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Editorial — O poder da comunicação em saúde

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Esta nova edição do *Jornal de Investigação Médica* transporta-nos para um mundo em que é evidenciado o poder de uma boa comunicação em saúde.

A comunicação em saúde é uma abordagem multifacetada e multidisciplinar, com o objetivo de informar adequadamente para que essa informação produza conhecimento efetivo e apropriação por parte do seu destinatário direto. Uma comunicação em saúde efetiva junto da sua audiência pode melhorar a saúde em condições agudas ou crónicas, reduzir o impacto de fatores socioeconómicos, étnicos ou raciais na saúde e melhorar a efetividade na prevenção e promoção de saúde (Thomas, 2006, p .4).

A comunicação em saúde tem-se tornado um campo cada vez mais relevante na saúde pública, com as questões relacionadas com a segurança das pessoas, o controlo das doenças (e das pandemias) e dos riscos para a saúde das pessoas. A comunicação em saúde tem um forte papel na promoção da saúde e no empoderamento das pessoas para que possam controlar a sua saúde e tomar melhores decisões, gerando assim mais e melhores resultados em saúde. Também a nível individual, se um paciente não conseguir ler a informação do rótulo de prescrição, ou a sua memória falhar, os riscos de haver uma adesão deficitária, ou de poderem surgir eventos adversos num determinado tratamento, aumentam exponencialmente.

Ao longo do ciclo de vida e na área da saúde, é essencial a ligação com as competências parentais, por exemplo no caso da doença em crianças pequenas. O artigo "Capacitação parental no lactente com febre. Enfermeiro especialista em saúde infantil e pediátrica: revisão integrativa", de Lucrécia Abreu et al., permite descortinar técnicas e estratégias para fazer face a esse momento de crise dos progenitores aquando da criança com febre. Neste sentido, o Modelo ACP — Assertividade, Clareza e Positividade (Vaz de Almeida, 2021, 2023) tem mostrado ser uma ferramenta adequada para interagir com os vários públicos, com e sem baixa literacia em saúde. Este Modelo de comunicação baseia-se nas competências de comunicação e deve ser usado de forma intergrada e interdependente. A sua facilidade de assimilação tem permitido a muitos profissionais aumentar o nível de literacia em saúde dos seus utentes e conseguir processos mais eficazes de adesão terapêutica (Vaz de Almeida, 2021, 2023).

No processo de comunicação com o doente ou com a família, como vimos no caso do artigo "Protocolos de transmissão de más notícias utilizados em contextos de cuidados paliativos: uma revisão de literatura", de Rita Figueiredo et al., a interação é fundamental, assente também em processos verbais e não verbais de proximidade com os destinatários das notícias.

A comunicação em saúde é um instrumento da literacia em saúde para um melhor acesso, compreensão, avaliação e, sobretudo, uso dos recursos de saúde. Nos três estudos, intitulados "Simulação como método de ensino na formação em enfermagem na prevenção e controlo de infeções associadas aos cuidados de saúde em países asiáticos: um estudo qualitativo", de Do Thi Thu Hien et al., "Experiências do estudante de enfermagem na aprendizagem da prevenção e controlo de IACS em países asiáticos através do uso de simulação baseada em cenários: um estudo qualitativo exploratório", de Sovannarith Em et al. e "Experiência de aprendizagem de estudantes de enfermagem na prevenção e controlo de infeções associadas aos cuidados de saúde (PC-IACS) em países asiáticos: um estudo qualitativo exploratório", de Manndy Nget et al. percebemos como as técnicas associadas a uma boa comunicação fazem a diferença nas aprendizagens e praticas em saúde.

Por fim, no estudo intitulado "Estratégias inovadoras de uma comunidade educativa em resposta a uma situação de crise", de Filipa Duque et al., apela-se à criação de caminhos que possam colmatar os momentos de crise que são vividos por estas comunidades e que vão além das crises pandémicas. Uma vez mais, entende-se o processo de comunicação como uma das ferramentas no processo e na própria criação dessas estratégias para enfrentar a crise.

Rowlands et al. (2014) destaca o papel dos determinantes sociais da saúde, como a influência da acessibilidade ou navegabilidade no sistema de saúde, muitas vezes motivado por uma inadequação da comunicação aos vários segmentos de pessoas com baixa literacia em saúde. Uma das principais características da comunicação em saúde é a sua natureza multidisciplinar, a sua integração e adaptação aos vários cenários e a sua inequívoca necessidade num mundo cada vez mais complexo. A saúde precisa da comunicação para conseguir fazer a sua rota.

É preciso saber chegar às pessoas e envolvê-las nos processos e também nas decisões. Neste sentido, esta nova edição do *JIM* vem trazer luz sobre temas atuais e necessários. Parabenizamos todos os que publicam neste *Jornal de Investigação Médica* e noutros jornais e revistas. A curiosidade e a evidência científica permitem avançar no terreno das soluções e estratégias para uma melhor saúde.

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Capacitação parental no lactente com febre. Enfermeiro especialista em saúde infantil e pediátrica: revisão integrativa

Parental training for infants with fever. Specialist nurse in pediatric child health: integrative review

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Resumo

Enquadramento: A febre é um motivo de grande preocupação e os pais/cuidadores, de forma excessiva, recorrem aos recursos disponíveis, saturando-os.

Objetivo: Identificar as intervenções educativas, desenvolvidas pelo Enfermeiro Especialista em Saúde Infantil e Pediátrica (EESIP), descritas na literatura, nos Cuidados de Saúde Primários (CSP) e hospitalares, na capacitação parental ao cuidar do lactente com febre.

Metodologia: Revisão Integrativa em bases de dados científicas. Recorreu-se à estratégia PICo, delineando-se a questão de investigação: "Quais as intervenções educativas, descritas na literatura, nos CSP e hospitalares, do EESIP, na capacitação parental ao cuidar do lactente com febre?".

Resultados: Amostra final constituída por cinco artigos. Intervenções educativas categorizadas em formato papel, digital ou comunicação verbal direta, no contexto dos CSP e Hospitalares.

Conclusão: Diversas foram as intervenções enumeradas com repercussões positivas na capacitação de pais e cuidadores de lactentes com febre. Tais repercussões surtem impacto na afluência aos serviços de saúde, custos associados, melhoria da qualidade dos cuidados, aumento da satisfação de famílias e profissionais, bem como redução da ansiedade parental.

Palavras-Chave: Capacitação Parental; Competências; Enfermagem Pediátrica; Febre; Lactente.

Abstract

Background: Fever is a cause for great concern and parents/caregivers, excessively, resort to available resources, saturating them.

Objective: Identify the educational interventions developed by the Specialist Pediatric and Child Health Nurse (SPCHN), described in the literature, in Primary Health Care and hospitals, in parental training when caring for infants with fever.

Methodology: Integrative Review on scientific databases. The PICo strategy was used, outlining the research question: "What are the educational interventions, described in the literature, in primary health care and hospital settings, developed by the SPCHN, to parental capacity in caring for infants with fever?".

Results: Final sample consisting of five articles. Educational interventions categorized in paper, digital or direct verbal communication format, in the context of Primary and Hospital Health Care.

Conclusion: There were several interventions listed with positive repercussions on the training of parents and caregivers of infants with fever. Such repercussions have a positive impact on access to health services, associated costs, improved quality of care, increased satisfaction of families and professionals, as well as reduced parental anxiety.

Keywords: Fever; Infant; Parental Training; Pediatric Nursing; Skills.

1. Introdução

O Comité Português para a UNICEF, na Convenção sobre os Direitos da Criança, entende a criança como todo o ser humano menor de 18 anos, salvo se, nos termos da lei aplicada, atingir a maioridade mais cedo. Neste sentido, compete-lhe o direito de gozar do melhor estado de saúde possível e de usufruir dos serviços médicos necessários. Aos pais, cuidadores e crianças, deve ser garantido o acesso à informação e apoio na utilização de conhecimentos básicos sobre a saúde.

Segundo a Classificação Internacional para a Prática de Enfermagem, o papel parental é um foco de atenção do enfermeiro. Além dos elementos parentais, por vezes, a criança possui um cuidador, entendido como aquele que atende às necessidades de um dependente (International Council of Nurses, 2024).

Neste sentido, deve-se considerar o cuidado centralizado na família, atendendo à sua influência em cada membro. Os Cuidados Centrados na Família (CCF) compreendem a conceção de que famílias e profissionais são parceiros, nos cuidados à criança, enaltecendo princípios de dignidade e respeito com partilha de informação e colaboração. Tal abordagem implica uma avaliação sistemática da complexidade e necessidades dos membros familiares, identificando as respetivas crenças e valores, estilo de comunicação e capacidade para decidir (Barbieri-Figueiredo, 2015).

Enquanto um dos atributos basilares dos CCF, encontra-se a parceria de cuidados. Anne Casey, citada por Ramos e Barbieri-Figueiredo (2020), desenvolveu um modelo de enfermagem pediátrica, intitulado por "Modelo de Parceria de Cuidados", pautado pelo respeito, comunicação, partilha de informação, empatia, visão holística, negociação e parceria.

Os cuidados são planeados, face às capacidades e desejo de envolvimento dos pais e/ou cuidadores, numa relação de colaboração recíproca. Deste modo, preconiza-se que pais/cuidadores e enfermeiros estejam num patamar de igualdade, dado que ambos negoceiam e partilham cuidados, tomando, conjuntamente, as decisões. Na equipa de saúde, o EESIP capacita a família, criando oportunidades com recurso aos meios adequados para que possa desenvolver e adquirir competências (Ramos & Barbieri-Figueiredo, 2020).

Atendendo aos focos de atenção na prática do EESIP, a instituição de estratégias de intervenção centradas na criança e família, potenciam os ganhos em saúde. À luz da Orientação n.º 005/2018, a febre, enquanto foco do enfermeiro, adota um caráter relevante, dada a sua frequência, em idade pediátrica. Assim, diz respeito a uma elevação da temperatura corporal ≥ 1ºC, superior à média diária individual, face ao local de avaliação. Quando se desconhece a temperatura média diária, considera-se febre, quando a temperatura retal é ≥ 38ºC, axilar e oral ≥ 37,6ºC e timpânica ≥ 37,8ºC.

Na faixa etária pediátrica, a febre constitui uma das principais causas de idas ao Serviço de Urgência Pediátrica (SUP) (Leigh et al., 2020). A menor idade da criança foi associada ao aumento das idas não urgentes ao SUP, conduzindo a custos extraordinários de saúde e, consequentemente, impacto na qualidade dos cuidados aí prestados (Kirby et al., 2021). Regra geral, no domínio das situações não urgentes, o que se verifica é uma falta de entendimento, por parte dos pais/cuidadores, sobre os conhecimentos básicos (Edwars et al., 2020).

Os cuidados adotados, frequentemente, não são os recomendados. A título de exemplo, salienta-se o alternar antipiréticos, sobredosagem, preocupação dos pais/cuidadores em não medicar para os profissionais atestarem a veracidade ou uso de soluções alcoólicas para reduzir a temperatura (Pitoli et al., 2021).

Atendendo à associação da menor idade da criança ao maior recurso aos serviços de saúde, será abordado o lactente até aos 12 meses (Ramos & Barbieri-Figueiredo, 2020).

Face ao conceito de que a família, particularmente os pais ou cuidadores, segundo o Regulamento n.º 351/2015, são os melhores prestadores de cuidados à criança. O compromisso do EESIP passa pela colaboração, com cada família, na adaptação ao seu processo de saúde-doença, interagindo, através do apoio, ensino, instrução e treino.

Assim, objetiva a capacitação da família para a gestão eficiente dos cuidados à criança, fornece o suporte necessário, dotando-a de conhecimentos e competências. Para finalizar, emerge a necessidade de aferir, em evidência científica, o papel do EESIP, na capacitação parental ao cuidar do lactente com febre, tendo em vista a adequação de cuidados, à luz da Prática Baseada em Evidências.

2. Metodologia

Segundo Araújo (2020), recorreu-se à estratégia PICo (Population/Patient/Problem–Interest–Context) e, apesar de não contemplar o critério da intervenção, correspondente à letra I, é possível utilizá-la na recuperação da informação. O P corresponde aos pais ou cuidadores do lactente com febre até aos 12 meses. A literatura considera lactente desde 1 aos 23 meses, no entanto, atendendo às exigências e desafios que acarreta o primeiro ano de vida, selecionou-se o período compreendido entre o primeiro mês até aos 12 meses, antevendo repercussões positivas ao longo de toda a infância. O I diz respeito às intervenções desenvolvidas pelo EESIP e o Contexto consistirá nos serviços de saúde, nomeadamente CSP e hospitalares.

A questão de investigação consistiu em "Quais as intervenções educativas, descritas na literatura, nos CSP e hospitalares, do EESIP, na capacitação parental ao cuidar do lactente com febre?". Deste modo, selecionaram-se os descritores Medical Subject Headings (MeSH) e os equivalentes Descritores em Ciências da Saúde (DeCS), combinados com os termos booleanos "AND" e "OR", conduzindo à frase booleana "(infant AND fever) AND (caregivers OR parents) AND (pediatric nursing OR training program OR health education) AND (hospital, pediatric OR primary health care)".

A pesquisa deu-se através do texto integral e realizou-se nas bases de dados selecionadas, como CINAHL® Complete, MEDLINE® Complete, Nursing & Allied Health Collection: Comprehensive, Cochrane Central Register of Controlled Trials e Library, Information Science & Technology Abstracts, pertencentes à plataforma EBSCOhost®, disponibilizada pela Ordem dos Enfermeiros. Além disso, recorreu-se à plataforma RCAAP, base de dados B-on e PubMed®.

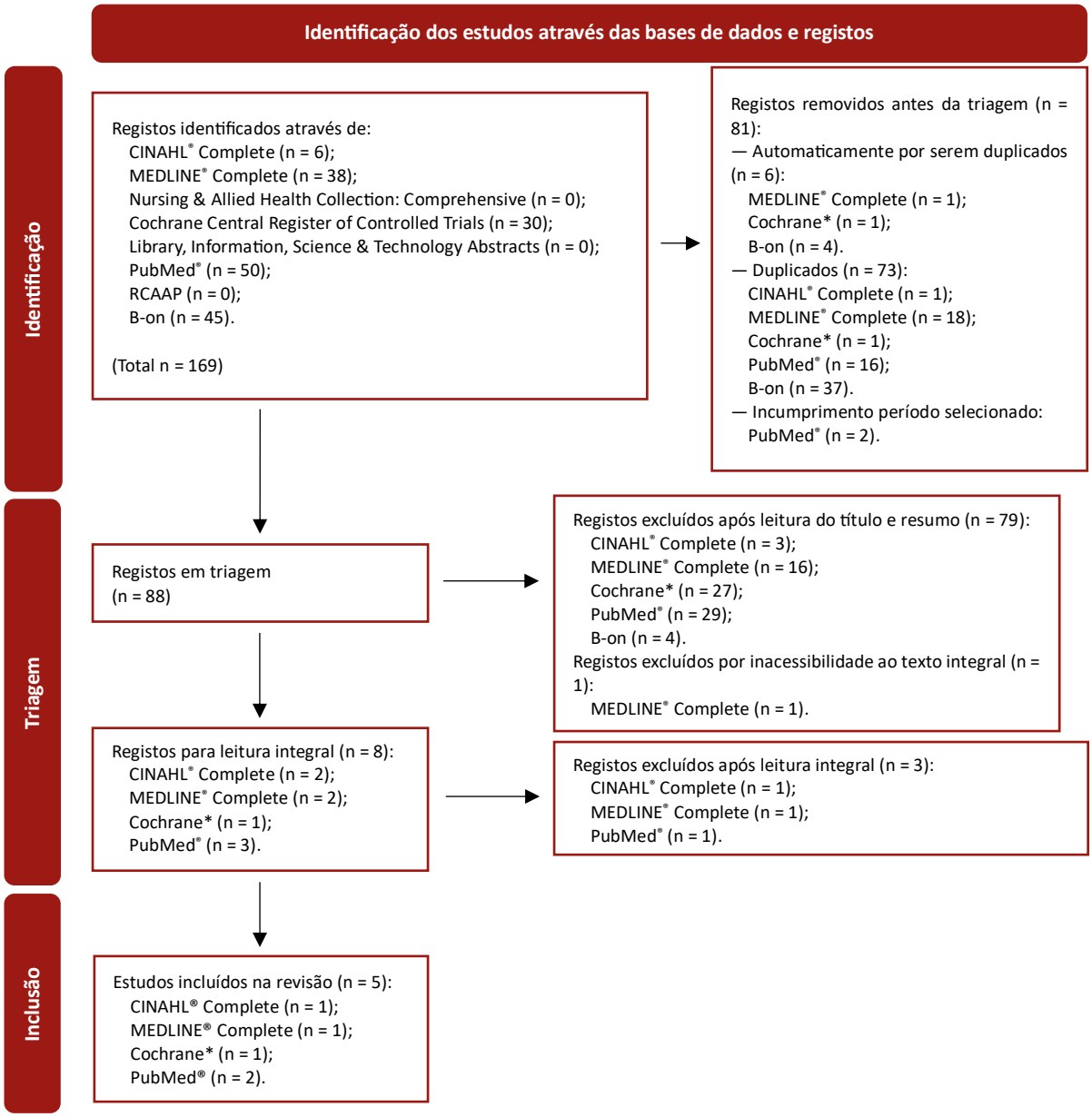
Os critérios de inclusão foram artigos nos idiomas Português, Inglês ou Espanhol, datados entre 1 de maio de 2018 a 31 de maio de 2023 e que respondam à questão de investigação, especificamente incluam a faixa etária do lactente com febre. Como critérios de exclusão, resumem-se os restantes idiomas além do Português, Inglês ou Espanhol, artigos duplicados, aqueles que não respondam à questão de investigação e não cumpram o recorte temporal selecionado.

Na amostra incluíram-se todos os estudos obtidos, leia-se 169, e, no sentido de auxiliar e organizar todo o processo de triagem, recorreu-se à plataforma Rayyan. A análise, seleção, extração e síntese da evidência deu-se por meio de três revisores independentes, seguindo os princípios preconizados. Ainda assim, salienta-se a categorização da evidência, segundo os cinco níveis de Joanna Briggs Institute (JBI, 2021).

Previamente à triagem, eliminaram-se 81 estudos, dos quais 6 foram pelas bases de dados, automaticamente por serem duplicados. Na plataforma Rayyan, detetaram-se 73 duplicados, sendo eliminados e, paralelamente, a PubMed® incluiu 2 estudos que não cumpriram o recorte temporal, também descartados.

Para triagem, seguiram 88 estudos, excluindo-se 79, após leitura crítico-reflexiva do título e resumo, por não responderem à questão de investigação. A acessibilidade ao texto integral, apesar de não constar dos critérios de inclusão para não restringir a pesquisa, não foi possível num dos estudos, sendo removido. Para leitura integral seguiram 8 estudos por revelarem possíveis contributos à questão de investigação, dos quais 3 foram excluídos, por tal critério. Todo o processo encontra-se esquematizado no Fluxograma PRISMA da Figura 1.

Figura 1: Fluxograma PRISMA.



Fonte: Page et al. (2021).

Finalmente, a amostra da revisão é constituída por cinco estudos, designadamente 1 CINAHL® Complete, 1 MEDLINE® Complete, 1 Cochrane Central Register of Controlled Trials e 2 PubMed®.

