competencies in nursing students, as well as to study the effect of these practices on the development of our students and determine whether they are really effective.

2. OBJECTIVES

2.1. Main objective

The main objective of this project is to improve intercultural competence and other international competencies (communication in a foreign language, personality development, social commitment, and international knowledge of one's discipline) in students of the Bachelor of Nursing program at the San Juan de Dios School of Nursing and Physiotherapy, Universidad Pontificia Comillas, and students of the Bachelor of Sciences in Nursing and the Associate Degree in Nursing at West Coast University, USA.

2.2. Secondary objective

- To determine the impact of the internationalization program at home on the development of the international and intercultural competencies of nursing students.
- To compare the development of these variables in students who carry out an internationalization program at home with that in students who participate in a traditional international mobility program and in students who do not participate in any international academic experience.
- To determine the influence of the students' demographic characteristics, level of studies, and previous international experiences on the level of mastery of the aforementioned variables.

3. METHODOLOGY

3.1. Internationalization program at home: COIL + international simulation

Two different methodologies are combined:

COIL: A collaborative program in which a group of students from the San Juan de Dios School of Nursing and Physiotherapy (Universidad Pontificia Comillas) and West Coast University works on various synchronous and asynchronous individual and

collective activities that aim to improve their international and intercultural skills. It is developed using digital technology and involves online communication between students. The program includes cultural contact activities, joint work on health systems, roles of nursing professionals, activities to develop cultural awareness, and a final project on intercultural issues in patient care. Two editions of COIL are held, the first between March and April 2022 and the second between September and October 2022. During the program, students have access to the online learning software of the Universidad Pontificia Comillas. Various active methodologies and online platforms are also used, such as Padlet, YouTube, Genially, and Instagram.

International simulation: Several simulated clinical scenarios are designed with the main objective of providing the student with an immersive experience in an international professional context. To provide this context, a physical environment is organized that simulates a foreign health service, including standardized patients, family members, and English-speaking professionals in the case of Spanish students and Spanish-speaking professionals in the case of American students. This physical environment is recreated in the High-Fidelity Simulation Laboratories of the San Juan de Dios School of Nursing and Physiotherapy, Universidad Pontificia Comillas, and the Simulation Centers belonging to West Coast University on the campuses of North Hollywood, Orange County, and Ontario (California), Richardson (Texas) and Miami (Florida). Objectives are set related to patient care and relationships with family members and professionals from different cultural backgrounds. The student carries out various preparatory activities (related to the content of the COIL in which he or she has previously participated), an orientation and a prebriefing are carried out, the cases are developed using standardized patients, and the corresponding debriefing is carried out thereafter.

3.2. Research methodology

Quantitative methodology: This is a quasi-experimental, observational, analytical, and longitudinal study. The different variables are measured in a pre-post format in a group of students participating in an internationalization program at home, a group of students participating in an international mobility program, and a group of students not participating in either.

Variables: Socio-demographic data, intercultural competence, international competence, self-perception of development of key competencies for employability, social cohesion, and self-efficacy. An ad hoc tool is created that includes various validated questionnaires to measure the corresponding variables.

Qualitative methodology: Discussion groups and semi-structured interviews with students and university staff responsible for the internationalization of nursing students from various institutions.

Sample: Nursing degree students from the San Juan de Dios University School of Nursing and Physiotherapy (Pontifical University Comillas) and Bachelor's degree in Nursing students from West Coast University (USA).

4. RESULTS

As of the submission of this manuscript, the project is in its implementation phase. The quantitative and qualitative results obtained from the first edition of the program (March–July 2022) are being analyzed, and data from the second edition (September–December 2022) are currently being collected.

5. DISCUSSION

Awaiting the analysis of results.

6. CONCLUSIONS

The importance of the global development of 21st-century health professionals is the fundamental reason for the creation of this program and the associated research, and the scarcity of specific evidence of this type of activity among nursing students motivated us further to carry it out. Communication with the students who participated in the first phase and their immediate feedback are promising.

7. ACKNOWLEDGMENTS/SUPPORT

<div align="right">**CHAPTER 6**</div>

6. Characterization of the second publication

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The author of this thesis is the first author of the publication and, as stated in the CRediT Statement section of the article, her contribution to the article was as follows: conceptualization, data curation, formal analysis, investigation, methodology, project administration, resources, writing – original draft, and writing – review and editing.

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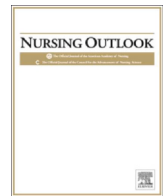
Nursing students' internationalization: Virtual exchange and clinical simulation impact cultural intelligence

Maria Galan-Lominchar [a,b,]*, Isabel Muñoz-San Roque [c], Cristino del Campo Cazallas [d], Rochelle Mcalpin [e], David Fernández-Ayuso [a,b], Ana SF Ribeiro [a,b]

[a] Comillas Pontifical University, Health Sciences Department. San Juan de Dios School of Nursing and Physical Therapy, Madrid, Spain
[b] San Juan de Dios Foundation, Madrid, Spain
[c] Faculty of Human and Social Sciences, Comillas Pontifical University, Madrid, Spain
[d] SUMMA-112, Madrid Healthcare Service, Madrid, Spain
[e] West Coast University, BSN Nursing-Simulation Program, Irvine, CA

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ABSTRACT

Background: There is a need for globally competent nurses; however, some cannot train abroad. Internationalization at home strategies seek to teach intercultural and international competencies to all students, regardless of location.
Purpose: This study evaluated the impact of a virtual exchange and clinical simulation program on nursing students' cultural intelligence.
Methods: The Global Nursing Care (GNC) program was designed to improve nursing students' global competencies, particularly cultural intelligence. It was implemented in two universities in Spain and the USA. A quasi-experimental, analytic, and longitudinal study involved 261 nursing students, 57 from the GNC program and 204 in the control group. Sociodemographic data were collected, and the Cultural Intelligence Scale was used to measure cultural intelligence.
Discussion: All cultural intelligence dimensions were augmented following program participation. Moreover, students who participated in the program presented higher cultural intelligence than the control group.
Conclusion: The results suggest that program participation was associated with a statistically significant gain in nursing students' cultural intelligence.

Introduction

Nurses are expected to graduate as global citizens and professionals, as they will develop their careers in a globalized world where workplaces are increasingly diverse in an ethnic, cultural, and linguistic sense. The global public health situation caused by the COVID-19 pandemic has made even more evident how important it is to provide nursing students with tools that guarantee that they will be competent professionals in an increasingly interconnected world so that they will be able to provide health care adapted to different patients and contexts, to work with multicultural teams and to combat global health problems. Many scholars and organizations have pointed out the need to train culturally competent nurses to eliminate health disparities (Giger et al., 2007; U.S. Department of Health and Human Services, 2011), improve health care policies and practices (Kulbok et al., 2012), face new challenges and opportunities, such as conflicts, pandemics and migratory flows (Charles & Plager, 2015; Ogilvie et al., 2007), and provide person-focused and culturally appropriate care to patients, families, and communities (International Council of Nurses, 2013, 2021).

However, in the last 30 years, most of the resources and strategies to achieve this goal have been focused on traditional mobility programs, leaving behind most students who cannot spend part of their academic year abroad (De Wit, 2020). In 2021, only 2.4% of higher education students worldwide are estimated to have studied abroad (UNESCO Institute of Statistics, 2023), a figure similar to previous years, even before COVID-19. These numbers are very far from the 2020 EU Ministers of Education's objective of 20% mobile students (European Commission, 2009).

Available data also suggest the underrepresentation of health care and welfare students in mobility programs. For example, in the UK,

* Corresponding author: M. Galan-Lominchar, Escuela de Enfermería y Fisioterapia San Juan de Dios, Universidad Pontificia Comillas, Avenida San Juan de Dios, 128350, Ciempozuelos, Madrid, Spain.
E-mail address: mgalan.rrii@comillas.edu (M. Galan-Lominchar).

only 0.31% of nursing students participated in a mobility program between 2015 and 2016 (Council of Deans of Health, 2017).

Internationalization at Home

Since the beginning of the XXI century, the Internationalization at Home (IAH) educational trend and its geographical variations (comprehensive internationalization, internationalization of the curriculum) have strived to make this process equitable and accessible to all. Beelen and Jones (2015) defined it as "the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning." This approach is the only way to be sure that every student can acquire these competencies and is a guarantee of social equity that must be assumed by higher education institutions (Beelen, 2019; Knight, 2008). This need to consider the international dimension of every student has been highlighted by several studies and reports published by different organizations such as the European Parliament (De Wit et al., 2015), the European Higher Education Area (2012), the European Commission (2013) or the American Council on Education (2023).

The difficulties for traditional mobility faced during the COVID-19 pandemic and the rise of online teaching and learning have promoted an increased interest in the different strategies of IAH, such as virtual exchange. This methodology is based on a collaborative learning educational approach to teaching and learning. It is defined as "technology-enabled, people-to-people education programmes sustained over time during which sustained communication and interaction occur between individuals or groups who are geographically separated, with the support of facilitators and/or educators" (European Union & EACEA, 2020). Although research on virtual exchange is rising, the literature reporting the efficacy of this methodology on the cultural development of nursing students is still scarce. Some authors have demonstrated positive results in enhancing global competencies, including the development of an understanding of nursing as universal and recognizable (Carlson et al., 2017), cultural awareness, international social responsibility, and cultural sensitivity in clinical practice (Kor et al., 2022; Leung et al., 2020). Furthermore, a higher understanding of health care systems, the reconsideration of their attitudes, the self-perception of improvement of their cultural competence and sensibility, the enhancement of an international nursing perspective, and the understanding of global health problems have been reported (Carlson et al., 2017; Chan & Nyback, 2015; Gemmell et al., 2015; Leung et al., 2020; Procter et al., 2017). However, Gallagher and Polanin (2015) showed that the impact of this kind of activity varied depending on the measurement, the funding, and publication type, and suggested further research.

Another tool that has been used to enhance the cultural competencies of nursing students is clinical simulation. According to Gaba (2004), simulation is "an educational technique that replaces or amplifies real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner." Replicating a clinical context allows students to develop skills, knowledge, and attitudes in a safe space. Studies implementing clinical simulation in several modalities, such as traditional simulations with human patient simulators (high and low fidelity), simulated patients, and virtual or computer-based simulation experiences, have shown a positive impact on the cultural competence of nursing students (Chae et al., 2021; Foronda et al., 2018; Min-Yu Lau et al., 2016; Ozkara San, 2015; Plaza del Pino et al., 2022). However, in a recent integrative review, Marja and Suvi (2021) suggested combining teaching methods (including simulation) to enhance the effects, foster learning cultural competence, and promote patient-centered care.

Some other teaching methods used to enhance the cultural competencies of nursing students and nurses are lectures, case studies, web-based modules, reflecting journaling, games, or role-play (Gallagher & Polanin, 2015; Oikarainen et al., 2019).

Cultural Intelligence

The Cultural Intelligence (CQ) model (Earley & Ang, 2003) proposes a multidimensional concept based on the multiple-loci framework of intelligence developed by Stenberg and Detterman (1986). The model's authors define CQ as "the capability of an individual to function effectively in situations characterised by cultural diversity." The model distinguishes four components of CQ which are defined as follows by Ang and Van Dyne (2008): metacognitive cultural intelligence (METACQ) is "the level of conscious cultural awareness during cross-cultural interactions" and includes "planning, monitoring, and revising mental models of cultural norms for countries or groups of people" cognitive cultural intelligence (COGCQ) reflects "knowledge of norms, practices, and conventions in different cultures that have been acquired from educational and personal experiences" motivational cultural intelligence (MOTCQ) reflects "the capability to direct energy toward learning about and functioning in intercultural situations" and behavioral cultural intelligence (BEHCQ) is "the capability to exhibit appropriate verbal and nonverbal actions in culturally diverse interactions."

This CQ construct has been widely applied in education and research in the study abroad field (Chang Alexander et al., 2022; Chédru & Delhoume, 2023; Nguyen et al., 2018). Although traditional mobility experiences have more substantial effects on students' CQ development, in-class cultural interventions have been shown to be effective methods for improving CQ (Wang et al., 2021).

This study aims to determine the impact of an IAH program that combines virtual exchange and clinical simulation on the CQ of nursing students.

Methods

The Global Nursing Care Program

Based on a constructivist, collaborative, and experiential learning approach and guided by the Cultural and Linguistic Competence Position Statement issued by the International Council of Nurses in 2007 and revised in 2013 (International Council of Nurses, 2013), a mixed-methods IAH program combining virtual exchange and simulation was created and implemented twice between March and October 2022. A needs assessment conducted by the research team before creating the program and based on the available evidence already indicated the need to enhance the intercultural competencies of nursing students. The team, involving faculty from Universidad Ponticia Comillas (Spain) and West Coast University (USA), collaborated to define the intended student outcomes, the length and content of the program, design the activities, select tools, and monitor student learning. The program was implemented with nursing students from both institutions, who voluntarily joined as it was not part of any curriculum course. The virtual module of the program took place online, and the clinical simulation took place in person at the Centre for Interprofessional Simulation and Research in Health Sciences of the San Juan de Dios School of Nursing and Physiotherapy (Universidad Pontificia Comillas) and the West Coast University Simulation Centres. The primary facilitator of both modules was the principal researcher, a nursing professor with training and experience in virtual collaborative programs and clinical simulation.

The program's main objective was to develop the intercultural and international competencies of the students. The intended learning outcomes were that, at the end of the Global Nursing Care (GNC) program, the students would be able to:

Table 1
Description of the Global Nursing Care Program

Virtual Exchange

Week	Topic	Methodology	Time	Tools
1	Welcome, cultural orientation, and ice-breaking activities	Video-orientation creation and checking of online profiles	Asynchronous	Blackboard Collaborate
		Social event: icebreaker with a facilitator	Synchronous	Moodle
				Padlet
				Genially
2	Health care systems	Webinar and reflection activities	Asynchronous	Moodle
		Q&A on social media		YouTube
				Blackboard Collaborate
3	Nursing profession	Content creation on teams	Synchronous on teams	WhatsApp
		Checking the content and reflection activities	Asynchronous	Instagram
		Social event: questions and answers with experts and facilitator	Synchronous	Padlet
				Moodle
				Blackboard Collaborate
4	Spanish and U.S. cultures	Solving a challenge on teams	Synchronous on teams	Genially
		Reflection activities	Asynchronous	Blackboard Collaborate
				Moodle
5	Transcultural nursing	Reading and reflection	Asynchronous	Genially
		Social event: work in teams to solve intercultural conflicts	Synchronous	
		Final reflection	Asynchronous	Blackboard Collaborate
				Moodle

International Simulation

Scenario	Topic	Synopsis	Scenario objectives
1	Patient care and education	A young recently diagnosed DM1 patient is referred to the diabetes outpatient office for education	1. To conduct an assessment in an organized and systematic manner. 2. To perform appropriate patient education.
2	Intercultural conflict with relative	Patient's relative inquiries about the disease and intends to apply an alternative treatment related to their cultural background	1. To assess the relative's knowledge of the patient's situation. 2. To identify cultural conflicts. 3. To adapt care provision to the patient's cultural practices and beliefs as far as possible.
3	Interaction with colleague	A new colleague from a different cultural background starts their shift.	1. To write and communicate an effective nursing report. 2. To collaborate with a colleague to solve a logistical issue of the service.

Transversal objectives (common to all the scenarios)
1. To communicate with the patient/relative/worker in a manner that reflects cultural competence.
2. To communicate in a second language, using any available resource if needed.

DM1, Type 1 diabetes mellitus; Q&A - Question and Answers session.

1. Critically compare health care systems, the role of the nursing professional, and their integration into the health system in different countries.
2. Analyze differences and similarities between different cultures.
3. Recognize and manage cultural issues in the nursing practice, respecting the patient's and other professionals' cultural diversity.
4. Actively work in international teams, sharing knowledge and experiences and respecting others' opinions and attitudes.

An outline of the program can be found in Table 1. The election of these methodologies responded to the objective of providing the students with a more complete experience than using just one of them, as well as more similar to a traditional mobility experience: the virtual exchange would allow the students to interact with nursing students from other cultures, work collaboratively, and establish new relationships, and the international simulation would allow them to experience working as a nurse in a foreign country briefly.

Two different team members assessed the achievement of the intended learning outcomes, by evaluating the reflective activities, the content created by the students, their active participation in the social events, and their performance in the simulated scenarios with a checklist and a rubric created explicitly for the program.

Virtual Exchange

Based on the premises of the Collaborative Online International Learning (COIL) approach developed by The State University of New York (SUNY Commons, 2021), a 5-week online module was developed between the two Universities. COIL is a virtual exchange type based on a collaborative, social constructivist learning approach (Guth & Rubin, 2015). International teams with students from both countries were created to participate in synchronous and asynchronous activities. The program was learner-led, with the support of the facilitator and the staff from the International Education Department of the USA institution. The main working language was English. Students from different academic years worked together so that more experienced students could support beginners if needed. The students were asked to reflect on cultural issues during and after the program and needed to collaborate to achieve the required outcomes.