3. Resultados

Os cinco estudos foram selecionados, criteriosamente, após aplicação dos critérios, *a priori*, definidos. No sentido de atestar a validade, analisaram-se, minuciosamente, e esquematizou-se para facilitar a extração de dados e respetiva análise. Segue-se o quadro 1, enquanto instrumento utilizado para a extração sintetizada dos dados dos artigos incluídos.

Quadro 1: Instrumento à extração de dados dos artigos incluídos.

Título — Base de Dados	Autor, Ano País — Idioma	Objetivos	Intervenções educativas
Decreasing Low Acuity Pediatric Emergency Room Visits with Increased Clinic Access and Improved Parent Education — MEDLINE®	(Davis et al., 2018), Estados Unidos da América — Inglês	Diminuir o uso evitável e de baixa gravidade ao Serviço de Urgência, na "Coastal Family Medicine".	Cartazes; Linha de triagem telefónica; Marcadores de páginas nos boletins de saúde.
Development and evaluation of a hospital discharge information package to empower parents in caring for a child with a fever — PubMed®	(De Maat et al., 2018) Holanda — Inglês	Explorar experiências dos pais sobre a gestão da febre; Avaliar comportamento e necessidades quando procuram informações; Desenvolver e avaliar um pacote de informações na alta hospitalar sobre a febre.	Pacote de informações com folheto e página virtual, esta com vídeos sobre febre, sinais de alarme, sintomas, convulsões febris e segurança, complementados com explicação verbal. Uso de semáforos para identificar o risco de doença grave.
Randomised controlled trial of an intervention to improve parental knowledge and management practices of fever — Cochrane Central Register of Controlled Trials	(Kelly et al., 2019) Irlanda — Inglês	Avaliar a eficácia do folheto para aumentar o conhecimento parental sobre a febre; Melhorar a gestão dos antipiréticos e medidas não farmacológicas (esponja morna); Reter conhecimento após duas semanas.	Folheto informativo.
Intervención educativa en atención primaria para reducir y mejorar la adecuación de las consultas pediátricas — PubMed®	(Vázquez Fernández et al., 2019) Espanha — Espanhol	Determinar a efetividade do programa de educação para a saúde sobre o número e adequação das consultas nos primeiros 6 meses de vida; Identificar os principais motivos de consulta até aos 6 meses.	Sessões de formação a grávidas no último trimestre e parceiros. Metodologia grupal com seis sessões dinâmicas de 90 minutos (febre, uso racional do Serviço de Urgência, infeção respiratória, gastroenterite, lesões de pele e acidentes).
Video Discharge Instructions for Acute Otitis Media in Children: A Randomized Controlled Open-label Trial — CINAHL®	(Belisle et al., 2019) Canadá — Inglês	Avaliar a eficácia das orientações na alta por vídeo, comparativamente ao folheto, no Serviço de Urgência, aos pais de crianças com Otite Média Aguda, na redução da febre e dor.	Vídeo gravado; Folheto; Orientações verbais.

Fonte: Davis et al. (2018); De Maat et al. (2018); Belisle et al. (2019); Kelly et al. (2019); Vázquez Fernández et al. (2019).

Na análise, salienta-se que, no ano de 2018, foram publicados 2 estudos e 3 no de 2019. Importa reforçar que, após 2019, não existe nenhum outro mais recente. Relativamente à autoria, 1 estudo foi produzido por 4 autores,

2 estudos desenvolvidos por 6 autores e outros 2 por 10 autores. No que toca às bases de dados, identificaram-se 2 na PubMed®, 1 MEDLINE® Complete, 1 Cochrane Central Register of Controlled Trials e 1 CINAHL® Complete.

Em relação ao idioma, 4 foram em inglês e 1 em espanhol. Relativamente à localização, 2 estão afetos à América do Norte, nomeadamente Estados Unidos e Canadá. Na Europa, desenvolveram-se 3, respetivamente em Espanha, Holanda e Irlanda. Deste modo, evidencia-se que não foi identificado qualquer estudo no idioma português, nem desenvolvido no país.

De acordo com os níveis de evidência preconizados pelo JBI, existem 2 estudos experimentais, controlados e randomizados (1.c) e 1 quase experimental, controlado prospectivamente (2.c). Ainda assim, possui 1 estudo observacional, analítico, sem grupo de controlo (3.e) que, apesar de não se enquadrar plenamente, é a opção com melhor correspondência. Neste sentido, são mencionados os questionários aplicados e a revisão de literatura, no entanto não se encontram descritos. Por último, existe 1 estudo observacional, descritivo e transversal (4.b) que, igualmente, traduz em parte o artigo analisado, dada a realização das entrevistas e discussão em grupo (JBI, 2021).

No que diz respeito à publicação, 4 foram publicados em conteúdos de saúde no geral, sendo 1 no jornal e 3 em revistas. Por fim, apenas 1 foi publicado numa revista específica de saúde infantil e pediátrica.

A leitura do *corpus* dos estudos permitiu a criação de categorias para auxiliar na análise. Segundo a abordagem a adotar e o contexto onde poderão ser implementados, encontram-se categorizados no quadro 2.

Quadro 2: Categorização das intervenções educativas.

Abordagem \ Contexto	Cuidados de Saúde Primários	Cuidados Hospitalares
Formato em papel	Marcadores de páginas Cartazes Folheto	
Formato digital	Vídeo gravado Página virtual	
Comunicação verbal direta	Linha de triagem telefónica Transmissão direta na prestação de cuidados	
	Programas pré-natais	

Fonte: Davis et al. (2018); De Maat et al. (2018); Belisle et al. (2019); Kelly et al. (2019); Vázquez Fernández et al. (2019).

No que concerne ao contexto, selecionaram-se os CSP e Cuidados Hospitalares, locais passíveis de aplicação. A abordagem poderá ser em formato papel, digital ou comunicação verbal direta. Relativamente ao formato em papel, torna-se possível utilizar, em ambos os contextos, desde os marcadores de páginas, cartazes e folhetos. Por sua vez, o formato digital também é passível de replicação, nos CSP e Hospitalares, incluindo vídeos gravados e o acesso a uma página virtual. Por fim, através da comunicação verbal direta, nos dois contextos, é possível implementar uma linha de triagem telefónica e, na prestação de cuidados, diretamente, transmitir conhecimentos. Dada a dinâmica dos programas pré-natais, permanecem afetos, apenas, aos CSP.

4. Discussão

Num dos SUP com maior afluência do país, o Centro Hospitalar Universitário de São João (CHUSJ), em 2022, 47% dos atendimentos categorizaram-se em pouco urgentes (cor verde), segundo o sistema de triagem (CHUSJ, 2023).

Ainda em relação a um Hospital do Norte, na análise realizada aos episódios de urgência, durante 5 anos, verificou-se que, em média, sensivelmente, metade das crianças têm até 5 anos de idade. Dessas, cerca de 50% possuem até 12 meses, correspondendo à fase da primeira infância. Período de maior imaturidade imunológica o que, associada à inadequada literacia em saúde, por parte dos pais/cuidadores, globalmente, resulta numa maior procura pelos serviços de saúde (Ferreira, 2017).

No domínio pediátrico, a febre constitui um dos principais sinais, sendo impreterível, adequadamente, mensurá-lo e dar resposta. Num estudo realizado em 2011, no norte de Portugal, concluiu-se que os pais/cuidadores possuem um conhecimento inadequado sobre cuidar de uma criança com febre, articulado às crenças erróneas. A título de exemplo, consideram febre aos valores inferiores àqueles preconizados, 31,2% administram antipirético em apirexia e acreditam que, quando não tratada, a febre pode ocasionar meningite, coma, atraso mental ou morte. Além disso, também se fez referência às intervenções não farmacológicas, no que toca ao alívio da roupa. Por tudo isto, concluiu-se que são necessárias intervenções de educação para a saúde, dirigidas aos pais/cuidadores, no sentido de ensinar a gerir, eficazmente, este sinal (Santos et al., 2016).

Por sua vez, na revisão sistemática e meta-análise, publicada por Vicens-Blanes et al. (2023), a febre, apesar de, por si só, não constituir um sinal prejudicial, pais/cuidadores centram-se no valor da temperatura como principal indicador de gravidade. Assim, torna-se fundamental a intervenção do EESIP, na transmissão de conhecimentos e estratégias de atuação.

O processo de transição para a parentalidade constitui uma oportunidade crucial à capacitação parental, especificamente, no que concerne à interpretação dos sinais e sintomas do lactente, por parte dos pais/cuidadores (Væver et al., 2022).

No primeiro ano de vida, atendendo à suscetibilidade e dependência da criança, a capacitação parental compreende o principal recurso na promoção do crescimento e desenvolvimento infantil. O EESIP coopera na aquisição de competências pelos pais/cuidadores, sendo basilar o desenvolvimento de processos interpessoais, cognitivos e comportamentais (Meleis, 2012).

Diversos estudos reforçam a eficácia dos programas de capacitação parental, nos primeiros 12 meses de vida, na promoção do desenvolvimento infantil. A intervenção do EESIP consiste na promoção das competências parentais, no sentido da autonomia, ao cuidar do lactente, fomentando o desenvolvimento integral (Nunes, 2022).

No que concerne aos estudos incluídos, o primeiro salienta, como intervenções educativas, a linha de triagem telefónica, os cartazes e marcadores de páginas nos boletins de saúde. Nos primeiros 3 meses, apesar do número de crianças ter aumentado em 17.5%, correspondendo a 211 crianças, verificou-se uma redução de 50% (14 para 7) nas idas aos serviços de saúde, por febre, comparativamente ao ano anterior e com efeitos até aos 12 meses após a intervenção. Naturalmente, com repercussões nos custos inerentes e na qualidade dos cuidados prestados. No entanto, o tamanho da amostra consiste numa das limitações, dado não ser suficiente para obter conclusões de significância (Davis et al., 2018).

Neste sentido, Sarria-Guerrero et al. (2019), publicaram um estudo relativo a um Hospital Pediátrico de Barcelona, onde analisaram as caraterísticas das teleconsultas e triagens telefónicas, descrevendo o impacto sobre a decisão de recorrer a um serviço de saúde. Das teleconsultas avaliadas, 81% foram consideradas não urgentes, sendo a febre (21,7%) e as dúvidas sobre a terapêutica, os motivos mais frequentes. O nível de satisfação foi elevado e os cuidados prestados foram classificados em muito úteis. Através desta triagem, realizada por enfermeiros especialistas, produziu-se uma alteração no recurso aos serviços de saúde de quase metade dos pais/cuidadores.

No que toca à comunicação verbal, recomenda-se uma linguagem clara, estilo de diálogo e isenta de termos técnicos. Impreterivelmente, deve-se limitar a quantidade de informação, priorizando, em cada intervenção, os aspetos mais relevantes, salientando-os. O emprego de outros formatos, nomeadamente o formato em papel

ou digital parece favorecer o sucesso da comunicação verbal. Por último, importa validar a compreensão dos pais/cuidadores, solicitando que retribuam a informação que obtiveram e questionem, esclarecendo as dúvidas existentes (Connelly & Gupta, 2017).

Em Portugal, ao encontro do preconizado, existem os Boletins de Saúde Infantil e Juvenil, distribuídos na maternidade, onde se registam informações importantes. Em algumas páginas, especificamente, faz-se referência à febre e aos principais sinais de alarme (DGS, 2023).

No que toca ao segundo estudo, De Maat et al. (2018) exploraram as experiências dos pais sobre a gestão da febre. Os progenitores procuravam informação quando a febre era prolongada, a criança era incapaz de verbalizar ou permanecia com diminuição da ingestão. Além disso, aferiram algumas atitudes, não recomendadas, na atualidade, tais como os banhos de água fria e administração de antipirético em horário fixo para "prevenir" o pico febril. O medo do antipirético deixar de ser eficaz, antibioterapia para a convulsão febril e as temperaturas altas serem prejudiciais à saúde, foram outras crenças erróneas identificadas.

Ainda segundo a mesma autoria, desenvolveram e avaliaram um pacote de informações, fornecido aquando da alta. O pacote englobava um folheto e acesso a uma página virtual, esta com vídeos sobre febre, sinais de alarme, sintomas, convulsões febris e segurança, complementados com explicação verbal. Nesta intervenção, era utilizado um sistema de semáforos para identificar o risco de doença grave e quando recorrer aos serviços de saúde. No momento da alta, quando os pais não se sentiam reconhecidos, verificou-se um aumento da ansiedade e, no futuro, uma maior procura por motivos semelhantes. Assim, importa transmitir informações fidedignas e passíveis de consulta no domicílio, revelando-se que, a intervenção é bem-sucedida, quando se complementa a intervenção verbal com conteúdo escrito ou visual.

No Canadá, um estudo realizado por Hart et al. (2019), avaliou a eficácia de uma intervenção interativa, objetivando educar os cuidadores sobre a febre, num SUP. A intervenção era baseada na *Internet*, sendo comparada à leitura e informações verbais, bem como escritas. Deste modo, evidenciou-se que aquelas associadas à *Internet*, correspondem melhorias significativas nos conhecimentos e alta satisfação do cuidador, comparativamente aos formatos escritos e verbais. Por sua vez, a satisfação produz repercussões positivas na relação terapêutica e adesão ao plano de cuidados.

Em relação ao terceiro estudo incluído, ao encontro do folheto, Kelly et al. (2019) avaliaram a respetiva eficácia no aumento do conhecimento parental sobre a febre, especificamente identificação do valor preconizado, melhorar a gestão dos antipiréticos e as medidas não farmacológicas, tais como o uso da esponja morna. A intervenção educativa consistia no folheto informativo, tendo em vista o aumento do conhecimento e a redução da recorrência aos serviços de saúde.

De acordo com a mesma autoria, o folheto demonstrou aumentar a definição correta da febre e a diminuição das práticas desadequadas até duas semanas. A administração de antipirético, quando a criança está desconfortável, também evidenciou melhorias, aumentando de 76%, no grupo de intervenção, para 82,4%, comparativamente a 28% no grupo de controlo. No alternar antipiréticos, 15% do grupo de intervenção fá-lo, relativamente a 51% no grupo de controlo. Finalmente, o discordar com o uso da esponja morna, aumentou de 72% para 97%, no grupo de intervenção. No que toca à apreciação do folheto, 88% classificou-o como útil, 55% fácil de ler e 46% fácil de recordar.

As limitações identificadas dizem respeito à elaboração do folheto basear-se em estudos anteriores e não na população intervencionada. O recurso às questões fechadas impossibilitou outras respostas, consistindo também em outra limitação. Finalmente, dada a grande proporção de pais/cuidadores irlandeses não é possível generalizar para outras culturas.

A título de fundamentação, de acordo com a evidência científica, De Souza et al. (2021) reforça que, na gestão da febre, a implementação de medidas não farmacológicas não está recomendada, excetuando aquelas que colaborem na resposta fisiológica do organismo.

O quarto estudo incluído, desenvolvido por Vázquez Fernández et al. (2019), fundamentou-se no elevado número de idas aos CSP e hospitalares, fruto do desconhecimento dos pais/cuidadores e, ainda, medo de contrair uma doença grave. Até aos 6 meses de vida, verifica-se uma maior afluência, dada a suscetibilidade acrescida, inexperiência e dúvidas inerentes. Assim, avaliou-se a efetividade de um programa de educação para a saúde, no número e adequação das consultas, nos primeiros 6 meses, bem como identificação dos principais motivos. O programa consistia em sessões de formação a grávidas, no último trimestre e respetivos parceiros. A metodologia era grupal com participação ativa, composta por 6 sessões dinâmicas de 90 minutos sobre diversas temáticas, entre as quais a febre e o uso racional do SUP.

A intervenção surtiu melhorias no grau de adequação das consultas no grupo de intervenção, evoluindo de 26.4% para 42.7%, evidenciando-se uma redução no número de consultas sobre as temáticas abordadas. Sendo a febre uma das mais evidentes, as consultas no grupo de intervenção possuíram 70% de adequação, comparativamente aos 50% no grupo de controlo. Paralelamente, houve um aumento das consultas por temáticas não abordadas no grupo de intervenção.

Ainda segundo tal estudo, as mães com maior escolaridade e menos filhos recorrem, frequentemente, às sessões, aspeto que poderia ser considerado limitação, mas acreditou-se que os resultados podem se compensar. De igual modo, as mães de primeira viagem possuem menos habilidades e experiência.

Por sua vez, no estudo de Maeda et al. (2014), analisou-se que 74,2% das puérperas hospitalizadas participaram em programas educativos. A análise contribuiu para a aferição das temáticas mais solicitadas, na educação para a saúde, sendo os cuidados com o recém-nascido, uma das três mais procuradas (35,9%). Finalmente, 94,2% das puérperas avaliaram a sessão como informativa e clara.

No período pré-natal, as intervenções de enfermagem são fundamentais por possibilitarem a aprendizagem, estabelecimento de vínculo e resposta às necessidades das grávidas e parceiros. Neste sentido, destacam-se intervenções, no âmbito dos hábitos de vida saudável e cuidados ao lactente, com repercussões na qualidade de vida dos pais. As atividades individuais ou em grupo constituem um elemento basilar, contribuindo à partilha de experiências, crescimento e qualificação dos cuidados (Alfing, 2016).

Por último, o quinto estudo incluído, conduzido por Belisle et al. (2019), avaliou a eficácia das orientações, no momento da alta, num SUP. Intervenção dirigida aos pais de crianças com Otite Média Aguda com recurso a um vídeo educativo, comparativamente ao folheto, na redução da febre e dor. Após aplicação dos critérios de exclusão, a amostra consistiu em 149 cuidadores, correspondendo a 77 com a intervenção do vídeo e 72 com o folheto. Os objetivos centraram-se na adesão ao plano de cuidados e resolução sintomática. Especificamente, no aumento do conhecimento parental, repercutindo-se no absentismo (escolar e laboral), reincidência ao SUP e respetiva satisfação. Ambos os formatos abordavam sinais, sintomas, terapêutica e quando recorrer aos serviços de saúde, correspondendo a uma alternativa às orientações verbais que, por vezes, são complexas.

Deste modo, no vídeo, evidenciou-se uma maior gestão sintomática, compreensão e retenção do conhecimento. O folheto demonstrou uma maior aquisição de conhecimentos, relativamente à abordagem verbal. Após análise, atestou-se uma melhoria significativa com os dois formatos, dado que o conteúdo era o mesmo, associada ao elevado grau de satisfação, por parte dos pais. Atendendo ao contexto de saúde, o estudo carecia de grupo de controlo negativo, onde não recebiam orientações (vídeo ou folheto), o que é inconcebível. Neste sentido, salienta-se que nenhum cuidador deixou de receber informação. Particularmente, no SUP, o vídeo consiste numa intervenção educativa a considerar, em conjunto com orientações verbais, quando a afluência é elevada e o tempo escasseia.

No domínio educativo, Gwiasda et al. (2022), desenvolveram um vídeo sobre a febre na criança, integrado na aplicação "FeverApp". Na "FeverApp", os pais/cuidadores recebem informações atualizadas sobre a febre infantil, assentes em evidência científica. O vídeo compreende, sensivelmente, 4 minutos e abarca conteúdo informativo sobre a febre, designadamente a reação que ocorre, sinais de alerta que motivem observação médica e

convulsões febris. Os resultados foram significativos com melhorias nas crenças sobre a importância da febre, passando de 75% antes do vídeo para 93% após. Depois da intervenção, 83% concordaram que seriam mais cuidadosos, quanto à administração de antipiréticos. A informação transmitida e a qualidade do vídeo foram, positivamente, avaliadas. Os autores concluíram que o vídeo possibilitou a obtenção significativa de conhecimento, motivou a mudança intencional de comportamento, a curto prazo, e a redução da incerteza.