International Simulation

Based on the Healthcare Simulation Standards of Best Practice of the International Nursing Association for Clinical Simulation and Learning (Watts et al., 2021) and Kolb's experiential learning theory (Kolb, 1984), a simulation-based experience was designed to meet the identified objectives. The activity consisted of three consecutive scenarios. The simulation lab replicated an outpatient setting in a foreign country (a U.S. hospital for Spanish students and a Spanish hospital for U.S. students). Each scenario was focused on a different subject and problem: patient care and education, solving an intercultural conflict with a relative, and interaction with a health care worker from a different cultural background. All of them followed a logical timeline. Each student participated in the session individually.

The students were provided with preparation activities, including the objectives and general information about each scenario and nursing content related to the activities they would perform in the simulation.

All the scenarios were developed in a foreign language (Spanish for U.S. students and English for Spanish students), and pilot-tested. They counted on simulated patients/persons with native/high proficiency language skills. The development of each scenario was adapted to the level of knowledge, skills, and attitudes shown by the student (including the second language level) through the collaboration of the simulated patient/person and the facilitator, using prompts and cues. The simulation lab was set up to provide maximum fidelity and realism. After each debriefing, the student was offered a chance to repeat the previous scenario if needed.

The sessions were structured as follows: preparation activities, briefing (orientation and planning), scenario 1 + debriefing, scenario 2 + debriefing, scenario 3 + debriefing, and wrap-up. They were led by the primary facilitator in both countries and supported in the USA institution by the Simulation Managers and the Operation Specialists.

Study Design and Participants

A quasi-experimental, analytic, and longitudinal study was designed. Convenience sampling was adopted for subject recruitment. Seventy undergraduate nursing students who participated in the GNC program were recruited (GNC students), 47 in Spain and 23 in the USA, from a total of 860 students (450 in Spain and 410 in the USA). In the control group, 288 students who did not participate in the GNC program or any other international exchange during their higher education studies were recruited (control students). Students of both groups belonged to the same cohorts. Of the 70 students enrolled in the GNC program, 57 completed the preintervention and postintervention survey (81.42%). Of the 288 students asked to complete the control survey, 204 answered it (70.83%). Sixty-five control students were randomly selected for the analyses to make the sample sizes equivalent. Most students were female, but this was more apparent in the GNC group (96.5%) than in the control group (81.4%). Almost three-fourths of the students participating in the program were aged 20 to 29 (M = 23.79) (Table 2). Students were enrolled in any of the four academic years, starting from the second semester of the first year. All the students from Spain had at least an intermediate-high English level. This was a requirement to join the program since the virtual exchange was developed entirely in English. The U.S. students had no language requirement, and their Spanish language skills varied from elemental to native.

Data Collection and Procedure

The students were asked in person by their professors or staff from the international office to complete an online survey that included the measurement tools voluntarily. The GNC students answered the survey before starting the program (pre) and once it was completed (post). Control students completed the survey only once, around the same time as GNC students answered the post-intervention survey.

Measures

Cultural Intelligence Scale

Based on the conceptual model of CQ, Van Dyne et al. (2008) developed and validated the Cultural Intelligence Scale (CQS). The scale contains 20 items measuring the different dimensions of CQ: metacognitive (four items), cognitive (six items), motivational (five items), and behavioral (five items). The Spanish version of the CQS (Moyano et al., 2015) was administered to Spanish students, and the English version of the CQS (Van Dyne et al., 2008) to U.S. students. The scale uses a 1 to 7 (strongly disagree to strongly agree) Likert scale in the original English version and the validated Spanish adaptation (Moyano et al., 2015). The scale's reliability is acceptable, with Cronbach's alpha higher than 0.70 in every dimension in the original validation study (Van Dyne et al., 2008). In the Spanish version (Moyano et al., 2015), Cronbach's alpha was 0.89, (also higher than 0.70 in every dimension).

Sociodemographics

Demographic data questionnaires, including age, gender, nationality, and year of studies, were collected only at baseline.

Data Analysis

Data were analyzed using IBM's SPSS (version 28.0.1.1). The GNC group's pretest and post-test data were compared using a paired sample t-test. Independent t-tests compared the U.S. and the Spanish students inside the GNC group and the GNC group with the control group. The alpha level for statistical significance was set at 0.05 (two-sided significance test). The effect size was determined by calculating Cohen's d for small (0.2), medium (0.5), and large effects (0.8) (Cohen, 1992).

Ethical Considerations

The Ethics Committee at the Universidad Pontificia Comillas reviewed and approved the study (determination 2022/1). Informed consent was obtained at each data collection point. Student responses were voluntary and anonymous during all data collection and analysis phases, with before and after responses linked using a unique identifier generated by each respondent.

Results

The CQS reliability in the present sample is higher than 0.80 for every dimension (see Supplementary Material, Table S1).

The program's impact on CQ is presented in Table 3. A dependent sample t-test returned a positive result. After the GNC program, there was a significant increase in all CQ dimensions and the total score ($p < .05$). In both pretest and post-test, students showed the highest level of CQ in the metacognitive (METACQ) and motivational (MOTCQ) dimensions and the lowest in the COGCQ. Medium effects are shown in the total CQ, the COGCQ, and MOTCQ dimensions, and small-to-medium effects in the rest of the dimensions.

As shown in Table 4, when comparing the CQ level of improvement (gain score) between the Spanish and the U.S. groups, no significant difference was detected ($p > .05$). If we compare the levels of CQ before the program in these groups, we only observe a significant difference in the COGCQ dimension ($p < .05$ and a large size effect), which was higher in the Spanish group. A sample of 16

Table 2
Sociodemographic Data

	GNC Students (n = 57)		Control Students (n = 204)		Randomly Selected Control Students (n = 65)	
	%	n	%	n	%	n
Gender						
Female	96.5	55	81.4	166	81.5	53
Male	3.5	2	18.6	37	18.5	12
Year of studies						
1st	17.5	10	32.4	66	24.6	16
2nd	28.1	16	25.0	51	32.3	21
3rd	22.8	13	18.6	38	26.2	17
4th	31.6	18	24.0	49	16.9	11
Age						
< 20	17.5	10	27.9	57	20.0	13
20–29	71.9	41	60.3	123	67.7	44
30–39	5.3	3	10.8	22	10.8	7
≥40	5.3	3	0.99	2	1.5	1
Nationality						
Spanish	71.9	41	81.37	166	69.2	45
U.S.	28.1	16	18.63	38	30.8	20

Table 3
Pretest and Post-test Comparison of Total CQ and Dimensions in GNC Students

	Pretest N = 57		Post-test N = 57					
	M	SD	M	SD	CI (95%)	t Value	p-Value	Cohen's d
CQ	5.67	0.83	6.08	0.71	0.25–0.58	5.05	<.001	0.53
METACQ	6.09	1.02	6.42	0.68	0.11–0.55	3.01	.004	0.38
COGCQ	4.57	1.32	5.33	1.17	0.41–1.10	4.42	<.001	0.60
MOTCQ	6.17	0.83	6.50	0.59	0.13–0.53	3.27	.002	0.46
BEHCQ	5,84	1.01	6.09	0.93	0.03–0.46	2.33	.023	0.26

Note. BEHCQ, behavioral cultural intelligence; CI, confidence interval; COGCQ, cognitive cultural intelligence; CQ, total cultural intelligence; GNC, Global Nursing Care; M, mean; METACQ, metacognitive cultural intelligence; MOTCQ, motivational cultural intelligence; SD, standard deviation.

Table 4
Comparison of Pretest Levels and Gain Scores of Total CQ and Dimensions Between Spanish and U.S. GNC Students

	U.S. Students N = 16		Spanish Students N = 16					
	M	SD	M	SD	CI (95%)	t Value	p-Value	Cohen's d
CQ gain score	0.55	0.86	0.36	0.59	(−0.34 to 0.72)	0.72	.479	0.25
CQ pretest	5.39	1.09	5.81	0.78	(−0.26 to 1.11)	1.26	.216	0.44
METACQ gain score	0.44	0.99	0.08	0.77	(−0.28 to 1.00)	1.14	.263	0.40
METACQ pretest	5.98	1.33	6.27	0.74	(−0.50 to 1.06)	0.74	.467	0.27
COGCQ gain score	1.09	1.95	0.83	0.88	(−0.83 to 1.35)	0.49	.630	0.17
COGCQ pretest	3.78	1.49	4.83	1.05	(0.13–1.99)	2.33	.027	0.81
MOTCQ gain score	0.42	1.11	0.35	0.63	(−0.58 to 0.73)	0.23	.816	0.08
MOTCQ pretest	6.08	1.16	6.10	0.84	(−0.72 to 0.74)	0.03	.972	0.02
BEHCQ gain score	0.25	1.13	0.20	0.73	(−0.63 to 0.73)	0.15	.882	0.05
BEHCQ pretest	5.71	1.26	6.05	0.94	(−0.46 to 1.14)	0.86	.397	0.31

Note. BEHCQ, behavioral cultural intelligence; CI, confidence interval; COGCQ, cognitive cultural intelligence; CQ, total cultural intelligence; GNC, Global Nursing Care; M, mean; METACQ, metacognitive cultural intelligence; MOTCQ, motivational cultural intelligence; SD, standard deviation.

Table 5
Comparison of post-test levels of total CQ and dimensions in GNC students and baseline levels in control students.

	GNC Students (Post) N = 57		Control Students N = 65					
	M	SD	M	SD	CI (95%)	t Value	p-Value	Cohen's d
Total CQ	6.08	0.71	5.27	0.90	(0.52–1.11)	5.51	<.001	0.99
METACQ	6.42	0.69	5.74	1.22	(0.31–1.04)	3.69	<.001	0.67
COGCQ	5.33	1.17	4.21	1.39	(0.65–1.58)	4.77	<.001	0.87
MOTCQ	6.50	0.59	5.51	1.17	(0.64–1.32)	5.74	<.001	1.05
BEHCQ	6.09	0.94	5.59	1.23	(0.10–0.89)	2.48	.014	0.45

Note. BEHCQ, behavioral cultural intelligence; CI, confidence interval; COGCQ, cognitive cultural intelligence; CQ, total cultural intelligence; GNC, Global Nursing Care; M, mean; METACQ, metacognitive cultural intelligence; MOTCQ, motivational cultural intelligence; SD, standard deviation.

randomly selected Spanish students was used to make sample sizes equivalent for these analyses, and they were conducted several times in different samples to verify these results.

Total CQ and its dimensions were also compared between the GNC group (postintervention) and the control group. Significant differences exist between groups in the total CQ values ($p < .001$), and GNC students had significantly higher scores in every dimension (Table 5). A medium effect is observed in the BEHCQ dimension, and large effects are shown in the rest of the dimensions and the total CQ. Another group of 65 randomly selected students from the control group was analyzed, and the results obtained were similar.

Discussion

Results suggest that an IAH program combining virtual exchange and an international clinical simulation-based experience significantly increased students' CQ. This combination enabled the students to develop all four capacities of CQ.

The COGCQ dimension was the one with the lowest score before the program, and it was the one that increased the most, implying that the students improved their factual knowledge about other cultures, norms, and conventions accepted in different societies. According to Ang et al. (2007), this would lead to a higher cultural judgment and decision-making capacity. However, the score in this dimension is still the lowest of all in the post-test assessment. Compared to the rest of the dimensions, this low score in the COGCQ dimension is consistent with previous works (Chang Alexander et al., 2022; Gökten & Emil, 2019; Skaria & Montayre, 2023; Wang et al., 2021). However, it differs from the findings of Majda et al. (2021), in which the nurses' lowest scores were obtained in the METACQ dimension. This outcome could be explained by the fact that deeply understanding other cultures takes longer than a 5-week virtual exchange and a clinical simulation-based experience. Besides that, although the GNC program did not focus only on the two cultures represented by most students, it was unavoidable that the students got new knowledge mainly from the U.S. and the Spanish cultures. However, the CQS asks about "other cultures" in general and about some aspects that are difficult to cover in a nursing-centered program, for example, "I know the marriage systems of other cultures" or "I know the arts and crafts of other cultures."

The lowest improvement was shown in the behavioral dimension, that is, in the student's awareness of multicultural interactions and how to adjust their behavior to meet the needs of these interactions (Earley & Ang, 2003). This result relates to previous research, such as Wang et al. (2021), who stated "cultural education in our universities mainly contributes to the mental and motivational components of CQ first, and it may take a long time to observe its effects on the behavioural component." We must consider this and look for ways to better develop the behavioral dimension of CQ because, as Chang Alexander et al. (2022) pointed out, a person could have higher levels of the other three domains, but if they "cannot translate those capabilities into appropriate behaviour (BEHQC), then intercultural interactions may suffer."

The MOTCQ capacity had the highest levels both preprogram and postprogram. This result could imply that the students participating in this program were already motivated to focus their attention and energy on learning and experiencing situations where cultural differences exist (Ang & Van Dyne, 2008). When comparing this dimension in the pretest GNC group (M = 6.17, SD = 0.83) and the control group (M = 5.51, SD = 1.17), we observe that it is higher in the first group (p = .002). Still, more research is needed to determine if nursing students with higher motivational CQ are more likely to participate in international activities.

Although no previous studies have been conducted using this combination of methodologies, our research confirms evidence from other studies that addressed these methods separately: Hackett et al. (2023) and Erez et al. (2013) showed an improvement in CQ via international online collaboration, and Evaluate Group (2019), Vahed and Rodriguez (2021) and Naicker et al. (2022) showed a positive impact in similar constructs, such as intercultural communicative competence, intercultural awareness and global engagement or intercultural openness. In the field of clinical simulation, evidence suggests that applying a clinical simulation-based activity showed an improvement in cultural competence and related areas, such as cross-cultural communication skills (Chae et al., 2023; Plaza del Pino et al., 2022), cultural awareness, transcultural self-efficacy, knowledge about cultural assessment or self-awareness toward cultural competence (Marja & Suvi, 2021; Ozkara San, 2015). However, our study is the first to address the relationship between clinical simulation and CQ.

Despite the limitation due to a small sample size, our data reveal that the change in CQ is similar in U.S. and Spanish nursing students. When comparing the levels of CQ in the baseline, the only statistically significant difference is shown in the COGCQ dimension (p = .027, d = 0.81). This observation could mean that the Spanish students were already more familiar with the culture, norms, and conventions in the USA than the U.S. students were with Spanish ones, which is understandable due to the widespread presence of the U.S. culture in the media, arts, and everyday life in Western Europe. According to Ljubica et al. (2013), this difference in the cognitive dimension could also be caused by differences in language skills or the levels of multicultural interaction between groups. However, further research with larger sample sizes is needed to confirm these causes. Despite this, our groups and the program's impact on them can be considered homogeneous.

Our analysis shows that the CQ of the students who participated in the GNC program is higher in every dimension than that of those who did not, with large effect sizes. This outcome is very relevant, as research shows that higher CQ levels are related to multiple benefits, such as lower levels of ethnocentrism (Young et al., 2017), higher levels of innovative behavior (Afsar et al., 2021) moderating effect between nurses' relationships conflict and teamwork (Gu et al., 2022), higher intercultural sensitivity (Gol & Erkin, 2019), and higher nurses' professional competency (Rahimaghaee & Mozdbar, 2017).

Challenges, Successes, and Further Implementation of the GNC Program

The main challenge was embedding the program into the formal curriculum. It could not be done, due to the differences and lack of flexibility in both institutions' curricula. This fact entailed a lower participation rate and excluded the students who were not interested, who may be the ones who needed to develop these competencies the most. Besides this, other challenges encountered in the implementation of the program were those related to the virtual exchange module, which has been identified previously in the literature (American Council on Education, 2016), such as language and time difference. The need for a common language for the virtual exchange and the fact that the Spanish students were enrolled in a Diploma in Communication Competence in English led to the use of English as a working language. However, some applicants were not proficient enough, and therefore, they were not admitted. Moreover, time differences hindered the arrangement of synchronous activities, as students were located in four time zones.

Regarding the international simulation, the main challenge was finding simulated patients with a high English language level in Spain. Nonprofessionals were trained for this purpose. Including the simulations into an already busy schedule in the simulation centers was also a problem.

Besides the positive results of this study, other successes were identified. The students rated the program as highly satisfactory in a postimplementation survey, and positive feedback was also received in the final reflections and debriefings.