Por sua vez, na Dinamarca, Borch-Johnsen et al. (2023) produziu tutoriais em vídeos simples e informativos sobre os sintomas comuns nas crianças, incluindo a febre e quando procurar observação médica. A abordagem é interativa, transmite informação e segurança aos pais/cuidadores e objetiva melhorar a literacia em saúde e otimizar os recursos disponíveis. Os vídeos receberam pareceres positivos, por parte parental, sendo classificados em informativos, de fácil compreensão e tranquilizadores.

Ao encontro da evidência apresentada, recentemente, a revisão *scoping* conduzida por Arias et al. (2019), identificou 11 intervenções educativas, tais como as sessões de formação individuais, entre pares e em grupo (palestras, discussões, tutoriais, demonstrações e módulos estruturados). O formato informatizado foi referido com recurso aos tutoriais e diretrizes, linha direta de triagem de enfermagem, utilização de vídeos e combinação de formatos entre presencial e online. Na maioria das intervenções, evidenciou-se um impacto positivo no aumento do conhecimento, competências na gestão da febre e diminuição da recorrência aos serviços de saúde.

5. Conclusão

Ao encontro da evidência atual, diversas foram as intervenções enumeradas com repercussões positivas na capacitação de pais e cuidadores de lactentes com febre. Naturalmente, tais repercussões surtem impacto positivo na afluência aos serviços de saúde, custos associados, melhoria da qualidade dos cuidados, aumento da satisfação de famílias e profissionais, bem como redução da ansiedade parental (Martins et al., 2020).

No contexto dos CSP e hospitalares, frisa-se as intervenções educativas em formato papel, como os marcadores de páginas, cartazes e folhetos. O formato digital diz respeito aos vídeos e acesso a páginas virtuais. Por sua vez, através da comunicação oral direta, identificou-se a linha de triagem telefónica e a transmissão direta de conhecimentos. Por último, dada a dinâmica dos CSP, tornam-se exequíveis os programas pré-natais.

Atendendo à adequação da atuação do EESIP, estas intervenções tornam-se essenciais e um importante incentivo à criação de estratégias nestes formatos mais interativos, objetivando a assimilação, retenção do conhecimento adquirido e transposição para a prática. Após análise, os vídeos destacam-se como o formato predileto dos pais/cuidadores (Arias et al., 2019).

No que toca às limitações, reconhece-se a abundância de evidência sobre o SUP, no entanto escasseia a dos CSP, tornando-se numa sugestão para estudos futuros. Finalmente, acredita-se que seria de extrema pertinência, reforçar as respostas, por parte dos CSP, através de alternativas apropriadas e de fácil acesso, garantindo a acessibilidade às situações agudas não urgentes. Medidas que evitam a afluência já caraterística ao SUP e asseguram a sua efetiva capacidade de resposta.

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Revisão por Pares: Dupla revisão anónima por pares.

Protocolos de transmissão de más notícias utilizados em contextos de cuidados paliativos: uma revisão de literatura

Protocols for breaking bad news used in palliative care contexts: a literature review

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Resumo

Enquadramento: A comunicação de más notícias é um dos desafios das equipas de saúde, particularmente no contexto de cuidados paliativos. A diversidade de protocolos, dificulta a seleção da abordagem mais eficaz.

Objetivo: Identificar os protocolos de comunicação de más notícias utilizados no contexto de cuidados paliativos.

Metodologia: Revisão integrativa da literatura. Partindo da questão "Quais os protocolos utilizados para transmitir más notícias em contexto de cuidados paliativos?", utilizando os descritores "Comunication", "Palliative Care", "Bad News" e "Protocol", realizou-se colheita de dados na PubMed, SciELO, e EBSCO, entre junho e julho de 2023. Os critérios de inclusão foram: documentos publicados em português, inglês e espanhol; sem limite temporal de publicação; texto integral disponível; estudos observacionais, primários e revisões da literatura.

Resultados: A amostra foi constituída por 17 artigos, identificou-se 8 protocolos de transmissão de más notícias, sendo o "SPIKES" o mais antigo e mais citado. A maioria dos protocolos inclui três etapas "antes, durante e após", o momento que antecede a transmissão da informação, a transmissão da informação e o impacto desta no doente e/ou familiares.

Conclusão: Esta revisão contribui para a seleção da abordagem de transmissão de más notícias mais adequada aos utentes e famílias em cuidados paliativos.

Palavras-Chave: Comunicação em Saúde; Cuidados Paliativos; Educação; Más Notícias.

Abstract

Background: Communicating bad news is one of the challenges for healthcare teams, particularly in the context of palliative care. The diversity of protocols makes it difficult to select the most effective approach.

Objective: To identify the bad news communication protocols used in the context of palliative care.

Methodology: Integrative literature review. Considering the question "What are the protocols used to communicate bad news in the context of palliative care?", using the descriptors "Communication", "Palliative Care", "Bad News" and "Protocol", data collection was conducted in PubMed, SciELO, and EBSCO, between June and July 2023. Inclusion criteria were: documents published in Portuguese, English and Spanish; no time limit of publication; full text available; observational, primary studies and literature reviews.

Results: The sample consisted of 17 articles, 8 bad news transmission protocols were identified, with "SPIKES" being the oldest and most cited. Most of the protocols include three stages "before, during and after", the moment before the transmission of information, the transmission of information and the impact of this on the patient and / or relatives.

Conclusion: This review contributes to the selection of the most appropriate approach to breaking bad news for patients and families in palliative care.

Keywords: Bad News; Education; Health Communication; Palliative Care.

1. Introdução

Com o envelhecimento demográfico das últimas décadas tem sido reconhecida, de forma progressiva, a necessidade de cuidados paliativos (CP) em todo o mundo. Este tipo de cuidados tem em vista melhorar a qualidade de vida, de uma pessoa doente e sua família, permitindo o atenuar e antecipar o sofrimento perante uma doença que possa ameaçar a vida, através do reconhecimento e avaliação, precoce e rigorosa, assim como providenciando o tratamento da dor e de outros problemas físicos, psicossociais e espirituais (Sousa et al., 2021).

Um dos mais complexos e mais frequentes desafios que se colocam aos profissionais que integram as equipas que prestam CP é a transmissão de más notícias, tanto às pessoas doentes, como aos seus familiares. Efetivamente, esta informação de saúde negativa e que afeta a visão da pessoa relativa ao futuro (Bousquet et al., 2015) pode ser transmitida em diversos momentos no contexto dos CP, nomeadamente no diagnóstico da doença, na referenciação, no agravamento do quadro clínico, e no momento do óbito (Vogel, Silva, Ferreira, & Machado, 2019).

A forma como é transmitida a má notícia tem um impacto duradouro na pessoa/família afetando a expressão de sentimentos, o processo de adaptação à situação (Von Blanckenburg, Hofmann, Rief, Seifart, & Seifart, 2020) e a satisfação com o próprio serviço de saúde (Jalali, Jalali, & Jalilian, 2023). A habilidade de mitigar efeitos nefastos de uma má noticia, é um elemento importante que exige dos profissionais um grande poder de comunicação. Uma abordagem apropriada do problema, ajuda a pessoa e família a tomarem decisões, oferecendo uma esperança realista, independentemente da severidade do diagnóstico e a possibilidade de que há sempre mais alguma coisa que se pode fazer (Witt & Jankowska, 2018). A comunicação do diagnóstico é tradicionalmente da responsabilidade do médico, no entanto, dada a relação dos enfermeiros com os doentes e familiares, diversos estudos enfatizam o papel que estes profissionais de saúde desempenham na transmissão de más notícias (Xu et al., 2023; Jalali et al., 2023), dando resposta às suas preocupações específicas, esclarecendo e dando informações adicionais (Bumb, Keefe, Miller, & Overcash, 2017). Nesta perspetiva, nos últimos anos, tem havido uma crescente preocupação para incluir a temática das más-notícias no contexto da formação pré e pós-graduada dos enfermeiros. Apesar da transmissão de uma má notícia ser uma intervenção complexa, é consensual que, os profissionais de saúde, habitualmente não têm treino formal para fazê-lo, o que poderá ter consequências nefastas na prestação dos cuidados (Mailankody et al., 2022). Habitualmente, no contexto de formação, os profissionais de saúde são treinados a utilizar um protocolo de transmissão de más notícias, com

um conjunto de etapas sequenciais. No entanto, atualmente a diversidade de protocolos de más notícias e a sua dispersão na literatura dificulta a seleção da abordagem mais eficaz e que deve ser utilizada, tanto na formação dos profissionais de saúde, como no contexto clínico. Desta forma, com esta revisão pretende-se identificar os protocolos para a comunicação de más notícias utilizados no contexto de CP.

2. Metodologia

Foi realizada uma revisão integrativa da literatura, a qual sumariza a literatura empírica e teórica (Souza, Silva, & Carvalho, 2010), e é considerada de vital importância para a prática baseada na evidência (Hopia, Latvala, & Liimatainen, 2016). Foram seguidas as etapas mais frequentemente descritas neste tipo de revisão: identificação da questão norteadora, procura e seleção da literatura, colheita de dados, análise crítica da literatura e discussão e apresentação dos resultados (Hopia et al., 2016; L. Sousa, Firmino, Marques-Vieira, Severino, & Pestana, 2018).

Para a formulação da questão norteadora, utilizamos a estratégica PICOS (L. Sousa et al., 2018). Nesta perspetiva, o P (população) foram as "pessoas em situação paliativa e/ou seus familiares"; o I (Intervenção) "protocolos de transmissão das más notícias"; o C (comparação) não foi aplicável; O (Outcomes) os "protocolos de más notícias utilizados em contexto de cuidados paliativos" e o S (tipos de estudo) os estudos observacionais, primários e revisões da literatura. Desta forma a questão norteadora ficou definida da seguinte forma: "Quais os protocolos utilizados para transmitir más notícias a pessoas e/ou seus familiares em contexto de cuidados paliativos?"

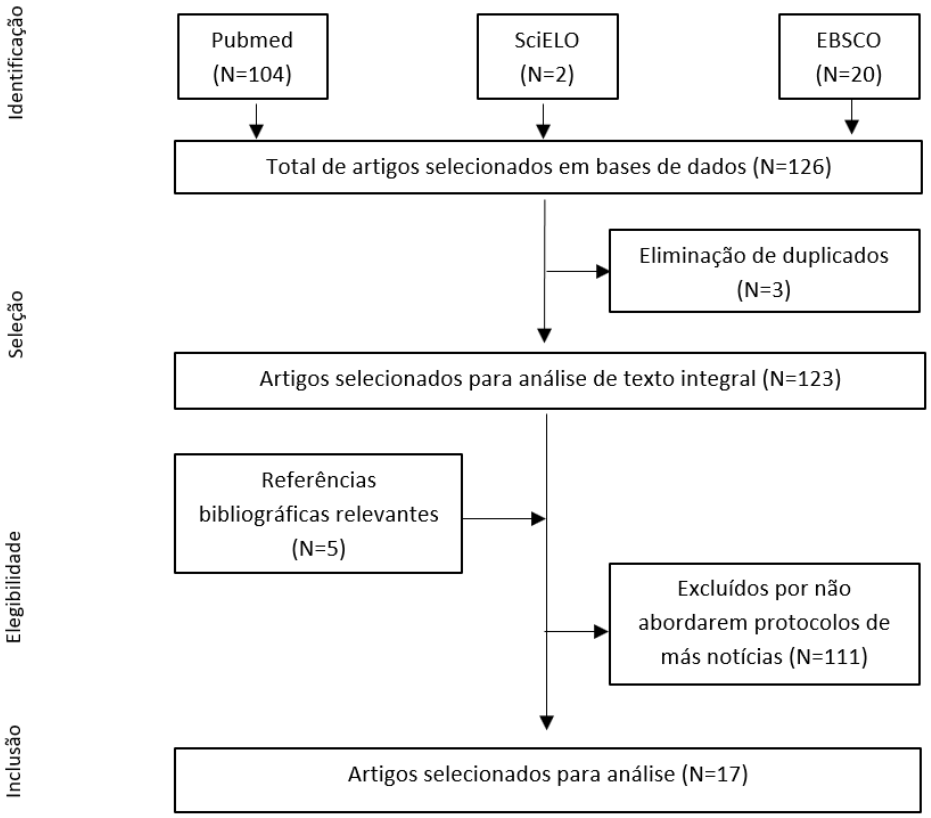
A procura e seleção da literatura ocorreu entre junho e julho de 2023. Realizou-se uma primeira pesquisa nas bases de dados PubMed, SciELO e EBSCO. Foram utilizados os termos MeSH (Medical Subject Headings): "Comunication", e "Palliative Care", e ainda os termos não controlados: "Bad News" e "Protocol", os quais foram combinados utilizando os operadores boleanos "AND" e "OR".

Os critérios de inclusão delineados foram: documentos publicados nos idiomas de português, inglês e espanhol; sem limite temporal de publicação; texto integral disponível; estudos observacionais, primários e revisões da literatura. Foram excluídos artigos de opinião/editoriais e publicações que não mencionassem protocolos de transmissão de más notícias ou não descrevessem as etapas que os compõem.

Numa primeira fase de pesquisa foram encontrados 126 artigos, os quais foram enviados para o gestor de referências bibliográfico EndNote X9. Foram eliminados 3 por estarem repetidos, e posteriormente foi iniciado o processo de leitura integral pois na maioria das vezes o título e resumo não mencionavam de forma explícita a utilização de um protocolo de transmissão de más notícias. No processo de leitura de artigos foram ainda identificadas mais 5 referências bibliográficas relevantes. Foram excluídos 111 artigos por não fazerem referência a nenhum protocolo de transmissão de más notícias. No final totalizamos 17 artigos que descreviam as etapas de pelo menos um protocolo de más-notícias utilizado em contexto de cuidados paliativos. O processo de seleção e triagem dos mesmos está representado no fluxograma da Figura 1.

Os protocolos de más notícias identificados nos diferentes artigos foram posteriormente sumarizados num quadro.

Figura 1: PRISMA Flow Diagram (adaptado) do processo de seleção dos artigos.



3. RESULTADOS E DISCUSSÃO

Para a apresentação dos resultados obtidos, optou-se por sintetizar a informação relativa aos artigos num quadro, onde são identificados os autores e ano das publicações bem como os protocolos de transmissão de más notícias, o acrónimo pelos quais são conhecidos e as respetivas etapas que incluem (Quadro 1).

Quadro 1: Síntese dos dados.

Autor, Ano	Protocolos (Acrónimo)	Etapas
(Baile et al., 2000) (Wittenberg-Lyles, Goldsmith, Sanchez-Reilly, & Ragan, 2008) (Wittenberg-Lyles, Goldsmith, Ragan, & Sanchez-Reilly, 2010) (Seifart et al., 2014) (Dean & Willis, 2016) (Gazzola, Leite, & Gonçalves, 2020) (Fisseha, Mulugeta, Kassu, Geleta, & Desalegn, 2020) (Melo, Magalhães, Meneses, Alves, & Magalhães, 2022) (Melo et al., 2022)	SPIKES	*S — Summary* *P — Perception* *I — Invitation* *K — Knowledge* *E — Emotions* *S — Summary*
(Sobczak, 2022)	CONNECT	*C — Context* *O — Organization* *NN — Near and Niceties* *E — Emotions*

		C — Counseling *T — Taking Care*
(Pereira, Calonego, Lemonica, & Barros, 2017)	PACIENTE	*P — Prepare* *A — Assess how much the patient knows and how much they want to know* *C — Invite the patient to the truth* *I — Inform* *N — Do not abandon the patient* *TE — Outline a strategy (Trace uma estratégia em português)*
(Dunning & Laidlaw, 2015)	PAPM	*P — Practitioners* *A — Applied* *P — Practice* *M — Model*
(Mailankody et al., 2022)	PENS	*P – Patient reference,* *E — Explanation,* *N — Next appointment,* *S — Support*
(Keefe-Cooperman, Savitsky, Koshel, Bhat, & Cooperman, 2018) (Bumb et al., 2017)	PEWTER	*P — Prepare,* *E — Evaluate,* *W — Warning,* *T — Telling,* *E — Emotional* *R — Response, Regrouping*
(Narayanan, Bista, & Koshy, 2010)	BREAKS	*B — Background* *R — Rapport* *E — Explore* *A — Announce* *K — Kindling* *S — Summarize*
(Guneri, Epstein, & Botto, 2013)	ABCDE Model	*A — Advance preparation* *B — Build a therapeutic environment/relationship* *C — Communicate well* *D — Deal with patient and family reactions* *E — Encourage and validate emoticons*

Nas 17 publicações incluídas para análise foram identificados 8 diferentes protocolos de transmissão de más notícias, sendo o "SPIKES" o mais antigo e mais citado nos artigos incluídos na análise. Esta é a mais conhecida e utilizada abordagem para comunicar más notícias, em diferentes áreas da saúde, sendo também a mais citada na literatura (Johnson & Panagioti, 2018; Santos, Gremigni, Casu, Zaia, & Montagna, 2021).

Este protocolo foi descrito pela primeira vez pelo médico e comediante britânico Robert Buckman, com o objetivo de habilitar o médico e a equipa multiprofissional a comunicarem más notícias aos utentes. Inclui seis etapas: Setting (conseguir o ambiente correto), Perception (perceber o que o doente sabe), Invitation (identificar o que o doente quer saber), Knowledge (transmitir a informação), Emotions (resposta empática às emoções) e Summary (síntese) (Buckman, 1992; Baile et al., 2000).

A opinião dos doentes relativamente à transmissão de más notícias, utilizando a abordagem de SPIKES, foi avaliada através da MABBAN (Marburg Breaking Bad News Scale), concluindo-se que alguns aspetos fulcrais neste processo são o transmitir a informação com clareza, as preferências individuais e o ter em conta algumas

variáveis demográficas (von Blanckenburg et al., 2020). Um outro estudo realizado na Alemanha, utilizando a mesma escala, conclui que apenas 46,2% dos doentes com cancro estavam completamente satisfeitos com a forma como lhes tinha sido transmitida a má notícia e sugerem que na utilização do SPIKES os profissionais devem dar especial atenção a alguns aspetos, nomeadamente o garantir que o doente compreendeu a informação, a possibilidade de colocar questões, o respeito pelas necessidades e preferências de informação previamente combinadas e a possibilidade de a comunicação de más notícias ser efetuada em duas etapas (Seifart et al., 2014).

Numa outra perspetiva, a perceção dos profissionais (médicos e estudantes de medicina), em relação à utilização da abordagem de SPIKES, nomeadamente os seus princípios e valores, foi avaliada com recurso à BBNAS (Breaking Bad News Attitudes Scale). Os profissionais consideraram que a utilização deste protocolo, além de promover a adesão dos doentes ao tratamento, é uma mais-valia na redução dos níveis de stress dos médicos quando têm que comunicar uma má notícia (Santos et al., 2021).

A adoção da abordagem de SPIKES para a transmissão de más notícias não é consensual e já têm surgido algumas críticas e novas propostas de protocolos. Por exemplo, foi criado um novo protocolo, baseado no SPIKES, culturalmente adaptado à realidade brasileira – o PACIENTE (Pereira et al., 2017). Contempla igualmente 6 etapas, as primeiras quatro, semelhantes às do SPIKES, substituindo a etapa da gestão das emoções (Emotion) por o "não abandonar o doente" e denominando a última etapa como o "traçar uma estratégia" (TE) em vez da "síntese" (Summary). Os autores constataram que 97% dos médicos e enfermeiros, incluídos no seu estudo, eram de opinião que esta é uma ferramenta de comunicação útil e adequada para utilizar em contexto clínico. No entanto, apenas 52% dos respondentes tinham experiência e/ou formação sobre utilização de um protocolo de transmissão de más notícias (Pereira et al., 2017).