Indeed, the implementation of the program involved a significant amount of time and work by the team, and it was possible thanks to the international orientation of the faculty and the support of both institutions from a strategic level. IAH is a measure of social equity that the institutions must assume. They are responsible for making internationalization accessible to all the students. However, solely institutional policies and strategies do not guarantee that programs like these take place, as the intercultural and international dimensions depend on the discipline and the context, and the departments are the ones who should decide what aspects are relevant to the students (Beelen, 2019). The first step is to make them aware of the importance of developing the intercultural and international competencies of the students; thus, the faculty must be capable of designing, implementing, and assessing the activities (Beelen, 2017). As Garcés and O'Dowd (2020) noted, proper training, provision of time and/or funding, human and material resources, and a fluent collaboration between the international office staff and the faculty are essential to implementing these activities.

Some authors have suggested that other types of educational interventions are also effective in improving the cultural competencies of nursing students (Gallagher & Polanin, 2015; Lin et al., 2015; Oikarainen et al., 2019). However, Choi and Kim (2018) emphasized the importance of including contact with people from other cultures. Likewise, Hultsjo et al. (2019) found that students prefer to develop intercultural competence by interacting with different cultures and highlight the importance of "learning by doing," that is, by being exposed to patients from other cultures. Nonetheless, as mentioned above, only a very limited number of students can study abroad, and educators cannot guarantee that these interactions will happen during clinical internships in the home country. Our program offers the students both aspects in a controlled and accessible environment, using methodologies that have been proven effective and affordable for the institutions.

Limitations

The present study has several limitations. As mentioned in the Discussion, the GNC program was voluntary in both institutions, which can lead to a bias if the most internationally motivated students are the ones taking part in it. This leads to the second limitation: the small sample size of U.S. students. This limitation may be related to a higher rate of students who combine work and studies, a factor that may hinder their participation in extracurricular activities.

Additionally, no separate analysis of male and female results could be done due to the much higher female representation in the GNC program. All data were collected by self-report, which could lead to potential bias. There was no complementary quantitative or qualitative exploration of program outcomes or stakeholder perspectives. Furthermore, data were collected just after program completion. Thus, no information is available about the extent to which the CQ is improved due to each module or how this impact remains.

Conclusions

An educational program created by combining virtual exchange and clinical simulation-based experience is associated with statistically significant gains in the CQ of nursing students. This combination of collaborative and experiential learning based on IAH strategies has proven effective in increasing the capacity of nursing students to function effectively in situations where cultural diversity is present, which will positively impact their future competence as global health care workers.

This competence is essential to provide quality health care in increasingly diverse societies, ease the integration of nursing professionals in multicultural work teams, and facilitate their adaptation if they choose to work as nurses abroad. Implementation of this kind of program holds promise for making cultural experiences accessible to most nursing schools and students, as it does not involve expensive technologies or international travel. Still, institutional support and faculty engagement must be present. The role of the facilitators and the controlled environment guarantees a supervised learning process that is impossible to monitor in traditional mobility experiences or intercultural encounters in the home country. The program is easily adaptable to students with different levels of a second language and nursing competence. Further research is needed to explore if integrating this program into the curriculum could allow every student to develop their CQ, not only those with a previous international interest or background. Likewise, more research is needed to determine how to further improve some of the dimensions of CQ with this kind of program and to what extent this improvement remains.

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CRediT Statement

Maria Galan-Lominchar: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Writing – Original draft, Writing – Review and Editing. *Isabel Muñoz-San Roque*: Conceptualization, Formal analysis, Methodology, Project administration, Supervision, Writing – Review and Editing. *Cristino del Campo Cazallas*: Conceptualization, Project administration, Resources, Supervision. *Rochelle Mcalpin*: Data curation, Resources, Supervision. *David Fernández-Ayuso*: Data curation, Resources. *Ana SF Ribeiro*: Supervision, Writing – Review and editing.

Declaration of Competing Interest

The authors declare that they have no conflicts of interest related to this article. The research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest. The authors did not receive any

financial support or funding from any organization that would create a conflict of interest with the research presented in this article.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.outlook.2024.102137.

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CHAPTER 7

7. Characterization of the third publication

Authors: Maria Galan-Lominchar, Isabel Muñoz-San Roque, Cristino del Campo Cazallas, Rochelle Mcalpin, David Fernández-Ayuso, Blanca Egea Zerolo

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2023 JIF: 3.6

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2023 JCI: 1.67

Reference: Galan-Lominchar, M., Roque, I. M., Del Campo Cazallas, C., Mcalpin, R., Fernández-Ayuso, D., & Zerolo, B. E. (2024). Internationalization at home program significantly increases the self-efficacy of nursing students: A pre-post study. *Nurse Education Today*, *143*, Article 106361. https://doi.org/10.1016/j.nedt.2024.106361

Introduction to the publication: This article, published in the journal Nurse Education Today, presents findings on the improvement of self-efficacy in nursing students who participated in the Global Nursing Care program and differences in self-efficacy according to sociodemographic characteristics. It was submitted to the journal in February 2024, revised and adapted to the suggestions of the reviewers in July 2024, and accepted in August 2024; it will be included in the December 2024 volume.

The author of this thesis is the first author of the publication and, as stated in the CRediT Statement section of the article, her contribution to the article was as follows: writing –

review & editing, writing – original draft, resources, methodology, investigation, formal analysis, data curation, and conceptualization.

This is an open-access publication available at https://www.sciencedirect.com/science/article/pii/S0260691724002715?via%3Dihub
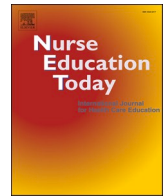
Research article

Internationalization at home program significantly increases the self-efficacy of nursing students: A pre-post study

Maria Galan-Lominchar [a,b,*], Isabel Muñoz-San Roque [c], Cristino del Campo Cazallas [d], Rochelle Mcalpin [e], David Fernández-Ayuso [a,b], Blanca Egea Zerolo [a,b]

[a] *San Juan de Dios Foundation, Madrid, Spain*
[b] *Comillas Pontifical University, Health Sciences Department, San Juan de Dios School of Nursing and Physical Therapy, Madrid, Spain*
[c] *Faculty of Human and Social Sciences, Comillas Pontifical University, Madrid, Spain*
[d] *Saius University Center, Universidad a Distancia de Madrid, Madrid, Spain*
[e] *West Coast University, USA*

A B S T R A C T

Background: Internationalization at home strategies seek to achieve a more inclusive and equitable higher education. Evidence about the impact of these strategies on students' self-efficacy is still scarce, even though this psychological construct is essential for the performance and well-being of nursing students. The Global Nursing Care program was designed to provide nursing students with an internationalization at home experience, combining a virtual exchange and international clinical simulation.
Aim: To determine the impact of the Global Nursing Care program on nursing students' self-efficacy.
Design: A quasi-experimental, analytic, and longitudinal study was conducted.
Settings and participants: The virtual module was carried out online, and the international simulations were developed in the Simulation Centers of the San Juan de Dios School of Nursing and Physiotherapy (Universidad Pontificia Comillas, Spain) and the West Coast University (USA). Seventy students participated in the program and 57 completed the pre-post questionnaire.
Methods: Data were collected using an online survey that included a sociodemographic questionnaire and the General Self-efficacy Scale. IBM's SPSS (version 28.0.1.1) was used to analyze data. Differences between self-efficacy levels were measured before and after the program, and according to sociodemographic characteristics.
Results: General self-efficacy was significantly augmented following program participation (pre-intervention: mean = 32.39, SD = 3.87; post-intervention: mean = 34.44, SD = 3.86; $p < 0.001$). No differences based on nationality, previous international academic experience or academic year were found.
Conclusions: An internationalization at home program based on virtual exchange and simulation improves nursing students' general self-efficacy. Future research can explore to what extent this effect persists over time.

1. Introduction

Internationalization of higher education is present in the strategic planning of universities and in national and international policies (Knight and Wit, 2018), and nursing studies are no exception. Over the last 30 years, internationalization strategies and efforts have been predominantly focused on internationalization abroad, that is to say, on the mobility of students, scholars, and programs across borders (De Wit, 2020). This traditional way of internationalization has a proven impact

on nursing students that has been widely documented, mainly focused on cultural competence or similar constructs (Matthews et al., 2021). However, international experiences influence other competencies, skills, personality traits, and attitudes (European Commission, 2019). Nursing students who spend time studying or training abroad benefit from an improvement in critical thinking, communication abilities, confidence to cope with demanding situations, adaptation to unfamiliar environments, personal awareness of social consciousness, the ability to make decisions and solve problems, and self-efficacy (Kelleher, 2013; Ulvund

* Corresponding author at: Escuela de Enfermería y Fisioterapia San Juan de Dios, Universidad Pontificia Comillas, Avenida San Juan de Dios, 1 28350, Ciempozuelos, Madrid, Spain.
E-mail address: mgalan.rrii@comillas.edu (M. Galan-Lominchar).

et al., 2023).

The main obstacle to this development is that international mobility programs are only accessible to a small percentage of students. For example, it was recently reported that only 2.4 % of 220 million higher-education students are mobile (UNESCO Institute of Statistics, 2023). Financial barriers, a low level of knowledge of foreign languages, separation from family, job obligations, and concerns about family-related responsibilities, are some of the most prominent barriers that stop nursing students from going abroad during their studies (Brown et al., 2016; Kelleher et al., 2016; Kent-Wilkinson et al., 2015). To overcome these obstacles, and since the beginning of the XXI century, a new trend in internationalization has been developed: Internationalization at Home (IAH). It aims to integrate international and intercultural dimensions into all student curricula (Beelen and Jones, 2015). Strategies based on IAH have numerous benefits on various levels. Indeed, they guarantee the access of all students to internationalization programs and have been shown to be indispensable in crisis situations like the COVID-19 pandemic. Additionally, they favor environmental sustainability (Rumbley, 2020), equity, and accessibility (De Wit and Jones, 2018). Thus, they are encouraged by numerous institutions worldwide, such as the European Parliament (De Wit et al., 2015), the European Higher Education Area (2012), the European Commission (2013), and the American Council on Education (2023).

These strategies have been shown to improve students' global competencies, regardless of their capacity to spend time abroad (Huang et al., 2023). Furthermore, Soria and Troisi (2014) found that students participating in IAH activities may experience a greater development of global competencies than those simply studying abroad.

1.1. Virtual exchange and simulation

Virtual exchange has been defined as "technology-enabled, people-to-people education programs sustained over a period of time in which sustained communication and interaction take place between individuals or groups who are geographically separated, with the support of facilitators and/or educators" (European Union and EACEA, 2020, p. 3). Other terms are also used to address this type of program, including Collaborative Online International Learning (COIL) (Jager et al., 2019). The use of this tool has grown exponentially in recent years (O'Dowd, 2021).

In addition, due to the characteristics of the nursing profession, clinical simulation has been widely used to develop competencies in a safe space for both the student and the patient (Koukourikos et al., 2021). According to Gaba (2004, p. 12), simulation is "an educational technique that replaces or amplifies real experiences with guided experiences that evoke or replicate substantial aspects of the real world in a fully interactive manner." This *replication of substantial aspects of the real world* makes clinical simulation an ideal instrument for internationalization in healthcare disciplines, as some authors have already demonstrated (Chae et al., 2021; Foronda et al., 2018; Marja and Suvi, 2021).

1.2. Self-efficacy

The concept of self-efficacy was coined by Albert Bandura (1977) and is defined as people's judgment of their capabilities to complete a task successfully (Bandura, 1989). According to Bandura (1989), people who doubt their capabilities focus on concerns over personal deficiencies, instead of how best to execute activities, and give up quickly in the face of difficulties. This situation makes them prone to stress, anxiety, and depression (Bandura, 1989). In contrast, people who are sure of their capabilities approach difficult tasks as challenges to be overcome rather than as threats to be avoided; they maintain a strong commitment to them and redouble their efforts in the face of failures. This orientation reduces stress and lowers vulnerability to depression (Bandura, 1989).

Two different positions can be identified in the conceptualization of self-efficacy. Bandura (2012) understands self-efficacy as a specific domain-related construct, while other authors, such as Schwarzer (2014) and Sherer et al. (1982), posit that various experiences of failure and success in different domains may create generalized beliefs of self-efficacy. Thus, general self-efficacy refers to a broad and stable sense of personal competence to deal effectively with a variety of stressful situations (Schwarzer and Warner, 2013).

Evidence shows that self-efficacy plays a key role in the well-being and performance of nurses and nursing students. Nway et al. (2023) and Demir et al. (2022) suggested that self-efficacy negatively correlates with nursing students' depressive tendencies. Additionally, higher self-efficacy is associated with lower burnout in nursing students (Lopes and Nihei, 2020) and nurses (Consiglio et al., 2014), and higher levels of care for nurse-patient interactions (Eren and Turkmen, 2020). It also has a mediating effect between professional identity and competence among nursing students (Mohamadirizi et al., 2015; Yao et al., 2021), and has been shown to be positively correlated with self-esteem in nursing professionals (Pérez-Fuentes et al., 2019) and general health (Dadipoor et al., 2021). In this sense, self-efficacy must be a key aspect to consider in nursing education.

Traditional mobility programs have shown an impact on the general self-efficacy of students (Nguyen et al., 2018; Petersdotter et al., 2017), which may last several years after the international experience (Nada and Legutko, 2022). However, some authors suggest that studying abroad does not guarantee this improvement (Emirza et al., 2021).

Although the main objective of IAH is the acquisition of intercultural and international competencies, it is logical to think that engaging students in these kinds of activities can also provide supplementary benefits. Thus, this study aimed to determine the impact of an IAH program on the general self-efficacy of nursing students.

2. Methods

2.1. Intervention: The Global Nursing Care program

The Global Nursing Care (GNC) program is a mixed-method IAH program that combines two modules: a virtual exchange and an international simulation. It is based on a constructivist, collaborative, and experiential learning approach, and its main objective is to develop nursing students' intercultural and international competencies. It was created and implemented by a team composed of faculty members from Comillas Pontifical University (Madrid, Spain) and West Coast University (USA), in March and October 2022. The virtual module was carried out online, and the international simulation took place in the simulation centers of both institutions.

A nursing professor with experience in virtual collaborative programs and clinical simulation facilitated both modules. The choice of methodologies aimed to provide the students with an activity that replicates an international exchange as much as possible. The virtual exchange, designed following the premises of the Collaborative Online International Learning (COIL) approach developed by The State University of New York (SUNY Commons, 2021), allows the students to interact with colleagues from other cultures, create new relationships, work collaboratively, acquire knowledge about different cultures, develop skills to solve intercultural conflicts, and understand different healthcare systems and the role of nurses in them. Teams with students from both countries were created to participate in synchronous and asynchronous activities for five weeks. The international simulation allows them to apply what they have learned in the virtual module and to experience working as a nurse in a foreign country as realistically as possible. It was designed following the Healthcare Simulation Standards of Best Practice of the International Nursing Association for Clinical Simulation and Learning (Watts et al., 2021). The activity consisted of three consecutive scenarios performed in a simulation center that replicated an outpatient setting in a foreign country (a US hospital for

Spanish students and a Spanish hospital for US students). Each student participated in the session individually. The simulation modality included patients/persons with native/high proficiency language skills. The simulation lab was set up to provide maximum fidelity and realism, not only in the clinical aspects but also in considering cultural and operational differences between clinical settings in both countries. After each debriefing, the student was offered a chance to repeat the previous scenario if needed. An outline of the program is presented in the supplementary material (supplementary Table S1).

The achievement of the intended learning outcomes was assessed by two different team members. These members evaluated the students' work and activities, their participation in social events, and their performance in the simulated scenarios with a checklist and a rubric created explicitly for the program.

Despite the intention of making the program mandatory for all students, the rigidity of the curricula of both institutions prevented it from being embedded in them, and the students joined the program voluntarily. Since Spanish students were obligatorily enrolled in an English language course during their nursing studies, English was the language selected as the lingua franca for the virtual exchange, and at least an intermediate – upper intermediate level was necessary for Spanish students to join the GNC program. The international simulation was performed in English by the Spanish students and in Spanish by the US students. No language requirement was set for the US students, and their Spanish language skills varied from elemental to native speaker. During the scenarios, they were allowed to use any resource they deemed necessary to understand and express themselves properly.

2.2. Study design and participants

A quasi-experimental study was designed. Convenience sampling was adopted for subject recruitment. Seventy undergraduate nursing students participated in the GNC program (GNC students), 47 in Spain and 23 in the USA, from a total of 860 nursing students (450 in Spain and 410 in the USA). The survey was given to all participants, and it was completed by 57 students (81.42 %).

2.3. Data collection and procedure

The faculty asked the students in person to voluntarily complete an online survey that included the measurement tools. The GNC students answered the survey before (pre) and after (post) the program.

2.4. Measures

The data collection instrument included a sociodemographic questionnaire and the Generalized Self-Efficacy Scale. Sociodemographic data included gender, nationality, year of studies, and previous participation in international academic experiences; these were collected only as a baseline.