A adequação ao contexto cultural é uma preocupação natural dos diferentes autores. Efetivamente, os protocolos descritos nos artigos incluídos na nossa análise foram publicados em revistas de diferentes países, por exemplo Polónia (Sobczak, 2022); Brasil (Pereira et al., 2017), India (Narayanan et al., 2010), Etiopía (Fisseha et al., 2020), Estados Unidos (Wittenberg-Lyles et al., 2010). O facto de termos publicações, oriundas dos diferentes continentes, faz-nos refletir sobre a transversalidade da temática das más notícias, constituindo um foco de atenção dos profissionais de saúde de todo o mundo. Por outro lado, o espaço temporal de publicação dos artigos indica-nos que este é um tema que vem sendo abordado ao longo do tempo, mas que permanece atual.

Apesar da variação no número de etapas (4 a 6), quase todos os protocolos incluem três grandes momentos "antes, durante e após", ou seja, a preparação ou o momento que antecede a transmissão da informação, o momento em que é dada a informação e o lidar com o impacto da notícia no doente e/ou familiares. O protocolo PENS (Mailankody et al., 2022) é um dos mais recentes e que inclui menos etapas, sendo o único que não menciona a importância do momento "pré-protocolo", com intervenções relacionadas com a preparação do ambiente, anamnese do doente e a privacidade do mesmo. Nesta abordagem para transmissão de más notícias o "P" diz respeito à importância deve ser dada às preferências do doente; o "E" consiste na explicação da condição clínica/ doença; o "N" corresponde à apresentação dos possíveis tratamentos e por fim, o "S" o representa o suporte fornecido ao doente.

Realçamos o facto de todos os protocolos enfatizarem a importância da valorização das emoções do doente e da relevância da concretização de uma relação terapêutica vantajosa neste sentido.

Um aspeto comum entre os diferentes protocolos, é que os autores procuraram utilizar um acrónimo ou mnemónica para facilitar a memorização do conjunto de etapas sequenciais, tornando, desta forma, o processo mais didático. A utilização de uma mnemónica sugestiva é inclusivamente apontada como uma das justificações para a apresentação de um novo protocolo, por exemplo o ABCDE (Guneri et al., 2013). No "A" os autores defendem que os médicos devem preparar o ambiente, ter conhecimento dos possíveis tratamentos e possíveis ganhos tendo em conta a condição do doente; no "B" o profissional deve determinar o quê e o quanto o doente

já sabe e quer saber acerca da sua doença, permitir ao doente selecionar uma pessoa significativa no processo e iniciar as apresentações avisando ao doente que tem más notícias para lhe transmitir; no "C" o médico deve ser verdadeiro, gentil e compassivo evitando linguagem técnica, permitir momentos de silêncio e pausa, levando a consulta conforme o ritmo e interesse do paciente informando acerca da má notícia; no "D" o médico ser apresentar respeito pelo doente, mostrando empatia, não discutindo nem criticando outros colegas/opiniões, e por fim no "E" o médico deve explorar o que significou a má notícia para o doente, trabalhar a esperança realista de acordo com os objetivos do paciente, providenciando informação positiva. Ainda nesta fase, o artigo aborda a importância de garantir e atender às próprias emoções do médico e da restante equipa após aplicação do protocolo.

A importância da comunicação não-verbal na transmissão de más-notícias é enfatizada em alguns protocolos. De acordo com os autores de BREAKS, o "A" pretende reforçar a importância da comunicação não verbal, usando a expressão "*body language*" e o "K" indica que há abertura para um pouco de humor no comportamento, clarificando as opções de tratamento e a realidade da doença, permitindo ao doente expressar as suas emoções e colocar questões (Narayanan et al., 2010).

No contexto da pandemia do COVID-19 foi criado o protocolo CONNECT com o objetivo facilitar a transmissão de más notícias em modo de vídeo chamada. Assim sendo, espera-se que na etapa "C" os profissionais verifiquem os contactos do doente e da família atualizados, o histórico do doente, planeiem como vão transmitir as informações e selecionem o equipamento adequado; no que concerne ao "O", neste momento o profissional deve assegurar a privacidade, verificar o equipamento e a conexão necessária para uma adequada ligação; na etapa "NN" o profissional deve se apresentar e revelar o seu objetivo na consulta, verificar a qualidade da vídeo chamada, assegurando a confidencialidade e verificando a identidade da pessoa e a devida disponibilidade do mesmo para realizar a consulta. No "E" o profissional através de questões abertas determina o que a pessoa consultada já sabe e com questões fechadas clarifica alguma informação necessária, evitando termos muito técnicos e respondendo às questões "o quê, quando, onde e a hora", revelando sempre empatia e compaixão com o outro; no "C" o profissional deverá certificar-se que a mensagem foi bem percebida, sugerindo e orientando em novas fases após a consulta; e por fim, no "T" o profissional deverá garantir apoio adicional à pessoa consultada nomeadamente apoio espiritual, social, psicológico e médico. Deve ainda no final da consulta, disponibilizar o seu contacto e reunir os pontos-chave de todo o processo (Sobczak, 2022).

Geralmente os protocolos de comunicação de más notícias são criados para serem utilizados pelos médicos, na comunicação de diagnósticos ou prognósticos desfavoráveis, mas também têm sido utilizados por outros profissionais de saúde, entre eles, os enfermeiros. Na análise da utilização dos protocolos SPIKES e PEWTER, por enfermeiros da área da oncologia, concluiu-se que ambos os modelos são adequados para serem utilizados neste contexto clínico, que ainda não há consenso para definir qual constitui a melhor prática e que possivelmente se devem combinar estratégias apresentadas em ambos os modelos (Bumb et al., 2017).

4. Conclusão

A transmissão de más notícias é prática recorrente dos profissionais de saúde, sendo considerada por estes como difícil, no sentido em que é necessário saber lidar com as emoções aquando do momento de transmissão, quer da pessoa que recebe a notícia quer do profissional que a transmite. Foram identificados um total de 8 protocolos de más notícias utilizados em contexto de cuidados paliativos, sendo o protocolo de SPIKES o mais antigo e utilizado, englobando os principais pontos-chave da comunicação. No entanto, é crescente o ênfase dado à utilização da comunicação não-verbal e até do humor na transmissão de más notícias.

A grande maioria dos protocolos é destinada à equipa médica, apesar de, em muitas situações, os enfermeiros terem um papel relevante no processo de transmissão de más notícias. A maioria dos protocolos identificados estão orientados para o doente e pouco para os membros da família.

Esta revisão pode contribuir para facilitar a seleção da abordagem mais eficaz, por parte dos profissionais e PROPORCIONAR UM CUIDADO MAIS ADEQUADO AO UTENTE E/OU FAMILIARES EM CONTEXTO DE CUIDADOS PALIATIVOS.

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Simulation as a teaching method for nursing education in healthcare-associated infection prevention and control in Asian countries: a qualitative study

Simulação como método de ensino na formação em enfermagem na prevenção e controlo de infeções associadas aos cuidados de saúde em países asiáticos: um estudo qualitativo

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Abstract

Background: Applying simulation for nursing education, especially in healthcare-associated infection prevention and control (HAI-PC) in developing countries has limited evidence. The study was conducted to explore educators' perceptions of simulation as a teaching method for nursing education in HAI-PC in two Vietnamese and two Cambodian universities.

Methods: An exploratory qualitative design was applied. A focus group of 37 educators from four universities was conducted for data collection. Inductive and deductive qualitative content analysis was applied in analysing the data.

Results: The core category was constructed to reflect educators' perception of scenario-based simulation (SBS) as a teaching method for nursing education in HAI prevention and control. This main category included three subcategories: (i) enhancing nursing competence; (ii) preparing students for simulation; and [1] promoting simulation pedagogy competence.

Conclusions: The findings identified the importance and benefits of applying simulation as a teaching method in nursing education. Additionally, it emphasized the necessity of enhancing knowledge associated with HAIs and providing additional training on simulation for educators to improve the quality of conducting simulations.

Keywords: Asian Countries; Healthcare-Associated Infection Prevention and Control; Scenario-Based Simulation; Simulation; Teaching Strategy.

Resumo

Enquadramento: A aplicação da simulação no ensino de enfermagem, especialmente na prevenção e controlo de infeções associadas aos cuidados de saúde (IACS), em países em desenvolvimento, tem evidências limitadas. O estudo foi conduzido para explorar as perceções dos educadores sobre a simulação como método de ensino para a formação em enfermagem na prevenção e controlo de IACS em duas universidades vietnamitas e duas universidades cambojanas.

Métodos: Foi aplicado um desenho qualitativo exploratório. Um grupo de discussão com 37 educadores de quatro universidades foi conduzido para a recolha de dados. A análise qualitativa de conteúdo indutiva e dedutiva foi aplicada na análise dos dados.

Resultados: A categoria central foi construída para refletir a perceção dos educadores sobre a simulação baseada em cenários (SBC) como método de ensino para a formação em enfermagem na prevenção e controlo de IACS. Esta categoria principal incluiu três subcategorias: (i) aprimoramento da competência em enfermagem; (ii) preparação dos estudantes para a simulação; e [1] promoção da competência em pedagogia de simulação.

Conclusões: Os resultados identificaram a importância e benefícios da aplicação da simulação como método de ensino na formação em enfermagem. Além disso, enfatizou a necessidade de aprimorar o conhecimento associado às ICACS e fornecer treinamento adicional sobre simulação para educadores, visando melhorar a qualidade da condução das simulações.

Palavras-Chave: Estratégia de Ensino; Países Asiáticos; Prevenção e Controlo de Infeções Associadas aos Cuidados de Saúde; Simulação Baseada em Cenários; Simulação.

1. Introduction

Healthcare-associated infection progress report in 2021, each day, approximately 1 in 31 patients and 1 in 43 nursing home residents developed at least one infection with their healthcare. Most types of HAIs are associated with catheter-associated urinary tract infection, central-line–associated bloodstream infection, surgical site infection, and ventilator-associated pneumonia (VAP) [2]. Evidence-based prevention strategies can reduce HAIs but are insufficiently implemented. Therefore, education is an essential component of infection prevention and control efforts and traditional methods of teaching including lectures, videos, and fact sheets provide some opportunities for hands-on practice. However, with the growing recognition of simulation-based learning in healthcare education, the use of simulation-based learning in HAI prevention adjunct to traditional teaching has highlighted the importance of simulation-based learning as an educational tool in infection prevention and control [3].

Scenario-based simulation (SBS) is an experiential learning method, that comprehensively describes a clinical situation, where students assess the patient, respond to the situation, and evaluate the outcomes. Students can put everything they have been taught into practice, cope with any difficulties and problems and even make mistakes without causing damage all in a safe environment, without any risk to patients [4]. SBS has been used in HAI prevention and control education in areas such as hand hygiene, standard precaution, central line-associated bloodstream infection prevention, catheter-associated urinary tract infection prevention, surgical site infection prevention and ventilatory-associated pneumonia prevention. According to the results from a review of 27 publication utilized SBS, the results indicated that SBS not only improved learners' sense of competence and confidence but also increased knowledge and compline in infection prevention leading to decreased HAI rates and reduced healthcare expenditure [5].

Besides that, there is a lot of evidence to indicate the effectiveness of simulation pedagogy in teaching and representing an effective solution for transitioning students from the learning environment to clinical practice. Simulations have strong educational effects on nursing education and assist nursing students in increasing knowledge acquisition and enhancing professional skills, critical thinking, and clinical judgment ability [6].

Simulations also showed the effective method to prepare students' emotions and strong mental by reducing anxiety and increasing self-confidence when compared to traditional teaching methods [7]. Moreover, simulations gave students the possibility to reflect on their learning and competence with their student colleagues [8]. Besides that, a review indicated that scenario-based simulation is a good way to prevent iatrogenic risk related to medical errors [9]. However, the drawback of SBS includes time constraints, lack of technological competency, and workload issue, which can be challenging for nursing faculty [10, 11]. Additionally, it demands an understanding of the process and application of SBSs in practice, and a more standardized approach to the development of simulation scenarios [10].

Some Asian countries are facing challenges in providing high-quality teaching for nursing students including a lack of resources available for students, a lack of computers and internet access, and a scarcity of teachers [12]. Similarly, in Vietnam, there were identified restrictions in clinical practice facilities, where the equipment for nursing practice classes is not adequate for educational needs, lack of teachers, and need to renovate and enhance their teaching competencies, as well as modernize teaching approaches and resources, adapted to training needs [12]. Hereupon, in those countries, there is evident underdevelopment of equipment and pedagogical models that allow the differentiated training of health professionals in the scope of HAI prevention and control. Moreover, its educational approach does not reflect the potential of nursing students to act as future nurses with competencies to deal with and resolve scenarios where unsuitable professional nursing practices may represent a focus of infection with an impact on patient safety and well-being. Therefore, the PrevInf project funded by Erasmus+ was implemented in Asian countries to assist universities in Asian countries in improving nursing students' competencies in HAI-PC by the development of the nursing curriculum, regarding the prevention and control of HAIs, through the provision of pedagogical materials and teaching strategies, such as practice-based Simulation Scenarios, to teachers and nursing students. This paper reports on the implemented piloting PrevInf Simulation scenarios in four universities in Asia to explore educators' perception of the role of simulation scenarios as a new teaching method as well as their suggestions to improve simulation education.

2. Materials and Methods

2.1. Study Design

An exploratory qualitative study was conducted and used focus group interviews to explore educators' perceptions of simulation as a teaching method to enhance nursing students' capacity regarding HAI-PC. The study was reported against the 'Consolidated criteria for reporting qualitative research checklist' (COREQ) used to guarantee uniformity in qualitative research.

2.2. Setting

Two universities in Vietnam and two universities in Cambodia including Haiduong Medical Technical University (HMTU), Namdinh University of Nursing (NDUN), International University [13], and Bolyno Institute (BNI) were chosen for this study following reasons: (1) all four universities participated the "capacitating Asia's Nursing students on innovative and sustainable prevention and control of healthcare-associated infections" project, (2) provided a nursing program for a bachelor's degree, and both counties are in Asia with similar cultures and politics.

2.3. Participants

A purposive sample of at least 10 educators from each university was invited to participate in a focus group following the inclusion criteria: (1) currently working in the university, (2) having at least one year of experience in teaching practice, and (3) having at least a bachelor's degree. Exclusion criteria included educators who were not present at the time of the data collection.

2.4. Instrument

The eight-question semi-structured interview was used for focus group discussions in a comfortable setting. The interview guide was developed based on a previous literature review from the European PrevInf research partners which focuses on areas including (1) the role of simulation, (2) the process of conducting simulation

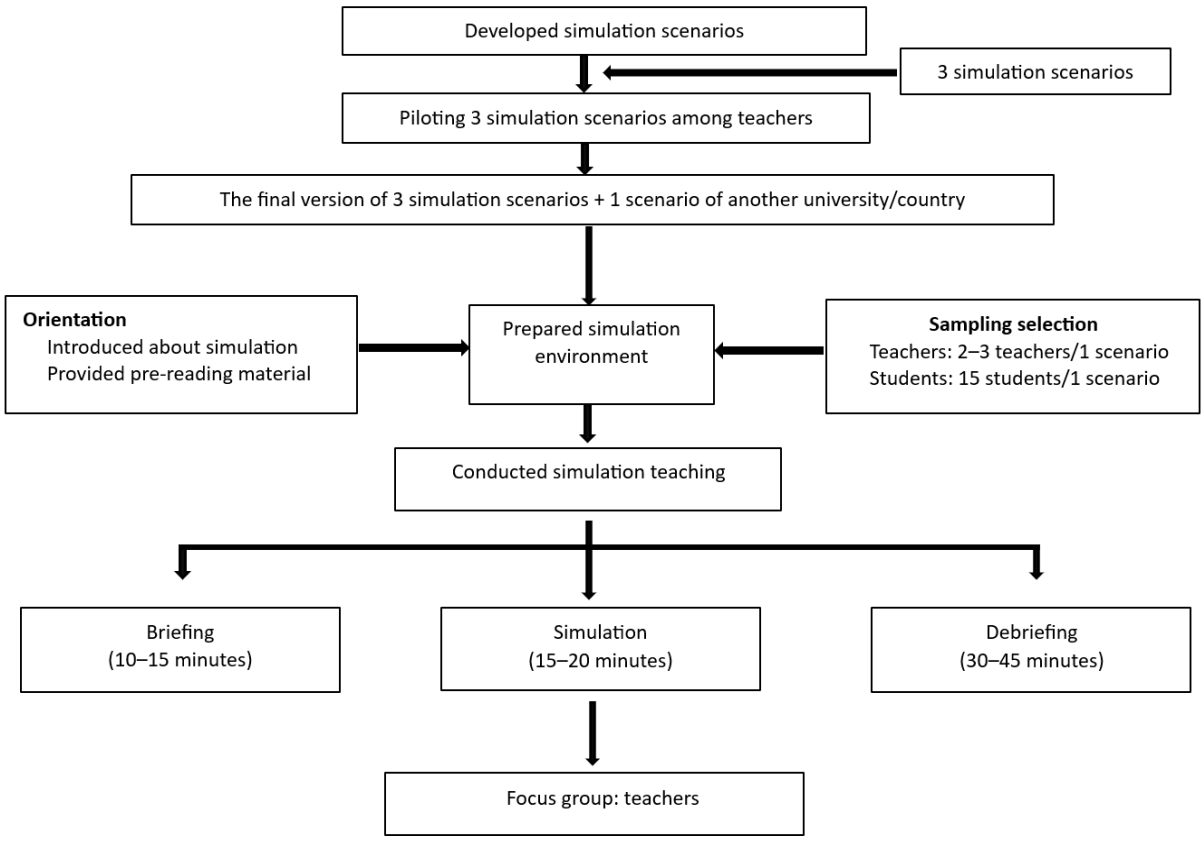
such as preparing reading materials, orientation, briefing and debriefing, and (3) suggestions to improve simulation. The interview guide was checked and translated by groups of the research team at each university before the actual data collection.

Before starting the data collection, pilot testing of the interview questions was carried out in HMTU. Two nurses who were employed part-time lecturers in the hospital were invited for the pilot interview to detect problems with the wording of instructions, and questions and determine the time involved. Only minor revisions were made to the questions by adding additional explanations before asking educators' perceptions of simulation as a teaching method for nursing education.

2.5. Data Collection

The process of data collection is described (Figure 1) in the following. Firstly, each university developed three simulation scenarios associated with HAI prevention and control with experts' consultation from European project partners. Secondly, each scenario was piloted among teachers in a research team to test and validate the simulation scenario and minor changes were made. Thirdly, each university used three scenarios from its own developed, supported by teachers at the European PrevInf partners, and picked one more scenario from other partner universities to pilot among nursing students. Fourthly, to prepare for the simulation and select participants, the research teams of each Asian university prepared a simulation and invited target participants to attend the simulations. Each simulation was run for around 2 hours with three sections including briefing, simulation action and debriefing. Teachers were invited to participate in the discussion group at the end of each piloted simulation.

Figure 1: Process of data collection.