The Generalized Self-Efficacy Scale is a unidimensional 10-item scale created by Jerusalem and Schwarzer (1992) that "assesses the strength of an individual's belief in his/her ability to respond to novel or difficult situations and to deal with any associated obstacles or setbacks" (Schwarzer and Jerusalem, 1995, p. 35). It showed high reliability in diverse studies, with Cronbach's alpha between 0.82 and 0.93 (Schwarzer and Jerusalem, 1995). It has been culturally adapted and validated across 25 nations (Scholz et al., 2002). The Spanish version, adapted by Baessler and Schwarzer (1996), and with a Cronbach's alpha of 0.81, was administered to the Spanish students. Responses were made on a 4-point scale, from "Not at all true" to "Exactly true", and the final composite score was calculated by summing up the responses with a range from 10 to 40. The scale showed high reliability in our sample, with Cronbach's alpha values of 0.84 and 0.87 in the pre- and post-test, respectively.

2.5. Data analysis

IBM's SPSS (version 28.0.1.1) was used to analyze data. The GNC group's pre-test and post-test data were compared using a paired sample t-test. Independent t-tests and an ANOVA test were conducted to compare differences between self-efficacy levels according to sociodemographic data. The variance homogeneity assumption was analyzed using Levene's test, and the normality assumption was analyzed using Shapiro-Wilk's test. The alpha level for statistical significance was set at 0.05 (two-sided significance test). The effect size was determined by calculating Cohen's d for small (0.2), medium (0.5), and large effects (0.8), or Eta squared for small (0.01), medium (0.06), and large effects (0.14) (Cohen, 1992).

2.6. Ethical considerations

The study was reviewed and approved by the Ethics Committee at the Comillas Pontifical University (determination 2022/1). Student participation in the program was fully voluntary and had no impact on their grades. In the virtual module, students were advised about potential triggers related to cultural issues, and they were encouraged to talk to the facilitator if they were experiencing emotional discomfort to ensure student psychological safety. In the international simulation scenarios, a safe space was created in the pre-briefing, and emotional support was offered to students if needed after each debriefing. Informed consent was obtained at each data collection point. Responses were voluntary and anonymous at all data collection and analysis stages, with before and after responses linked using a unique identifier generated by each respondent.

3. Results

3.1. Participant characteristics

Sociodemographic data are shown in Table 1. Most students were female (96.5 %). Students were enrolled in one of the four academic years. Regarding previous international academic experience, the rate of students who had participated in an academic period abroad at any stage of their pre-university education was 40.4 %.

3.2. General self-efficacy

The program's impact on self-efficacy is presented in Table 2. After the GNC program, there was a significant increase in the students' total self-efficacy ($p < 0.001$), with pre- and post-test scores of 32.39 ± 3.87 and 34.44 ± 3.86 (mean ± standard deviation), respectively.

An exploratory analysis was conducted to determine the relationship

Table 1
Sociodemographic data.

	GNC students ($n = 57$)	
	%	n
Gender		
Female	96.5	55
Male	3.5	2
Year of studies		
1st	17.5	10
2nd	28.1	16
3rd	22.8	13
4th	31.6	18
Nationality		
Spanish	71.9	41
American	28.1	16
Previous international academic experience		
Yes	40.4	23
No	59.6	34

Table 2
Pre- and post-test comparison of general self-efficacy in GNC students.

		M	SD	t	p	Cohen's d
Total self-efficacy	Pre-test	32.39	3.87			
n = 57	Post-test	34.44	3.86	4.44	<0.001	0.53

M = mean; SD = standard deviation.

between sociodemographic and self-efficacy levels, except for gender, due to the very small number of male participants. The means in terms of nationality were higher in the American group in the pre-test (32.69 ± 4.99) than in the Spanish group (32.27 ± 3.38), as well as in the post-test (35.25 ± 3.38 in the American group versus 34.12 ± 4.04 in the Spanish group). Total self-efficacy scores according to previous international experience were higher in both the pre-test (32.56 ± 4.07) and the post-test (35.00 ± 3.86) for the group with no international academic experiences, compared to the group of students who had previously participated in international academic experiences (pre-test: 32.13 ± 3.58; post-test: 33.61 ± 3.82). However, no significant differences were found in any case (Table 3). Then, an ANOVA test was conducted to compare differences in self-efficacy levels according to the year of studies (Table 4). The highest means were found in the post-test scores of 2nd-year students (35.19 ± 3.95), while the lowest means were in the pre-test scores of 3rd-year students (31.00 ± 3.94). Variance homogeneity assumption was met (pre-test: Levene $F = 1.24$ and $p > 0.05$; post-test: Levene $F = 0.07$ and $p > 0.05$), as well as normality assumption according to Shapiro-Wilk's test (pre-test and post-test >0.05). Again, no significant statistical difference was found among students from different academic years.

4. Discussion

Our study suggests that an IAH program may significantly increase students' perception of general self-efficacy. No previous studies have been conducted using this combination of educational methods, but our research confirms results from studies that addressed each methodology separately. Some authors found that virtual exchange may impact different types of domain-specific self-efficacy (Naicker et al., 2022; Romero-Rodríguez et al., 2023) and general self-efficacy (Van Der Velden et al., 2016), but no studies related to general self-efficacy and the use of this methodology with nursing students were found.

The use of clinical simulation to enhance the general self-efficacy of nursing students is well-known (Abusubhiah et al., 2023; Al Gharibi et al., 2021; Li et al., 2019; Ruiz-Fernández et al., 2022). However, we found that these studies, focused on measuring the relationship between general self-efficacy and nursing simulation, did not include any

intercultural or international component in the simulation scenario. In contrast, studies including scenarios that involved either interaction with a patient from a different cultural background (Chae et al., 2021; Marja and Suvi, 2021), or the use of a second language (Boruff, 2020; Karaçay et al., 2022; Whited et al., 2023), showed the development of domain-specific self-efficacy, such as cultural or communicative self-efficacy.

According to Bandura (1977), the experience of overcoming which arises from effective performance is the main source of self-efficacy. The present study shows that allowing students to experience an international and intercultural exchange, even without real immersion in a foreign country, and providing them with the opportunity to apply the knowledge, skills, and attitudes they have acquired in a simulated global environment, increases their general sense of competence. Students translate the success they experience in the GNC program into a greater confidence of being able to cope with a broad range of challenges.

Our results suggest that student nationality has no relation to the levels of self-efficacy on the baseline. According to Pearl et al. (2023), a learner's culture may influence their perception of self-efficacy when interacting with people from different cultures, due to different levels of tolerance of ambiguity associated with different cultures. However, these differences have been found mainly between individualist and collectivist cultures (Scholz et al., 2002), and we can consider both the US and the Spanish cultures as Western cultures with more individualist than collectivist traits. This may explain the similarity in the self-efficacy levels.

We also found that previous academic international experiences do not influence general self-efficacy levels. Remarkably, this finding contradicts the studies that suggest that an international academic experience leads to a higher perception of self-efficacy (Cubillos and Ilvento, 2012; Emirza et al., 2021; Nada and Legutko, 2022). This discrepancy may indicate that the rise in self-efficacy detected in those studies does not last long. This may also occur in the improvement of self-efficacy measured in this study and further research is needed to clarify this.

Similarly, we did not find a significant difference in the levels of self-efficacy between students of different years. This finding is not consistent with the results of Dogu et al. (2022), who found that senior nursing students had a higher perceived self-efficacy than second and third-year students. Nor are they consistent with those of Chen et al. (2019), who showed that, conversely, self-efficacy decreased as the year of studies increased. Nursing students are expected to demonstrate self-efficacy levels that are consistent with their professional development (American Association of Colleges of Nursing, 2021), so it may be of concern that our data shows no better levels of self-efficacy in senior students than in previous academic years. This may mean that more attention should be given to improving self-efficacy in nursing students

Table 3
General self-efficacy in GNC students relating to nationality and previous international experience.

		Nationality						
		Spanish n = 41		American n = 16				
		M	SD	M	SD	t	p	Cohen's d
Total self-efficacy	Pre-test	32.27	3.38	32.69	4.99	0.37	0.716	0.09
	Post-test	34.12	4.04	35.25	3.38	0.99	0.238	0.30

		Previous international experience						
		Yes n = 23		No n = 34				
		M	SD	M	SD	t	p	Cohen's d
Total self-efficacy	Pre-test	32.13	3.58	32.56	4.07	0.41	0.685	0.111
	Post-test	33.61	3.82	35.00	3.86	1.34	0.186	0.36

M = mean; SD = standard deviation.

Table 4
General self-efficacy in GNC students in relation to the year of studies.

		Year of studies								F ratio	p	η^2
		1st n = 10		2nd n = 16		3rd n = 13		4th n = 18				
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*			
Total self-efficacy	Pre-test	32.40	3.78	32.50	4.60	31.00	3.94	33.28	3.10	0.88	0.458	0.05
	Post-test	35.10	3.75	35.19	3.95	32.77	3.94	34.61	3.77	1.12	0.349	0.06

M = mean; *SD* = standard deviation.

and not simply take it for granted that students will naturally develop it throughout their studies.

Research shows that higher general self-efficacy brings great benefits for the well-being of nurses and nursing students (Dadipoor et al., 2021; Nway et al., 2023; Pérez-Fuentes et al., 2019; Yao et al., 2021), as well as for their clinical competence (Yao et al., 2021; Yu et al., 2021). Thus, we can state that implementing this kind of program may benefit nursing students beyond the already-known acquisition of intercultural and international competencies.

5. Limitations

This study has several limitations. The small sample size results from the impossibility of embedding the program in the formal curricula of universities. The even smaller sample size of US students may be caused by a lower foreign language learning motivation, which is one of the key factors that determines the participation of nursing students in IAH programs (Wong et al., 2023). The small number of male participants made it impossible to analyze the data according to gender. All data were collected by self-reporting immediately after program completion, which could lead to potential bias. Thus, no information was available on the extent to which self-efficacy is improved in relation to each module or how the impact shown in this study persists over time.

6. Conclusions

An educational program that combines virtual exchange and clinical simulation is associated with a statistically significant increase in the general self-efficacy of nursing students, measured just after the completion of the program. This combination of collaborative and experiential learning with an international perspective has been shown to improve the sense of personal competence that allows nursing students to face stressful situations, which can be expected to arise in their daily work in healthcare settings. In addition to this work-related benefit, the relationship between self-efficacy and well-being suggests that this improvement may positively impact their psychological well-being as well, which is an added value.

Although the primary purpose of the IAH is the achievement of international and intercultural competencies for all students, the study found that this program positively influences the general self-efficacy of participants, an aspect that should not be overlooked. If, in addition to providing quality healthcare in increasingly diverse societies, and facilitating the integration of nursing professionals in multicultural work teams, we can also provide students with better tools to deal with the challenges faced in their personal and professional lives, the benefits will be even greater. It is our responsibility as educators to make these benefits accessible to all, and IAH has been shown to be effective in achieving this end. Further research, however, is needed to explore to what extent this improvement persists over time.

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CRediT authorship contribution statement

Maria Galan-Lominchar: Writing – review & editing, Writing – original draft, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Isabel Muñoz-San Roque:** Writing – review & editing, Supervision, Methodology, Formal analysis, Conceptualization. **Cristino del Campo Cazallas:** Supervision, Resources, Conceptualization. **Rochelle Mcalpin:** Supervision, Resources. **David Fernández-Ayuso:** Validation, Resources. **Blanca Egea Zerolo:** Writing – review & editing, Project administration.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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PART IV

Conclusions, Limitations, and References

Chapter 8. Conclusions

Chapter 9. Limitations and Future Research

Chapter 10. References

CHAPTER 8

8. CONCLUSIONS

8.1. GENERAL CONCLUSIONS

The main objective of this research was to determine the impact of an IaH program that combines virtual exchange and an international clinical SBE on the cultural intelligence and general self-efficacy of nursing students. Considering the results obtained, we can conclude that the GNC program is associated with a statistically significant improvement in the cultural intelligence and general self-efficacy of participating students.

Regarding our specific objectives related to the change in CQ, we can also conclude that this improvement occurs not only overall but also in each of the CQ dimensions, that the CQ is significantly higher after the GNC program in participating students than in non-participating students, and that this improvement is independent of their nationality.

These results allow us to affirm that the combination of collaborative and experiential learning created in the GNC program can be a useful tool based on IaH strategies to improve the ability of students to perform in culturally diverse situations.

The need for culturally competent nursing professionals is increasing as globalization makes our societies more diverse. Nurses' first and foremost obligation is to provide effective care to patients, families, and communities, and this cannot be achieved without offering culturally adapted care, as many institutions and organizations have already advised.

Although it may be viewed as secondary, the integration of nurses into multicultural teams must not be forgotten. The nursing professional works not only with patients but also with other healthcare providers who may have different cultural backgrounds.

Interactions with diverse communities will occur if nurses choose to work abroad, so migrant nurses would definitely benefit from participating in programs similar to GNC. However, non-migrant nurses will also encounter cross-cultural interactions in their local environments and must be culturally intelligent to be competent professionals.

Traditionally, these cultural aspects have been considered secondary in nursing schools, and the achievement of these cultural-related competencies has been confined to elite students who can participate in study abroad experiences. Programs like GNC may effectively bring internationalization and its various benefits to all students, regardless of their ability to access international mobility experiences.

Although the main objective of the GNC program was the improvement of intercultural and international competencies, this study found that it was also useful in improving the general self-efficacy of nursing students based on higher levels of self-efficacy after the completion of the program than before. This implies that this kind of educational tool may impact different personal traits and soft skills beyond cultural competencies, just as traditional mobility does, which are not usually studied in research related to IaH programs. Regarding our last specific objective, we can also conclude that this improvement was not determined by students' nationality, previous international academic experience, or year of studies.

This improvement in general self-efficacy may allow nursing students to face stressful situations more effectively, and the evidence-based relationship between self-efficacy and well-being may also positively impact their psychological health.

Evidence about the development of self-efficacy throughout nursing studies is contradictory, so it should not be taken for granted that it will improve as students advance in their studies. Activities such as GNC that can contribute to that end should not be overlooked.

The GNC program has more advantages: the controlled environment in the virtual exchange component and international clinical simulation provides the students with a supervised learning process that can be replicated and assessed, and, as mentioned in the first article, the program is easily adaptable to students with different second language and nursing competencies. As GNC does not involve international travel, it is sustainable, inclusive, and accessible. While institutional support and engagement are required, it does not involve expensive technologies. It is affordable and feasible for most nursing schools, where virtual activities and clinical simulation are the order of the day. It does not have a significant impact on the environment, unlike international travel, and it can be used even in cases of mobility restrictions.

Although IaH should not be considered a substitute for traditional mobility but a continuous process throughout the curriculum, the integration of activities like GNC in the formal curriculum may yield obvious benefits for all students and provide a less elitist approach to the IHE. As nursing educators, it is our obligation to ensure that all students develop these competencies. This obligation is toward our students, as well as our patients and communities, the ultimate beneficiaries.

<div align="right">**CHAPTER 9**</div>

9. LIMITATIONS AND FUTURE RESEARCH

Although individual limitations are mentioned in the articles, several global limitations are present in the study:

- Although the first intention was to embed the GNC program in the formal curricula of both institutions, this was impossible due to the inflexibility of the nursing programs, and enrolment was voluntary. This directly contradicts one of the premises of IaH, that is, that it should not be elective. To alleviate this inconvenience, the program was offered to the highest possible number of students, but the enrolment rate was still quite low. This could be due to the level of English required for Spanish nursing students, the high workload of students who combine work and studies, or even a lack of awareness among students about the benefits of participation in an IaH program.

- The fact that program participation was elective may have led to a bias if the most internationally motivated students predominantly participated in it. A bias could also be present since all data were collected by self-report.

- The small sample size prevented the consideration of gender in the statistical analyses. Gender data were collected in the questionnaire, and as the number of male nursing students was much smaller than that of female nursing students in both institutions, we could consider the sample representative of the population. However, the number of male students participating in the GNC program was insufficient to allow accurate statistical analysis according to gender (96.5% women, 3.5% men).

- No data were collected between the virtual exchange component and the international clinical simulation. Thus, no information is available about how much the variables improved due to each module.

- No data were collected several months/years after the completion of the program. Thus, no information is available about the persistence of this impact.

Future research could be focused on overcoming these limitations and studying the impact of this kind of program on other variables that also determine nursing students'

education, employability, and personal development. Factors determining why nursing students participate or not in IaH activities should also be explored to maximize the spread of IaH when its integration into the obligatory curriculum is prevented. A comparison between the impact of these activities and the impact of traditional mobility on students could also provide useful information for higher education educators.

<div align="right">**CHAPTER 10**</div>

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