The focus groups were conducted at locations that were regularly used for meetings. At the beginning of the focus group, a brief orientation was provided about the purpose of the study, the topic of the discussion, asking permission for the recording of the discussion, and the right to decline to answer questions at any time during the study. Participants were invited to sign a consent form after an opportunity to ask further questions**.** Each

focus group included one moderator and one facilitator from the research team to lead the discussion. The focus groups lasted 60–90 minutes.

Participants discussed their perceptions of how simulation improves HAI teaching and what kind of challenges it may arise. Moreover, they suggested implementing SBS as a teaching method to enhance nursing students' capacity regarding HAI-PC.

2.6. Data Analysis

Data from the focus groups were transcribed verbatim by the Asian research teams. Transcriptions were carried out progressively as each focus group was completed. The transcripts were compared with audio recordings to ensure accuracy. Both inductive and deductive qualitative content analysis were used to analyse the qualitative data from the focus groups. The inductive qualitative content analysis developed by Elo and Kyngäs [14] was used to analyse the focus group data from HMTU University first. This process of data analysis includes three phases: preparation, organizing and reporting. Regarding the preparation phase, data from the first focus group was read and reread several times to understand the meaning and then the participants' statements were divided into meaning units. This included all words, nouns, phrases, sentences, or even the portion of pages related to simulation. Each of the responses was read to highlight exact words, phrases, or ideas that captured units of information. The process of the organizing phase included open coding, creating categories, and abstraction. For the open coding, notes and headings were written in the text while reading it. Each data segment was reread through, and coded, and the code entered on the left-hand margin opposite the transcribed interview to describe all aspects of the content. The headings were collected from the margins and put into coding sheets and sub-categories were freely generated at this stage. After open coding, the lists of sub-categories were grouped under higher-order headings. Sub-categories with similar events and incidents were then grouped into categories to provide a means of describing the phenomenon. Each category was named using content-characteristic words. An example of coding is provided in Table 1 below.

Table 1: Coding example.

Transcription	Open Coding	Sub-Categories	Main Category
'Simulation creates a safe environment for the student to practice and let students make mistakes without harm to real patients.'	Safe environment Let students make mistakes, without harm to patients	Empowering confidence in nursing care	Enhancing nursing competence
'Simulation assists students in reinforcing comprehensive knowledge and practice of infection and prevention control as well as other nursing skills such as communication and critical thinking skills.'	Reinforcing comprehensive knowledge and practice	Integrating theory and practice	

Regarding applying the deductive content analysis method, once the structure of categories and subcategories emerged from the HMTU team. Then it was sent to the rest of the HMTU research team to double-check with the transcript. After the structure of categories and subcategories were approved by HMTU team, then it was sent to the Asian partner universities to use the structure of categories and subcategories to analyse the data they had collected.

2.7. Validity, Reliability, and Rigour

To increase the rigor of the qualitative data analysis, the identified categories, and sub-categories in the two transcripts were discussed with the other researchers in the HMTU research team and were further refined. These were rechecked categories. Once the researchers had agreed on the categories and subcategories, the first author sent the structure of analysis to another university to analyse the remaining transcripts from three other universities. Any inconsistencies were discussed between authors until a consensus was reached. In addition, to overcome challenges to rigour in reporting qualitative studies, the use of COREQ composed of a 32-

item checklist (Supporting information Appendix 1) provided a framework for explicit and comprehensive reporting.

2.8. Ethical Approval

Ethical approval for the study was obtained from the Institutional Review Board of Asian partner universities. The research proposal was also approved by the Ethics Committee of the Health Sciences Research Unit: Nursing of the Nursing School of Coimbra with number P761-3/2021. Informed consent was obtained to ensure that the subjects voluntarily participated in this study. The participants in the study were provided with full information about the study including the purpose, research methods, and their right to withdraw from the study at any time without consequences.

3. Results

Participants' demographic

Forty educators from four universities in Asian countries (Vietnam and Cambodia) were invited to participate in the study, and 37 of them were recruited. The mean age of the participants was 39.5, and around 70.3% of them were nursing teachers. Most participants had master's degrees 62.2%. The mean experience in teaching was 11 years, and the mean professional experience was 13 years (Table 2).

Table 2: Participant demographic characteristics (n = 37).

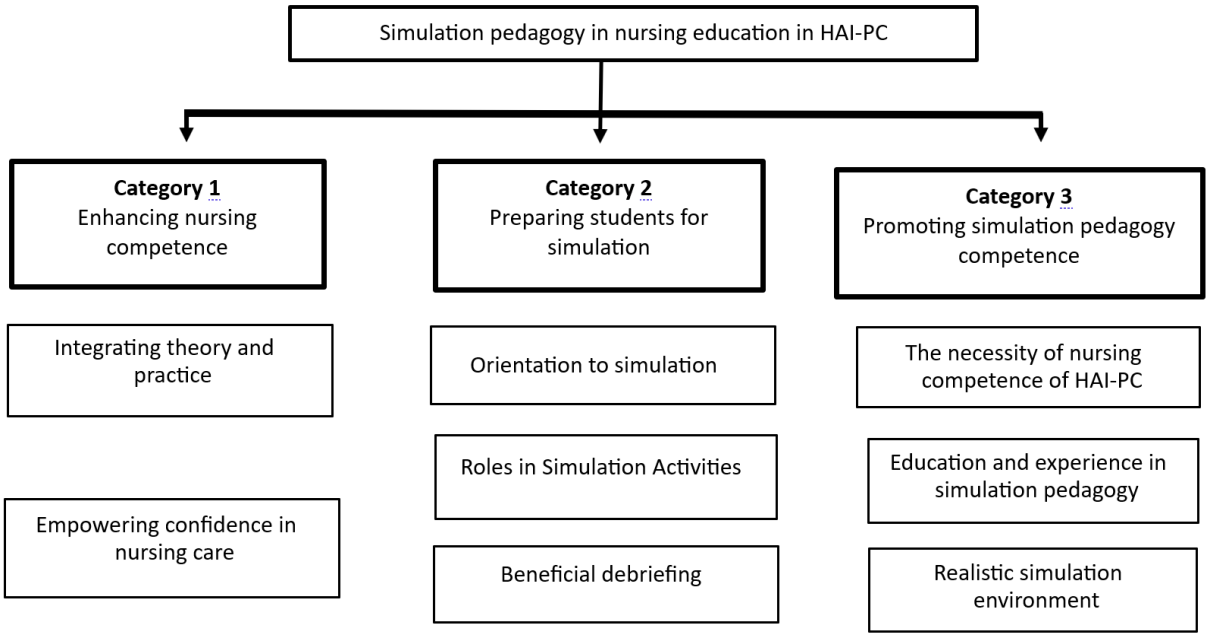
Educators' Characteristics	Value	Number (N)	Percentage (%)
Gender	Male	16	43.2
	Female	21	66.8
Professional background	Nursing teacher	26	70.3
	Physician	10	27.0
	Physiotherapist	1	2.7
Highest qualification	Professor	1	2.7
	Assist. Professor	1	2.7
	PhD degree	1	2.7
	Master's degree	23	62.2
	Medical doctor degree	5	13.5
	Bachelor's degree	7	18.2
Universities	HMTU	11	29.7
	NDUN	10	27.1
	BNI	8	21.6
	IU	8	21.6
Teaching courses	Fundamental of Nursing, Adult Nursing, Community Health, Fundamental Nursing, Nursing Research, Statistics, Nursing Theory,		

	Nursing Ethics, Nursing Process, Medical Terminology, Anatomy and Physiology.

	Mean (SD)
Age (years)	39.5 (11.8)
Professional experience (years)	13 (8.7)
Experience in teaching (years)	11 (8.5)

Three major categories emerged from the data: (1) Enhancing nursing competence; (2) Preparing students for simulation; and (3) Promoting simulation pedagogy competency (Figure 2).

Figure 2: The major categories and sub-categories.



3.1. Enhancing Nursing Competence

The category enhancing nursing competence was associated with the role of simulation as a teaching method to support nursing students to foster their knowledge and skills associated with HAI-PC. The main category was made based on the subcategories: integrating theory and practice and empowering confidence in nursing care.

Integrating theory and practice was an important result of simulation pedagogy. Simulation assisted students in learning theory based before simulation and thereafter to apply the knowledge in practice caring for patients in the scenarios. Simulation made theory and practice integration possible not only in general knowledge but also assisted students in improving knowledge associated with HAI prevention and control. The teacher was needed to point out the connections between previously learned knowledge, maybe to repeat them for this scenario and to take it into the current caring situation. That is how integrating theory and practice in simulations also fostered the redevelopment of competence and assisted students reflectively in progress in their studies.

> 'Lecturer competency plays an important role in integrating the strategy from theory into practice during the HAIs simulation'. (BNI)

> 'Simulation assists students in reinforcing comprehensive knowledge and practice of infection and prevention control as well as other nursing skills such as communication and critical thinking skills'. (HMTU)

> 'Applying simulation will help the student to improve their clinical intervention in a real practice including communication, observation, and technical skills'. (BNI)

Empowering confidence in nursing care was described, as in one simulation the students were able to practice a variety of nursing skills leading to better care in a clinical setting. The association between learning in simulation and future patient safety was pointed out to emphasize the importance of scenario-based simulation. Providing a safe environment for learning in simulation created a possibility for students to gain confidence. Such a safe learning environment, where students could practice with sufficient orientation and not have to hurry at all times was pleasant. Moreover, it is comprised of a comfortable and acceptive atmosphere for having even possibility to make unintentional mistakes without harming the real patients.

> 'Applying simulation scenarios will help students learn how to handle a specific situation by combining different skills to solve problems. This will be beneficial for students when taking care of real patients in clinical practice by reducing errors.' (HMTU)

> 'Teachers create a comfortable atmosphere so that students can freely express all their difficulties and questions as well as reduce mistakes by learning from their peers'. (IU)

3.2. Preparing Students For Simulation

This category focused on nursing teachers' points of view of preparing students for simulation. This category is discussed under the following sub-categories: orientation to simulation, roles in simulation activities and beneficial debriefing.

***Orientation to simulation*,** which started in the theory classes by providing supportive pre-reading materials to students to read at home before attending the simulation. Pre-reading materials were necessary for students because those provided the most important content of the simulation and assisted students in understanding how they needed to be prepared for attending the simulation. However, lecturers shared challenges associated with taking time and effort to prepare pre-reading materials.

> 'Pre-reading materials are necessary for guiding the students before conducting the simulation scenario'. (IU)

> 'Pre-reading material helps students consolidate their knowledge and prepare well before performing the simulation'. (NDUN)

At the beginning of the simulation, the pre-simulation orientation assisted students in understanding the specific objective of the scenario and guided them through the process of applying previous knowledge and skills in the decision-making process*.* Lecturers expressed their perceptions on the role of orientation as an important step in conducting effective simulation.

> 'The clear and specific orientation of lecturers helps students understand the purpose and objectives of the simulation session.' (NDUN)

> 'Orientations are also necessary for students to better understand the task when performing simulation activities (actors, observers, etc.)' and must be provided as essential and compulsorily for starting the simulation'. (IU)

To give an effective orientation, teachers suggested using a video to help students understand the simulation more easily as a new teaching method.

> 'Teachers can show samples of applying simulation as new teaching by providing a video for students so that they can easier imagine the role of each member in the simulation'. (HMTU)

Roles in Simulation Activities. Students acting as actors or observers assisted them in gaining knowledge and skills associated with HAIs, like hand hygiene and waste disposal. Teachers also noted that students are not

only learning when acting as actors, simulation assists students' learning when acting as observers too. Simulation also allowed students to adapt individual learning processes.

> 'With a role as actors, students can better understand infection control such as when to wash hands, how to separate waste, how requirements are disposed of...'(HMTU)

> *´Students acting as observe, gain experience, and knowledge from observing actors, and discussing deeper at the end of the simulation to get better understand'. (HMTU)*

Beneficial debriefing. The educator expressed the importance of conducting a debriefing after the simulation. They also expressed their concern regarding the challenges to leading debriefing effectively and not failing the debriefing by focusing on criticizing students' errors or mistakes.

> 'Debriefing section provides opportunities for students to reflect on what has been done and learning with each other'. (NDUN)

> **'**Debriefing helps students consolidate their knowledge and correct their mistakes'. (HMTU)

On the other hand, debriefing was the challenging part when conducting SBS because it not only required lecturers with knowledge and skills related to the topic but also a variety of management skills to conduct an effective SBS.

> 'It is hard to provide a successful debriefing… and manage time and discussion. Otherwise, they may focus on criticizing the mistakes that students have made rather than focusing on helping students' learning to achieve the objective'. (BNI)

Therefore, a participant from HMTU gave suggestions for lecturers to conduct a debriefing by preparing skills to summarise and lead effective debriefing.

> 'Lectures need to have skills such as time management, ability to observe students' progression and to make a summary of the key knowledge. They also need to be able to assist students to form a unified comprehension of the scenario to do better the next time'. (HMTU)

3.3. Promoting Simulation Pedagogy Competence

This category relates to educators' suggestions for the improvement of simulation. It indicated that strengthening knowledge associated with HAI-PC and receiving more simulation training, especially on writing scenarios and debriefing, is essential for educators to be confident and provide effective simulations. Also, the improvement of the environmental setting needs to be paid attention to create a realistic environment for students to practice. Three subcategories were presented including the necessity of nursing competence of HAI-PC, education and experience in simulation pedagogy and realistic simulation environment.

The necessity nursing competence of HAI-PC. Many participants expressed the essence of having knowledge and skills related to HAI-PC to be able to write clinical situations close to real. Besides that, participants also considered updating knowledge associated with HAI-PC between international and national guidelines should be integrated. For example, an educator pointed out,

> 'Strengthening capacity regarding the core competency of HAI-PC is essential to receive more up-to-date knowledge'. (BNI)

> 'Information provided for students should consider the local context which means the combination between international standard clinical practice (CPG) and national guideline'. (IU)

Education and experience in simulation pedagogy: This subcategory referred to educators' views on their competence in conducting simulation and their need to improve their teaching methods. Many participants

expressed their worries about conducting the simulation those concerns included writing scenarios, setting up the simulation environment, using models, and managing and guiding the debriefing discussion.

> 'I am not confident when implementing the simulation steps, especially the stage of the ongoing situation and the debriefing after the situation'. (NDUN)

Educators also expressed their concern about writing simulation scenarios.

> 'Writing real clinical scenarios, from basic to advanced, suitable to the level of students and modules are necessary'. (IU)

> 'Person acting as the patient in the simulation needs to be trained to act similar to clinical reality so that students can develop critical thinking and other skills such as communication skills'. (HMTU)

Therefore, suggestions to improve the simulation also were provided among participants.

> 'Need to be trained in developing simulation scenarios for infection prevention and control so that lecturers can master the scenario'. (NDUN)

Realistic simulation environment. Making a realistic simulation environment refers to preparing the simulation environment as authentic as in the healthcare units to assist students in getting used to clinical practice. Educators expressed their concerns about the need to develop a more realistic environment for the simulation because the current settings did not meet the requirements yet:

> 'Simulation room is still not suitable yet. It needs to be fully equipped like hospital environment to help students feel like the real hospital'. (HMTU)

> 'Effective environment learning including convenience simulation room will provide the more competency among the mentor and lecturer'. (BNI)

4. Discussion

This study aimed to explore educators' perceptions of simulation as a teaching method for nursing education in HAI prevention and control in four Asian universities. The findings indicate that educators perceived simulation as a relevant pedagogic method to be valuable for supporting the nursing students' learning and building their HAI-PC competencies. This is in accordance with previous studies from both high-income [15] and low-income countries [16]. The WHO has also indicated that health education institutions should utilize simulation in the education of health professionals because it is a highly valuable pedagogical tool for training nurses and midwives [3].

The benefits of the SBS were acknowledged by educators in this study and were viewed as a great learning method for students to integrate theory into practice and empower students' confidence in providing patient care. These findings correlate with several studies that demonstrated the benefits of using simulation to improve study learning [17] [5]. Previous studies have shown the effectiveness of simulations in teaching and solution for transitioning students from the university learning environment to clinical practice. A study indicated that simulations brought strong effects in nursing education and assisted students in increasing knowledge acquisition and enhancing professional skills, critical thinking, and clinical judgement ability [6]. Other studies indicated that simulation-based training not only improved learners' sense of competence and confidence but also increased knowledge and compline in infection prevention and control leading to decreased HAI rates and reduced healthcare expenditure [5]. Moreover, simulation give students the possibility to reflect on their learning and competence with their student colleagues [8]. However, the drawback of SBS included time constraints, lack of technological competency, and workload issue, which can be challenging for nursing faculty [10, 11]. Further, it demands an understanding of the process and application of SBLs in practice, and a more standardized approach to the development of simulation scenarios [10].

The educators highlighted one of the essential steps for an effective simulation the pre-simulation orientation to guide students through the process of applying previous knowledge and skills to simulation, which is in line with other study [18]. An orientation session should be held before the simulation to familiarize students with learning objectives, ground rules, role assignments, equipment and simulation modality to be used [19, 20], because orientation also assist students to promote self-confidence and provide a calm environment to practice [18]. Therefore, the INACSL Standards Committee recommended a checklist for educators to use as a guideline for preparing students for orientation to the simulation. Videos provide consistency in the orientation process and an opportunity for students and teachers review as necessary [21]. Further findings suggest that providing material and resources before the simulation promotes students' ability to be successful in addressing the simulation objectives. Educators should need to insist students to complete preparation activities in advance of the simulation [21]. These recommendations corresponded with the suggestions from educators in the current study.

In the present study, educators involved in simulations were seen as equally influential in the learning process, regardless of whether they took on observational roles or actively participated hands on. These findings correspond with a systematic review of learners who valued observer roles because they had an over overarching view, examination of details from a distance, and meaningful feedback during debriefing [22]. This can be explained by Bandura's social learning theory, which proposes that virtually all learning acquired experientially can also be acquired as vicarious learner[23]. Through observation, learners can build behaviours without trial and error, but experience emotions by watching and resolve fears through other's experiences. Bethards [2014] similarly reports that this provides all learners, regardless of their roles, the same opportunities to achieve the learning objectives [24]. However, the learners who did not value observer roles as highly as a hands-on role described observer roles as passive, or boring because they were not fully engaged in the learning process [25]. Emotional engagement in simulation is connected to the feeling of relevance of the scenario to the goals of the simulation. Lack of guidance for the observer role tasks may have prevented observer engagement [22, 26]. Learners who valued observer roles described it as being less stressful and providing them the opportunity to see the big picture, examine details from a distance, and provide meaningful feedback to the team [22].

Debriefing is the "heart and soul" of the simulation experience [27]. For this study, debriefing was experienced by educators just an important section when conducting simulation because after the simulation it helped students to understand the key competence applied in the simulation, to improve for the next simulation. However, educators in this current study also expressed their concern regarding the challenges of how to guide an effective debriefing. In line with Secheresse, Lima [28], the debriefing technique should be adapted to the objectives of the training and learners previous competence [28]. In line with a previous study, World Health Organization [3] stated that debriefing needs to be conducted in a non-judgmental manner, the facilitator must discuss positive aspects observed during simulation and areas that need improvement.

In agreement with prior studies, the findings of the current study also highlighted the need for improvement in conducting SBS in Asian countries including having knowledge and skills related to HAI-PC, feeling less confident in simulation, and needing more education and experience in simulation pedagogy. Additionally, there is a need for realistic simulation environment**.** Similar to these results, a prior study suggested that educators using SBS lacked confidence in their proficiency with simulation pedagogy**.** By comparison, educators who used SBS more frequently in the past 12 months showed stronger self-confidence. Educators would gain confidence with the increased use of simulation [30]. The literature proposes that persistent deliberate practice is an efficient way to develop necessary simulation teaching skills [31]. Some researchers suggested that preferred strategies to develop simulation guidance competencies are observing skilled instructors' simulation teaching and understanding simulation through trial and error [32] and practicing simulation teaching in a safe and simulated educational environment with feedback from experienced simulation facilitators [13]. Some emphasize that an overall training program of SBS may promote the competencies of nursing educators [31].

This current study also highlights the importance of setting up a realistic simulation environment, which is in line with a study indicating that SBL needs to use real medical equipment and supplies. This implies that institutions need to procure medical equipment and supplies to ensure realism during simulation. Equipment requires regular maintenance and servicing, faculty members need ongoing training in simulation techniques, and there is a continuous need for administrative and technical support for simulation facilitators. All these actions require financial resources [33]. Additionally, if the simulation lacks realism and is very different from what students see in real clinical practice. Earlier studies have already shown, that students had negative feelings for simulation because lack of realism [34, 35]. Although it is not always possible to create scenarios that are totally equal to the reality, the educators should focus on creating simulation scenarios that represent an approximation to reality. SBS, without any doubt, has proven to be highly favourable, optimizing the teaching, learning and assessment processes in higher education.

5. Conclusion

This study provides knowledge and insight into educators' perception of scenario-based simulation as a new pedagogy method in Asian countries. Overall, the educators expressed the importance and benefits of using simulations for students as it improved students' competence and prepared them for professional practice. However, the educators emphasized the need to improve nursing knowledge of HAI-PC and training in simulation pedagogy to ensure high-quality education in low-resource settings. Further research is necessary to explore whether educators can apply effective simulation in teaching.

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Declaração Ética

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Revisão por Pares: Dupla revisão anónima por pares.

Experiences of the nursing student in learning HAI prevention and control in Asian countries through the use of scenario-based simulation: an explorative qualitative study

Experiências do estudante de enfermagem na aprendizagem da prevenção e controlo de IACS em países asiáticos através do uso de simulação baseada em cenários: um estudo qualitativo exploratório

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Abstract

Background: Healthcare-associated infections (HAIs) have posed a major threat to both patients and to the safety healthcare personnel worldwide. According to the World Health Organization, 10% of hospitalized patients are affected by HAIs worldwide.

Objective: The objective of this study was to explore the experiences of nursing students in learning HAIs prevention and control by the application of the scenario-based simulation pedagogy now in use in two Vietnamese and two Cambodian universities.

Methods: A qualitative study was conducted among 160 nursing students from 2 Cambodian universities and 2 Vietnamese universities, and by using the purposive-sampling method. The data were collected through a focus group discussion and analyzed by the Graneheim and Lundman method (Graneheim & Lundman, 2004).

Results: Two themes and six categories were generated. 1) First theme: factors for enhancing student learning on the prevention and control of HAIs by use of scenario-based simulation; and 2) Second theme: factors hindering students learning on HAI prevention and control by use of scenario-based simulation.

Conclusion: The findings showed that SBS is an effective learning method for nursing students that can be applied to enhance the quality of nursing education in the Asian countries as SBS not only improves the clinical skills, but also the soft skills of nursing students. However, the effective outcomes and impacts can only be achieved in the context with the appropriate learning materials and equipment, simulation facilities and the instructors with pedagogical skills.

Keywords: Enhancing Factors; Hindering Factors; Qualitative Research; Scenario-Based Simulation; Standardized Patient.

Resumo

Enquadramento: As infeções associadas a cuidados de saúde (IACS) têm representado uma grande ameaça tanto para os pacientes quanto para a segurança dos profissionais de saúde em todo o mundo. De acordo com a Organização Mundial da Saúde, 10% dos pacientes hospitalizados são afetados por IACS em todo o mundo.

Objetivo: O objetivo deste estudo foi explorar as experiências dos estudantes de enfermagem na aprendizagem da prevenção e controlo de IACS através da aplicação da pedagogia de simulação baseada em cenários, atualmente em uso em duas universidades vietnamitas e duas universidades cambojanas.

Métodos: Um estudo qualitativo foi conduzido entre 160 estudantes de enfermagem de duas universidades cambojanas e duas universidades vietnamitas, utilizando o método de amostragem propositada. Os dados foram recolhidos através de uma discussão em grupo focal e analisados pelo método de Graneheim e Lundman (Graneheim & Lundman, 2004).

Resultados: Dois temas e seis categorias foram gerados. 1) Primeiro tema: fatores que contribuem para a aprendizagem dos estudantes na prevenção e controlo de IACS pelo uso de simulação baseada em cenários; e 2) Segundo tema: fatores que impedem a aprendizagem dos estudantes na prevenção e controlo de IACS pelo uso de simulação baseada em cenários (SBC).

Conclusão: Os resultados demonstraram que a SBC é um método de aprendizagem eficaz para estudantes de enfermagem que pode ser aplicado para melhorar a qualidade da educação em enfermagem nos países asiáticos, uma vez que a SBC não só melhora as habilidades clínicas, mas também as habilidades interpessoais dos estudantes de enfermagem. No entanto, os resultados e impactos efetivos só podem ser alcançados no contexto com os materiais e equipamentos de aprendizagem apropriados, instalações de simulação e instrutores com habilidades pedagógicas.

Palavras-Chave: Fatores Facilitadores; Fatores Impedidores; Paciente Padronizado; Pesquisa Qualitativa; Simulação Baseada em Cenários.

1. Introduction

Healthcare-associated infections (HAIs) have posed a major threat to both patients and the safety of healthcare personnel worldwide. HAIs have also prolonged the duration of hospitalization and increased the costs for healthcare facilities and patients (Raka, 2012). Worldwide, 10% of patients are affected by HAIs. A total of 7% of patients admitted to acute care hospitals in developed nations and 15% in developing nations had acquired at least one form of HAIs (WHO, 2016). A prevalence rate of 5.9% occurred among patients with at least one HAI in the European Union and European Economic Area (EU/EEA). The prevalence of HAIs within the EU/EEA was estimated to be between 4.4% in primary care hospitals and 7.1% in tertiary care hospitals. It was highest in patients admitted to intensive care units, in which 19.2% of patients were infected with at least one HAI, as compared to an average of 5.2% for all other specialties combined (Suetens et al., 2018). In Southeast Asia, it was reported that in 2015, there was a 9% prevalence and 2% incidence of HAIs in the intensive care units (Ling et al., 2015). Results from a prospective surveillance of HAIs in the pediatric hospital in Cambodia, between January and December 2015, showed an incidence of 3.1% of admitted patients (Hearn et al., 2017). A study in 2016 on the burden of HAIs and antimicrobial use in Vietnamese adult intensive care units revealed that the prevalence of HAIs was 29.5% (Phu et al, 2016). These adverse events happened mostly in hospitals during healthcare delivery, and they could have been prevented by applying standard precaution measures (Raka, 2012). Among healthcare professionals, nurses represent the largest number of healthcare professionals, since they have close contact with patients. Thus, their knowledge, attitude and adherence to standard precautions have an impact on the prevention of HAIs (Sharma et al., 2012).

Improving nursing competence in infection prevention and control (IPC) would contribute to the reduction of HAIs. One of the effective methods for improving the competency of nursing students on IPC is the application of scenario-based simulation (SBS) education. There is no doubt that it is a valid learning and teaching method to help students learn clinical and non-clinical skills, such as self-confidence, teamwork, communication, critical thinking, clinical reasoning and problem solving (Cant & Cooper, 2017). The study on reflection as a factor promoting the learning of inter-professional collaboration in a large-group simulation in social and health care shows that the simulation, in particular, promoted collaboration skills and strengthened the significance of collaboration. Moreover, the inter-professional simulation strengthened the participants' knowledge of the significance of interacting with patients (Silén-Lipponen & Saaranen, 2021). This innovative learning and teaching method has been implemented over the past decades in developed countries, where it has been shown to be useful and effective for the learning process and clinical practice of the students without causing risk to actual patients before they begin providing professional patient treatment (Cant & Cooper, 2017). Although it has been shown to be an effective method for learning, the literature reveals that simulation has barely been implemented in low-income countries (Bø et al., 2021).

Although SBS has been recommended in nursing education and there is evidence of its benefits, many institutions have difficulties in integrating simulation methods into their curricula. The reasons are the lack of national incentives to transform and scale up nursing education, unavailable funding, the condition of the existing facilities, the state of the curriculum management and the disposition of the school faculties (WHO, 2018). This situation is similar in Cambodia and Vietnam, where the traditional methods are still widely used in most universities. Nevertheless, some universities in Vietnam have recently experimented with simulation-based training as an innovative learning and teaching method (Tram & Lam, 2022). The Vinmec Medical Simulation Center was established in Vietnam in 2017 to promote continuous professional development for healthcare professionals. This center offers simulation training such as a nursing process-based skill-training program and communication-skills training, among others (Gullo & Vu, 2018).

The simulation pedagogy has been piloted as a PrevInf project "Capacitating the competence of Asia's nursing students on the prevention and control of HAIs" in Vietnam and Cambodia. It is a joint project of a Nursing School in Portugal, a University in Finland and two Vietnamese and two Cambodian Universities. The purpose of the project is to improve the knowledge and skills of nursing students regarding HAIs. The project has introduced a simulated pedagogy method for nursing courses. As the simulation-based pedagogy is rather new for most universities in Vietnam and Cambodia, it is therefore necessary to assess the students' experiences with this learning method.

The objective of this study was to explore the experiences of nursing students on their learning of HAI prevention and control by the application of the SBS pedagogy in two Vietnamese and two Cambodian universities. This paper attempts to answer the following questions:

- What are the factors enhancing student learning of HAI prevention and control by the use of SBS?
- What are the factors hindering student learning of HAI prevention and control by the use of SBS?

2. Methodology

2.1. Study Design

This is a descriptive qualitative study conducted among nursing students from two nursing universities in Vietnam and two nursing universities in Cambodia. The descriptive approach helped to illustrate the learning experiences of nursing students by use of the SBS included in a nursing-education program aimed at the prevention and control of HAIs.

2.2. Participants

A purposive-sampling method was used in this study. The participants were thus intentionally selected on the basis of specific inclusion criteria, such as being in their second and third year of nursing courses and having completed their studies on IPC. Students were invited to participate in the SBS sessions and to join the focus

group discussions (FGDs) for this study as per mutual consent. 16 FGDs were conducted involving 160 nursing students from 4 different nursing universities, of which 2 of the nursing universities were located in Cambodia and the other 2 in Vietnam. Each nursing university had conducted 4 different SBSs, followed by 4 sessions of FGDs; and 8 to 12 nursing students were invited to join in each FGD. Certain abbreviations were used to refer to the participants for citation purposes. Accordingly, the abbreviation "Vs" referred to Vietnamese students, while "Cs" referred to Cambodian students.

2.3. Data Collection

Data were collected via FGDs after the SBSs were performed. Each nursing university had conducted 4 different SBSs, followed by 4 sessions of FGDs. From 8 to 12 nursing students were invited to join in each FGD. Eight semi-structured interviews with open-ended questions were used to guide the FGDs with nursing students, and they were moderated by two researchers per each group. The interview guide was developed based on a literature review of IPC education from European InovSafeCare research partners and then it was checked, translated, and pilot tested by the team of researchers from each university before they were used to guide the FGDs to explore the experiences of the students in an SBS. The data collection was conducted from September to October of 2022.

2.4. Data Analysis

Graneheim and Lundman´s (2004) five-step content analysis approach was used in this qualitative analysis. In the first step, the interview texts were transcribed from an audio recording by each of the researchers from the universities and translated into English, and thereafter the data analysis was conducted by two researchers from one university. In the second step, the interview texts were read several times to gain a general understanding and to familiarize the students with the contents. In the third step, a decision was reached on the concept of meaning unit as based on the research questions, and the reduction process then started. So, the meaning units and condensed meaning units were determined. In the fourth step, the grouping, abstraction and conceptualization were started. At this stage, similarities and differences were discussed. In this way, the similar initial content was classified into subcategories as examples, as shown in Table 1. In the fifth step, the abstraction and grouping were finished. The subcategories were compared with each other. Accordingly, the main categories were introduced and finally the themes were presented as examples, as shown in Table 2. All themes and categories were examined by the project group to ensure clarity of the categories and the fit of the data within each subcategory.

Table 1: Examples of meaning units, condensed meaning units and subcategories.

Meaning Units	Condensed Meaning Units	Subcategories
"Simulation is very useful; it is an enjoyable experience. So, to me, simulation scenario is quite interesting, I will recommend it to my friend to try it if she is invited."	Students are satisfied and expected to be more involved in learning through SBS.	Excitement and joyfulness during simulation.
"Students felt satisfied when they experienced a closeness to reality when participating in SBS and having the opportunity to discuss both theoretical knowledge and clinical experiences with their instructors more interactively."	The SBS model has produced pedagogical power for the student interactive-learning approach.	Satisfaction with simulation-produced energy for learning.

Source: The method adapted from Graneheim & Lundman, 2004.

Table 2: Examples of extracted themes and main categories from a content analysis of the data.

Subcategories	Main Categories	Theme
Improved teamwork skills. Enhanced self-learning abilities. Improved self-confidence and critical thinking skills	Improved nursing competence.	Factors enhancing student learning on HAI prevention and control by using SBS.
Excitement and joyfulness during simulation Satisfaction with the simulation-produced energy for learning.	Personal satisfaction.	

Source: The method adapted from Graneheim & Lundman, 2004.

2.5 Trustworshiness

In this qualitative study, the concepts of credibility, dependability and transferability were estimated for their trustworthiness (Graneheim & Lundman, 2004). Credibility was established through data collection by two investigators for each FGD. The guiding questions were prepared by research experts from the PrevInf project and translated into local languages by an investigator team from both countries and tested with nursing students to check the understandability of these questions before conducting the FGDs. Then data were transcribed from an audio recording and then underwent a peer review to verify its content. Moreover, the debriefing was held with peers who were qualitative-research experts to verify the data collection and analysis processes. Dependability was achieved by conducting pilot FGDs with nursing students during the same academic year as the study participants. The purposive-sampling technique was used to select study participants from the four universities of two countries. Nursing students in their 2nd and 3rd years who have learned fundamental nursing and IPC, and who shared other similar characteristics and learning experiences, were selected for this study. Detailed information of the study participants and the study context were presented to ensure transferability.

2.6. Ethical Consideration

Ethical approval for the study was obtained by the Institutional Review Board of Asian partner universities. Study information was provided in Vietnamese and Cambodian, and participants were encouraged to ask questions before they signed their informed consent forms. The present investigation was also approved by the Ethics Committee of Asian Universities and is registered in the Health Sciences Research Unit: Nursing (UICISA: E), of the Nursing School of Coimbra (Portugal) with the reference number P761-3/2021. The participants were informed about the study and its objectives, as well as the voluntary nature of participation. Alphanumeric characters were used instead of the participant's names in the analysis of the results and publication.

3. Results

There were 160 nursing students from 2 nursing universities in Cambodia and 2 nursing universities in Vietnam participating in this study. The information pertaining to the characteristics of students is shown in below Table 3.

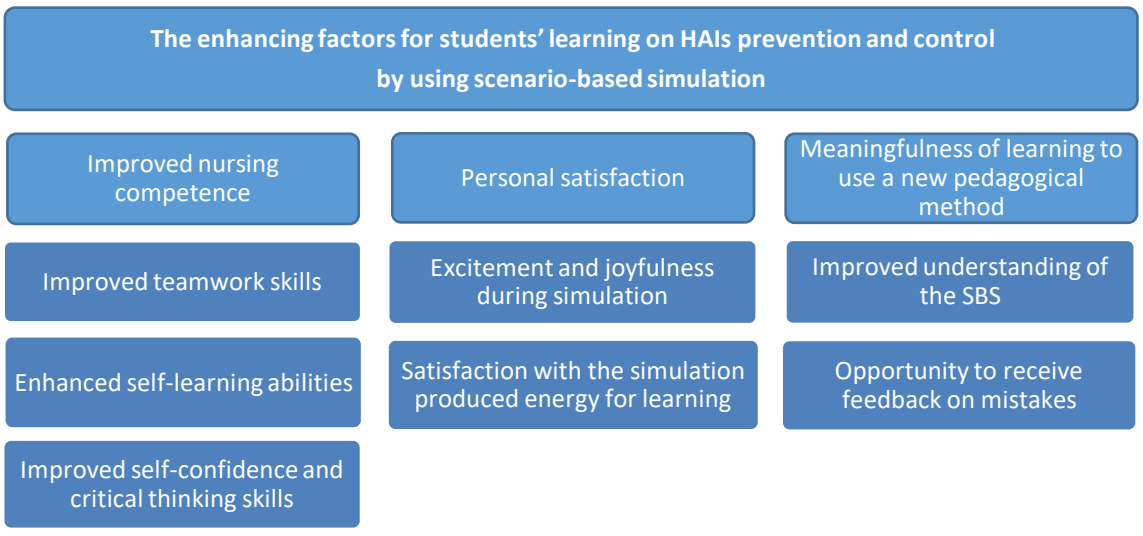
Table 3: Characteristic of study respondents.

Characteristic of Respondents		Number (N)	Percentage (%)
Sex	Male	20	12.50%
	Female	140	87.50%
Age	20	30	18.75%
	21	110	68.75%
	22	20	12.50%
Course	Nursing	160	100%
Year of study	2nd year	90	56.25%
	3rd year	70	43.75%

Source: The research group's own elaboration.

After the subcategories were created, they were integrated into creating categories, followed by the creation of themes. The first theme integrates 3 categories and 7 subcategories. We will present each category with its subcategories as presented in Figure 1.

Figure 1: Enhancing factors for student learning on HAIs-PC by using SBS.



Source: The research group's own elaboration based on the method of Graneheim & Lundman, 2004.

Improved Nursing Competence

This main category illustrated the pedagogical benefits of using a simulation approach as a modern, innovative method that could improve nursing competencies among students. According to the participants, their nursing competencies were improved by their exposure to the interactive learning environments of the SBS. This main

category consisted of three subcategories: *improved teamwork skill*, *enhanced self-learning and improved self-confidence and critical thinking skills.*

Improved Teamwork Skills

Practice during SBS created an interactive learning environment and enabled the students to practice and improve their non-clinical skills, such as effective communication with patients and team members, as well as coordination and teamwork.

"Simulation not only allowed me to practice nursing skills, but also helped me to practice skills related to communication and teamwork" (Vs).

"The simulation scenario helped students to receive information more easily and effectively than traditional teaching methods" (Cs).

Enhanced Self-Learning Abilities

Simulation gave students a new perspective and personal responsibility for their learning. Prior to the simulation, students were given pre-reading materials to read before performing the simulation scenarios. Such a simulation created the cognitive and mental preparation for simulation scenarios and motivated them in the learning process.

"I must be more active in self-learning and better prepared before coming to the simulation scenario" (Vs).

Improved Self-Confidence and Critical Thinking Skills

The nursing students expressed their conviction that the simulation had enhanced their self-confidence and critical thinking skills. This innovative method made students generally more confident and helped them to communicate more interactively and effectively with standardized patients. Moreover, the mental preparation of the students, which led to an improved receptivity of clinical and non-clinical knowledge and skills from their practice, together with their enhanced ability to discuss and reflect on the feedback from the instructors, were attributed to their self-confidence. These positive factors were the basis for the development of the critical thinking skills of the students. Below are excerpts from the interview:

"Simulation would help students to capture information more easily and effectively than the traditional teaching methods" (Cs).

"Pre-reading the materials helped me to be confident because now I know what I will be doing in the simulation" (Vs).

Personal Satisfaction

Personal satisfaction consisted of two subcategories, of which one such subcategory was the excitement and joyfulness of nursing students during simulation and the other was satisfaction with the simulation, which produced energy for learning.

Excitement and Joyfulness During the Simulation

The student experiences with the SBS, which is an innovative learning method, elicited a range of positive feelings. These feelings included excitement, joy and satisfaction, all of which fostered engaged learning behaviors in the nursing students. Some students perceived SBS as an effective learning method before going to their real nursing practice in the clinical setting. Applying the simulation scenario in its relationship to HAI topics created a positive atmosphere that would enable students to learn the various topics of HAIs and to improve their knowledge and skills, as mentioned by the nursing students:

"It is an enjoyable experience, and it was quite interesting to learn and practice the simulation scenario."

"Simulation is very useful; it is an enjoyable experience" (Vs).

Satisfaction with the Simulation Produced Energy for Learning

The students revealed that applying the SBS was a very innovative approach that produced energy for their learning and created an interactive, attractive and friendly learning environment. Additionally, the simulations provided opportunities for them to engage in discussions and to receive feedback from instructors on their performance and practice during the simulation. This feedback process further enhanced the students' ability to apply their theoretical knowledge in practice and to improve their skills for real clinical practice, as mentioned by a nursing student:

"The simulation scenario has helped me in brainstorming, thinking and applying knowledge in clinical practice and connecting with clinical reality more clearly and intuitively" (Cs).

"I must be more active in self-learning and remember to prepare lessons before coming to the simulation" (Vs).

The meaningfulness of learning to use a new pedagogical method

The meaningfulness of learning a new pedagogical method consisted of an improved understanding of the SBS and an opportunity to receive feedback on mistakes during the debriefing phase of simulation, which were the enhanced factors of the learning method.

Improved Understanding of the SBS

SBS was perceived by the students as a new student-centered learning method. Some students suggested that pre-reading materials, visual aids and videos of simulation pedagogy helped them to gain more sufficient knowledge and enhanced their abilities to apply it in clinical settings. Moreover, they had better acceptance of their responsibility as learners, who need to study before and after the simulations. Implementing this new learning approach was deemed necessary to provide students with sufficient experience that could closely mirror real clinical practice.

"The video of the simulation and the information I received from it made me aware of the Personal Protective Equipment (PPE) and the steps of donning and doffing PPE. It helped me to understand the whole procedure and the status of the patients" (Cs).

"Pre-reading the materials helped me to prepare mentally and cognitively for the simulation" (Vs).

Opportunity to Receive Feedback on Mistakes

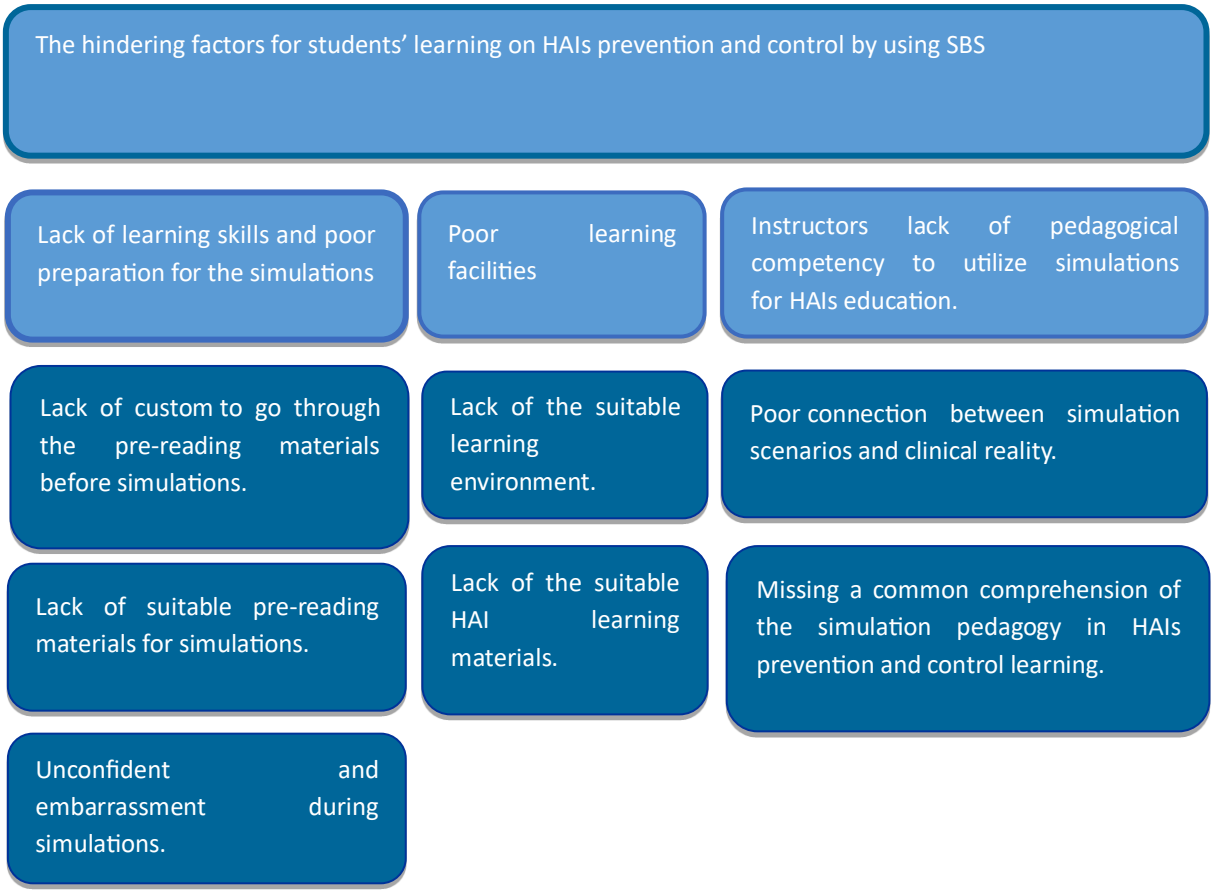
The debriefing process of the SBS was identified by the nursing students as an important method that helped to facilitate their reflection on both the positive and negative feedback that had come from students and instructors. For example, mistakes and errors in the nursing interventions were reflected positively as being important learning moments for all the students. The debriefing process helped students to recall clinical and non-clinical knowledge, who then corrected mistakes in their interactions with patients. The students thus acquired a clearer understanding of the activities scenario.

"Debriefing could help us to reflect on some aspects of our performance, which we did correct where it may have been incorrect. It was useful in helping us to learn HAI prevention." (Cs)

"Debriefing helped students recall knowledge related to infection prevention and control, as well as to update their knowledge." (Vs)

After the subcategories were created, they were integrated into newly created categories, followed by the creation of themes. The second theme integrates 3 categories and 7 subcategories. We will present each category with its subcategories, as presented in figure 2.

Figure 2: Hindering factors affecting student learning on HAIs-PC while using SBS.



Source: The research group's own elaboration based on the method of Graneheim & Lundman, 2004.

Lack of Learning Skills and Poor Preparation for the Simulations

Based on responses received from the nursing students in this study, lack of learning skills and poor preparation for the simulations were considered to be hindering factors. These factors hindered the student-learning process and the acceptance of the simulation learning method. This main category was composed of three subcategories: *unaccustomed to going through a pre-reading of the materials prior to the simulations; lack of suitable pre-reading materials for the simulations; and unconfident and feeling embarrassed during simulations."*

Unaccustomed to Going Through a Pre-Reading of the Materials Prior to the Simulations

The students emphasized that they did not understand how to prepare before attending the simulations. The reason was that they were unaccustomed to going through the pre-reading materials, which in turn led to their poor preparation for the simulations and consequently hindered their learning process during the simulations. Moreover, student-reading attitudes could have been fostered by providing the students with the most relevant materials for them to read prior to attending the simulation performance.

"The handout and video materials presentation were not always purposeful with the simulation scenarios. We were not always confident with the performance." (Cs)

Lack of Suitable Pre-Reading Materials for the Simulations

The students mentioned that no suitable pre-reading materials on HAI prevention and control were available for them, so they were not able to capture the full knowledge and practical skills on HAIs through a simulation-scenario process.

"In order to attend the simulation more effectively, I need to re-read the basic content, such as medical equipment classification, healthcare waste classification and health education for patients on infection prevention and control." (Vs)

"Preparing myself for the simulation and for interactive communication with the patient is needed." (Cs)

Unconfident and Feeling Embarrassed During the Simulations

Students felt that they were not ready yet to practice in the SBSs, because they did not have skills for the new pedagogical method. Most of the time, the students were not familiar with simulations which were based on creativeness, learner centeredness and active participation in learning. Thus, they felt nervous and unconfident. Moreover, students revealed that a lack of confidence and a sense of embarrassment were the key hindering factors that affected their performance and communication with the standardized patient and teammate during their simulation performance, as mentioned by a student:

"I felt nervous, trembled and embarrassed while performing the simulation for the first time." (Vs)

Poor Learning Facilities

Students thought that the SBS required appropriate learning facilities for the implementation. This main category was composed of two subcategories, *i.e., "lack of suitable learning environment" and "lack of suitable HAI learning materials".*

Lack of Suitable Learning Environment

The students stress that lack of suitable simulation facilities, such as adequate space for simulation, together with poor preparation and unavailability of needed materials and equipment, caused the difficulty for the students, making it hard for them to follow and learn during the simulation process. Moreover, lack of orientation and instruction for both simulation performers and observers prior to the simulation led to a poor learning environment and loss of any motivation for the students to learn, thus hindering their ability to learn through the simulation on HAI prevention and control.

"Simulation must have all the necessary materials and equipment, and a suitable and convenient space for the simulation facility." (Cs)

"Being an observer with no clear orientation, I felt confused and worried over what to observe." (Vs)

Lack of Suitable HAI-Learning Materials

Lack of proper HAI-learning materials created difficulties for students in their efforts to learn and acquire clinical and non-technical skills related to HAI prevention and control procedures. Lack of important materials for simulation, such as pre-reading materials, leaflets, posters and video clips also hindered students from being well prepared for the simulation performance and observation.

"Pre-reading material helped me to be confident. I knew what I would be doing in the simulation. So, now I can perform easily." (Vs)

"Placing instruction posters on the wall would be helpful for easy viewing during the simulation." (Vs)

Instructors' Lack of Pedagogical Competency to Utilize Simulations for HAIs Education

This main category was composed of two subcategories; i.e., "poor connection between simulation scenarios and clinical reality" and "lack of any common comprehension of the simulation pedagogy in HAI prevention and control learning".

Poor Connection Between Simulation Scenarios and Clinical Reality

SBS and clinical reality were not well connected and linked with each other for improving the student-centered learning process. Some students suggested that the simulation could be better connected with the current

clinical practices at the hospitals to expose students to real practical experience. Furthermore, students wished to have more SBSs so they may be able to practice decision-making skills authentically.

"When students go into their clinical practice, they are often not ready for decision-making. The simulation should, for that reason, help students to experience clinical situations and to prepare them both psychologically and intellectually for improved capability in infection prevention and control." (Vs)

Lack of Any Common Comprehension of the Simulation Pedagogy in HAI Prevention and Control Learning

The lack of a common comprehension of the simulation pedagogy among actors and instructors hindered the application of the simulation scenarios in practice. The instructors of the simulation were not always skillful, competent and knowledgeable with this innovative teaching method. This deficiency also led to a situation where the students did not get enough instruction prior to the simulation and guidance that took place during the simulation.

"Actors should be skillful, competent and knowledgeable in their demonstration of the simulation." (Vs)

"The actors shall perform the simulation by turning their face to observers so that we can see the performance clearly." (Cs)

4. Discussion

This study was intended to explore the experiences of nursing students in learning HAI prevention and control by the application of the SBS pedagogy in two Vietnamese and two Cambodian universities. The findings showed that the application of SBS increased student satisfaction in learning HAI. Furthermore, this pedagogy improved non-technical skills, such as teamwork, coordination and communication among nursing students and with patients. This approach engaged students to learn from the pre-reading materials for improving their clinical knowledge before going to real clinical practice. Additionally, the simulations provided opportunities for students to engage in discussions and receive feedback from instructors and observers for improving both clinical and non-technical skills. Similarly, Solli et al. (2022) suggested that it is essential to create a trusted learning environment for students with dynamic interaction and collaboration. Such an environment would contribute to fostering a learner-centered perspective. Findings in previous research have shown that students must be psychologically safe to achieve their learning outcomes. Akselbo et al. (2020) identified a different trend in that students often reported they felt stressed and were afraid of making mistakes during simulations whenever others were watching their performance. Paige & Morin (2015) described a similar learning perspective as, "I'm engaging and so should you", in which students experienced the simulation as if it were real, as if it were a wake-up call, so that they did not feel defeated. Kiernan & Olsen (2020) also revealed that deliberate practice and video debriefing were effective modalities in simulation for nursing skills acquisition and self-assessment. Nursing education develops knowledgeable nurses who are capable of providing safe, highly competent, and skilled patient care (Kiernan & Olsen 2020).

The simulation on HAIs was capable of improving the nursing students' learning of non-technical skills and clinical competence as long as it was organized within a convenient environment and with a sufficient resource of skillful instructors. Students perceived that simulation imparted clinical and non-technical skills better than the traditional teaching methods. Kim et al. (2021) similarly explored and found that simulation improved IPC competence through increased knowledge and the compliance of nursing students in developing their practical skills. According to Nasrabadi et al. (2021), the replacement of traditional approaches with innovative educational approaches like SBS had a powerful impact on clinical nursing education. In another study by Jouzi et al. (2015), the students emphasized the key role of instructors as a communicative model for teaching communication skills. Respectful behaviors, realistic expectations, truth-telling, encouragement and helpfulness in clinical issues on the part of the instructors also attributed significantly to the students' acquisition of communication skills.

Sometimes the presence of the teachers would either make the students anxious or disturb their problem-solving processes. Additionally, students reported that they felt stressed and were afraid of making mistakes in situations where others were watching them perform the simulation. Akselbo et al. (2020) also stated that students felt disturbed when the facilitator was too active and interrupted them during the simulation.

The debriefing process during simulation was elaborated upon as an important method of receiving feedback, as Husebo et al. (2015) have stated earlier. It also facilitated reflective feedback on both positive and negative outcomes by students and instructors. In fact, debriefing helped students to recall clinical knowledge and to correct mistakes from their actions and interactions with patients, as well as to learn from the feedback of their instructors and peers. Reflecting on the simulation could better facilitate the students' acquisition of knowledge and clinical skills better than the lecturing method before going into real-world clinical practice. This understanding is consistent with the results of a study conducted by Johnsen et al. (2021), in which it was found that nursing students felt safe, because they were able to reflect on and express what they could do differently after receiving constructive feedback from their instructors.

The results revealed in addition that there were factors that hindered their simulation experiences. Generally, students were perceived as lacking confidence at their first exposure to the SBS because of their anxiousness and unfamiliarity with the new learning method. Moreover, they sometimes felt that simulation facilities and materials were poor. This finding is in line with the findings of Nasrabadi et al. (2021), who found that new educational methods require appropriate context for implementation. The requirements of running new programs include the provision of adequate financial resources and budget allocation in order to create a suitable structure and educational space and to provide standard facilities with convenience, while also providing a sufficient number of faculty members (Nasrabadi et al. 2021). Similarly, Johnsen et al. (2021) found that students were stressed and were out of their comfort zone whenever they had to take an active role in a simulation. This stressed-out condition was perceived as decreasing their learning outcomes.

Poor preparation prior to the simulation, i.e., lack of suitable pre-reading materials and reluctance to read pre-reading materials before simulation, made students feel nervous and unconfident during the simulation. Similarly, Nasrabadi et al. (2021) suggested that while new teaching methods were based on active and student-centered learning, students needed to be well prepared for learning by the new approaches. A hindering factor that had been mentioned in this study was poor learning facilities, which included lack of suitable environment and learning facilities. Because of an inconvenient learning environment, students were not motivated to learn, thus hindering the possibility of learning through the simulation on HAI prevention and control.

Poor connection between simulation scenarios and clinical reality, as well as missing a common comprehension of the simulation pedagogy in HAI prevention and control, also hindered student-centered learning. Some students suggested that simulation could be better connected with real clinical practice and wished to have more SBSs to practice their clinical decision-making skills. Johnsen et al. (2021) revealed differently that some students had indicated that the blended-simulation approach could provide them with various visual and contextual inputs, and it was perceived as advantageous for clinical practice in healthcare.

The implication of this study is that a lack of common comprehension of the simulation pedagogy among students or instructors has hindered the application of simulations in practice. The simulation instructors were not always competent to perform this new method. For instance, debriefing as reflective feedback was difficult for unskilled instructors. These results were in line with Nasrabadi et al. (2021), who found that pedagogical competency of the instructors was vital in applying simulation pedagogy. However, Ericsson (2008, as cited in Kiernan & Olsen, 2020) demonstrated that simulations were used for observing the competence of nursing students in their acquisition of clinical skills. Additionally, it was followed by feedback on the actual performance of students by comparison with the desired performance. This kind of method gave students the opportunity to reflect on their educational goals and to achieve a level of competence.

According to Nasrabadi et al. (2021), nursing instructors and faculty members were key in the role that they played in the movement toward innovative teaching methods. Additionally, it required that they be personally and professionally competent. Such instructors were innovative and believed in the need for change, had an inherent passion for teaching, possessed mental preparedness and were motivated in applying innovative teaching methods.

5. Conclusion

This study provides evidence that SBS is an effective learning method for nursing education because it enhances the quality of nursing education in the Asian health care educations. SBS not only improves the clinical skills, but also the soft skills of nursing students. Moreover, this innovative pedagogy fosters the student-centered learning as well as the preparation of the students for their real-world clinical practice. However, the effective outcomes and impacts of simulation pedagogy can only be achieved in the context where the appropriate learning materials and equipment, facilities and the instructors with pedagogical skills are in place. In practice, this means that organizations implementing simulation pedagogy carefully prepare plans for space, equipment, and teacher resources.

As per findings from this study, it is recommended that SBS could be integrated into nursing curricula by nursing universities in the countries where this study took place. Given the scope of this study, to some extent, the results might have some limitation to generalize for other countries as it was carried out only with Vietnamese and Cambodian students. Therefore, further studies shall be carried out in other Asian countries with similar contexts.

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Revisão por Pares: Dupla revisão anónima por pares.

Nursing students' learning experience with healthcare-associated infection prevention and control (HAI-PC) in Asian countries: an exploratory qualitative study

Experiência de aprendizagem de estudantes de enfermagem na prevenção e controlo de infeções associadas aos cuidados de saúde (PC-IACS) em países asiáticos: um estudo qualitativo exploratório

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Abstract

Background: Healthcare-associated infection prevention and control (HAI-PC) education programs in Asian countries seem limited and require improvement and support.

Objective: This study explored students' learning experiences with HAI-PC education programs in Asian countries (two Vietnamese and two Cambodian universities) to support a pedagogical model in HAI-PC.

Method: A qualitative exploratory study design was employed, and inductive content analysis was conducted. Students were selected to participate in the focus group to investigate their experiences with HAI-PC using five structured questions. There were 48 nursing students in total from four universities, 28 from 2 universities in Cambodia, and 20 from two universities in Vietnam.

Results: The summary results gained from the four universities were synthesized by grouping them into sub-categories and four primary categories, which were students' HAI-PC competence, students' current learning methods in HAI-PC Education, the HAI-PC teaching and learning environment, students' capacity, and entrepreneurial skills in HAI-PC development.

Conclusion: This study revealed evidence to improve nursing education in HAI-PC in Asian countries. The new learning method of the simulation scenario and the model fascinated the students; they were happy and more confident about their future careers in practicing HAI-PC skills in their clinical practicum and hospital practice. The current HAI-PC education faces issues related to education and healthcare systems in Asian countries, highlighting the need for improvement.

Keywords: Asian Countries; Healthcare-Associated Infection Prevention and Control; Nursing Students.

Resumo

Enquadramento: Os programas de educação em prevenção e controlo de infeções associadas aos cuidados de saúde (PC-IAS) em países asiáticos parecem ser limitados e necessitam de melhorias e apoio.

Objetivo: Este estudo explorou as experiências de aprendizagem dos estudantes com programas de educação em PC-IAS em países asiáticos (duas universidades vietnamitas e duas universidades cambojanas) para apoiar um modelo pedagógico em PC-IAS.

Método: Foi utilizado um desenho de estudo exploratório qualitativo, e foi realizada uma análise de conteúdo indutiva. Os estudantes foram selecionados para participar no grupo focal para investigar as suas experiências com PC-IAS usando cinco perguntas estruturadas. No total, participaram 48 estudantes de enfermagem de quatro universidades, sendo 28 de duas universidades no Camboja e 20 de duas universidades no Vietname.

Resultados: Os resultados resumidos das quatro universidades foram sintetizados agrupando-os em subcategorias e quatro categorias principais, que eram competência dos estudantes em PC-IAS, métodos de aprendizagem atuais dos estudantes em Educação em PC-IAS, ambiente de ensino e aprendizagem em PC-IAS, capacidade dos estudantes e habilidades empreendedoras no desenvolvimento de PC-IAS.

Conclusão: Este estudo revelou evidências para melhorar a educação em enfermagem em PC-IAS em países asiáticos. O novo método de aprendizagem do cenário de simulação e o modelo cativaram os estudantes; eles ficaram felizes e mais confiantes em relação às suas futuras carreiras na prática de habilidades em PC-IAS no estágio clínico e na prática hospitalar. A educação atual em PC-IAS enfrenta questões relacionadas aos sistemas de educação e saúde em países asiáticos, destacando a necessidade de melhorias.

Palavras-Chave: Estudantes de Enfermagem; Países Asiáticos; Prevenção e Controlo de Infeções Associadas à Saúde.

Introduction

Healthcare-associated infections (HAIs) are caused by bacteria, fungi, viruses, and other transmission agents and affect people receiving healthcare in any healthcare facility, such as hospitals and long-term care facilities [1]. HAIs are a significant cause of illness and a primary worldwide concern that leads to severe emotional, financial, and medical consequences and can be a cause of death, with about 1 in 31 hospitalized patients experiencing such an adverse event [2], [3]. The infectious disease caused by SARS-CoV-2 and COVID-19 explains the situation of the contagious disease being transmitted rapidly via communication valves in public and hospital settings. It shows the capability of healthcare-associated infection prevention and control (HAI-PC) and the potential gap in controlling the infection chain and response [4].

The most common HAIs are catheter-associated urinary tract infections, central line-associated bloodstream infections, hospital-onset methicillin-resistant staphylococcus aureus bacteremia, surgical site infections, and Ventilator-associated Pneumonia (lung infection) [3]. Sengupta, Barman, and Lo (2019) stated that the World Health Organization, the Centers for Disease Control, and The European Centers for Disease Prevention and Control are struggling to reduce infection rates and elevate HAI-PC to keep patients safe and spread information globally, especially in developing countries. A recent study has reported that the prevalence of HAIs in developing countries was about 10–30% and 5–10% in developed countries [6]. One of the risk factors of HAIs is related to malpractice concerning standard hygiene, which can prevent and control infection by implementing standard hygienic guidelines and punctual performance [7], [8]. Moreover, other factors involved in HAIs have been seen to impact healthcare workers, such as workload, insufficient equipment, and failure to implement sanitary facilities and guidelines [9], [10]. Ling, Apisarnthanarak, and Madriaga (2015) reported that the burden of the pooled incidence of infection happens in the intensive care unit and surrounding areas; however, the mortality rate and the period of hospitalization ranged up to 46% and 5 to 21 days of hospitalization, respectively [11].

Daud-Gallotti et al. (2012) mentioned that excessive nursing workloads were a key indicator of increasing infection in hospital wards [9],[12].

The HAI-PC strengthening will elaborate on the quality of care and reduce the hospitalization rate [13]. The learning process regarding demand and convenience has gradually changed, especially for HAI-PC in developing countries [14]. The WHO has suggested that national HAI-PC curricula and training programs should be integrated and developed with academic staff to establish HAI prevention and control programs effectively [3]. Additionally, Mozafaripour (2021) mentioned that simulation education provides students with an opportunity to perform their clinical skills in real situations [37], and a study by Silva et al. (2012) conducted in the ICU with students using HAI-PC simulation education demonstrated its effectiveness [15]. The WHO has defined core competencies as the knowledge, skills, and attitudes required in professional practice by applying critical thinking, reflection, and analysis in assessment and decision-making in HAI-PC [4].

Nursing students play an essential role in preventing and controlling HAI, which requires them to learn about theoretical and clinical practice to gain knowledge, skills, and attitudes for providing nursing care safely and effectively [16],[17]. Clinical learning environments also play an essential role in acquiring professional abilities and training nursing students [18]. Nursing students are active clinical practitioners in healthcare settings who are at risk of HAIs due to their performance in invasive procedures [16], [19], [20]. The students have poor knowledge of HAI prevention and control, which is related to insufficient HAI content and training [21],[22],[23]. Additionally, nursing students have inadequate knowledge related to microorganism infection and a lack of using gloves while providing nursing care [24]. The issue that mainly affects HAIs is the country's economy, yet there are differences between countries; most developed countries have a low risk of infection and are more knowledgeable about HAIs. Therefore, training and intervention programs related to HAIs are needed for public teaching hospitals, especially in ICU wards [25]. A study by Elison, Verani, and McCarthy (7015) showed the importance of HAI knowledge and skilled practice to prevent the prevalence and safe practice of HIV patients among healthcare workers during the burden of HIV in Southeast Asia, which suggested strengthening the nursing and midwifery professions and HIV service delivery specifically of the HAIs. The continuing education and range of practice that the training like HAI-PC is needed to fulfill the need of the hospital practice [26].

A meeting report on health professional education reforms in transition economy countries in Cambodia 2018 stated that healthcare professional competency is needed to reform the healthcare system [27]. Healthcare workers' competency related to HAIs has the potential to ensure the quality of care and the safety of healthcare workers and the client, especially during invasive therapy. Skilled and well-performed HAI-PC is the basic principle for reducing mortality and morbidity rates, especially in the ICU units [28], [29]. Therefore, cutting the infection chain can indicate a quicker patient recovery rate. Still, there are a few main issues related to HAIs, especially education limitations regarding HAIs and types of learning [28]. WHO (2019) indicated that infection reduction should begin by decreasing the risk of infection through invasive therapy [29]. One of the major problems we have found so far in stopping the chain of infection transmission is handwashing. Therefore, healing care workers' hands is the most common. Among healthcare workers, handwashing is a significant element in stopping infection transmission [30] which should be integrated into the healthcare education curriculum [29].

Considering the prevailing data from previous studies, an internationally Erasmus-funded consortium, the Prevention Infection Project (PrevInf), comprised of higher education institutions (HEIs) from Vietnam, Cambodia, Portugal, and Finland, has undertaken the task of developing a novel guiding model intended to inform and enhance the pedagogical practices of nursing educators across both undergraduate and postgraduate nursing programs in Asia called PrevInf-model. To achieve this objective, we aimed to explore the learning experiences of Asian undergraduate nursing students with HEIs in HAI-PC.

Methodology

Design

A qualitative exploratory study design was used to investigate undergraduate nursing Students' learning experience with HAI prevention and control in Asian countries through focus group discussions using five (5) main structured questions (Table 1).

Population and Sampling

There were 48 nursing students in total from four universities, as indicated, of which 28 were from two universities in Cambodia (12 from International University and 16 from Bolyno Institute) and 20 from the two universities in Vietnam (8 from Haiduong Medical Technical University, and 12 from Nam Dihn University of Nursing) from second- and third-year nursing programs.

Inclusion Criteria

The nursing students who introduced the HAI-PC education program and the simulation scenarios were invited to participate in this study as part of their curricular activities. Before participating in this study, the students participated in theoretical and practical studies on intravenous administration, surgical hand washing, nursing airway management, and medical instrument disinfection.

Data Collection

The data were collected in August 2022 in participating universities, and the focus group interviews were conducted and led by each university with the researchers' instructions. The research and data collection instructions were given by the PrevInf-project to all project members to ensure the unity of the implementation of data collection and analysis. All researchers were PrevInf-project members. First, the researchers invited all volunteering students to participate in this study. Then, a first draft of the PrevInf-model was presented to all of them. All volunteering students signed the consent form at the end of the PrevInf-model presentation. The focus group questions about the students' HAI-PC experiences are presented in Table 1. In addition to employing open-ended questions, focus group facilitators probed the students' responses to delve further into their past learning experiences related to HAI-PC.

Table 1: The focus group interview questionnaire.

No.	Structured Questions
Q.1	What are your experiences concerning your preparation regarding HAI prevention and control?
Q.2	What strategies would you improve in the learning process of HAI prevention and control?
Q.3	How can your entrepreneurial skills be enhanced in HAI education?
Q.4	Based on your experiences, what dimensions should be included in a PrevInf model focusing on developing HAI prevention and control-related education (theoretical and practical) at your HEIs?
Q.5	Are there any aspects of HAI-PC that we did not talk about and that you think are essential for us to know?

Data Analysis

The Graneheim and Lundman (2004) inductive content analysis approach was used for the data analysis. The content analysis methodology, the categories, and the subcategories were a display guide for explaining the nursing students' learning experience with HAI-PC in Asian countries [34]. The answers of all the students were analyzed and classified into sub-, main- and comprehensive categories in a step-by-step process. The same data collection methods were systematically implemented in all four universities. In addition, the selection criteria for the participants in the study were the same. The research groups transcribed the focus group interviews, and the coding books from each university were computed by grouping them into subcategories and categories. The data were reconstructed

from each university's coding books by reducing, conceptualizing, and grouping the content regarding their meaning. The data were reconstructed from each university's coding books regarding their meaning, categories, and themes.

Ethical Considerations

The Ethics Committee of the Health Sciences Research Unit: Nursing of the Nursing School of Coimbra approved the research proposal, number P761-3/2021. Informed consent was obtained to ensure the subjects voluntarily participated in this study. The students who participated in the study were provided with complete information about the study, including the purpose, research methods, and rights when participating in the study. Students were informed of their right to withdraw from the study without consequences.

The focus group interviews were facilitated by the trained lecturers in simulation scenario protocol from the Europe team, and currently working in the PrevInf-project. This ensured that the students felt comfortable in the focus group interviews. The data were collected orally, and the interviewer made notes. All interviews were audio recorded. The students' names were coded using numbers to secure anonymity, and the students were allowed to check the notes and transcripts afterward to ensure that the ideas were accurately presented. The data from the focus group interviews were complemented by students with anonymously written expressions of their learning experiences.

Results

Four major categories emerged from the data: i) students' HAI-PC competence; ii) students' current learning methods in HAI-PC education; iii) the HAI-PC teaching and learning environment; and iv) the students' capacity and entrepreneurial skills in HAI-PC development (Table 2).

Table 2: Overarching theme, main categories, and subcategories.

Nursing Students' Learning Experience with HAI Prevention and Control in Asian Countries	
Categories	**Sub-Categories**
Students' HAI-PC competence	▪ The importance of HAI-PC in the healthcare setting ▪ Students' concerns after completing the HAI-PC lectures
Students' current learning methods in HAI-PC education	▪ Limited learning opportunities and content ▪ Lack of link between theory and practice
HAI-PC teaching and learning environment	▪ Content of HAI-PC in the curriculum ▪ Lecturer, clinical preceptor, and instructor competency ▪ Teaching and learning materials ▪ Active teaching methods
Students' capacity and entrepreneurial skills in HAI-PC development	▪ Self-direction and critical and reflective thinking ▪ Mentoring, guiding and receiving feedback from teachers ▪ Confusion regarding the term "entrepreneurial skill"

Students' HAI-PC Competence

The students' HAI-PC competence category was associated with the current student's competence of the HAI-PC to further experience/develop their skills with HAI-PC. The topic of preventing and controlling health-associated infections was not new to students but the new introduced learning method required clarification. The PrevInf-model was introduced to the participants, as part of the Infection prevention and

control subject. In addition to that, all the students who participated in the study, were at least second-year nursing students and all of them had studied infection prevention and control. The main category was created based on the subcategories integrating the importance of HAI-PC in healthcare settings and the students' concerns after completing the HAI-PC lectures.

The Importance of HAI-PC in Healthcare Settings

The students agreed that HAI-PC knowledge/strategies help healthcare providers and patients prevent infection, and they realized the importance of HAI-PC education in the clinical field, especially at the hospital. The students noted that HAI-PC was connected with the recovery rate and the risk of infection complications, and the students elaborated on the usefulness of clinical practice regarding the risk of infection, the chains of infection, and ways to avoid HAIs and how to integrate Infection Prevention and control knowledge.

> "When I studied theory, I felt that this lecture was not very important because I only learned about how to do it, not talk much about the consequences of healthcare-associated infections (HAIs). However, when I took clinical placements, I realized that the consequences of HAIs are terrible. Then I realized that this lecture is essential" (HMTU).

Students' Concerns After Completing the HAI-PC Lectures

After completing the HAI-PC lectures, the students' concerns resulted in concern regarding their competence level. They thought that their level of knowledge was low, their attitude towards the topic was negative, and they did not receive skills from the study. The students suggested that the required skills should be added to the nursing education program so that they could perform better in the clinical setting.

> "When I was in the first year, I found that I was very afraid of the lectures because the results of the final exam were quite low, and there were a lot of students who failed the lectures" (HMTU).

Students' Current Learning Methods in Hai-Pc Education

The category of the student's current learning methods in HAI-PC education was associated with the current teaching and learning methods. The main category was created based on the subcategories integrating the limited learning opportunities and content and the lack of a link between theory and practice.

Limited Learning Opportunities and Content

Limited learning opportunities and content included a lack of diversity in teaching, less-used reality case studies, and textbooks that need to be updated. The students were expected to be trained in using infection prevention and control equipment at universities, like those used in clinical practice and after graduation for employment. Accessibility to such hospital infection prevention and control equipment makes students more confident using the equipment and not have to re-train after graduating from university.

The theoretical teaching methods lacked diversity, and the textbooks failed to present logical information on HAI-PC. The students wished to learn new protocols in their language during their studies and later in real clinical situations in a given situation. The language used in education should be updated to utilize the national potential, ensuring accurate student and nurse clinical performance evaluation.

> "It would be more beneficial if we had all these materials in Khmer" (IU).

Lack of a Link Between Theory and Practice

The lack of a link between theory and practice included limited feedback, organizing pre-clinical practice, and a connection between theory and case studies. These issues raised the fact that the practice in the practice labs only focused on hand skills but did not integrate them into clinical situations, which was the reason for confusing clinical practice and the simulation scenarios. The students understood self-protection and prevention during clinical practice, both in terms of clinical knowledge and skills related to HAI-PC. Still, they experienced a shortage of HAI-PC materials during their clinical practicum, while the learned theories and clinical procedures were not feasible to apply in actual clinical practice. Therefore, there was an insufficient simulation of clinical practice and

insufficient theoretical class. The students obtained clinical skills and knowledge from their clinical practice, which is not taught in nursing school.

> "The contents of infection prevention control should emphasize and integrate into nursing care activities in the ward. For example, the lectures and pre-clinical practice should emphasize cross-infection prevention during nursing care activities, the suitable distance between patient beds, and issues associated with cleaning, disinfection, and sterilizing respiratory devices" (HMTU).

The students elaborated on their concerns about the HAI-PC learning process strategies based on the nursing care protocol, procedures, and group discussions of the actual case studies. The theoretical and practical lessons on HAI-PC, the student suggested there, should be matched and integrated with evidence-based practice, including the applicable case studies, which were obtained during the clinical practicum. The students stated that HAI-PC should be combined between theory and clinical practice. The theory of HAI-PC should include procedures for preventing infections in the clinical setting. The students noted that the mentors' guide to HAI-PC procedures in the clinical setting is crucial.

> "There are no real case studies, and some are not relevant to real nursing in the hospitals. It would be good to have more clinical cases during the studies to improve the infection prevention skills" (BNI).

HAI-PC Teaching and the Learning Environment

The content category of enhancing teaching and the learning environment was associated with the study program designed for each lecture in the bachelor nursing curriculum. The main category was created based on the subcategories integrating the content of HAIs with the curriculum, lecturer, clinical preceptor, instructor competency, teaching and learning materials, and active teaching methods.

Content of HAI-PC in the Curriculum

The students suggested that a particular lecture on HAI-PC in the nursing curriculum should be added, as long as continuous learning is essential, especially in the new pandemic, such as using PPE and other medical equipment, and comprehensive theory should be taught before practicing in the hospital. The students elaborated on their concerns about the HAI-PC learning process strategies based on the nursing care protocols and procedures and group discussions on the actual simulation cases. The students feel that they need more theories and clinical practice from their foundation year or at a specific time for their clinical practice at the hospital and more practice in the lab.

> "To improve the learning process of nursing students in the prevention and control of hospital-acquired infections, it is first necessary to develop a training program on hospital control. Infection control updates new knowledge and is relevant to infection prevention and control in Vietnam" (NDUM).

The students also stated that continuous training and an update of the medical care procedures and protocols related to HAI-PC are needed, especially in clinical practice. The students also suggested adding separate HAI-PC lectures to the nursing curriculum. More hours should be added to HAI-PC theoretical and clinical practice, and the timing of HAI-PC learning should be before practicing in clinical settings. It should be continuously supplemented during clinical learning by clinical instructors and preceptors.

> "I think a separate infection control lecture should be added to our studies" (IU).

Lecturer, Clinical Preceptor, and Instructor Competency

The students needed support from senior nurses for their practicum in healthcare facilities regarding HAI-PC. The clinical skills must be improved in both lab practices and clinical settings. During lab practice, some performance techniques should be added and modified in response to the current need by the lecturers who are well-equipped with HAI-PC knowledge and technical competence. The students stated that the teachers need to improve their HAI-PC teaching methods and quality and give special consideration to enhancing the content regarding infection and prevention control in each lecture, and skilled lectures should be employed to diversify

the teaching; the contents of HAI theory and procedures should be guided or taught by experienced and knowledgeable teachers. The teaching content is a priority task to be improved.

> "Teachers frequently used PowerPoint presentations to teach students. There was no group discussion or other active activities in class" (HMTU).

> "Regularly educate and train, inspect, supervise, and evaluate nursing students' hospital infection prevention and control procedures. Adding more information exchange channels between learners and lecturers to help students interact with lecturers from which lecturers will answer, guide and evaluate their mastery of infection prevention and control hospital" (NDUN).

Teaching and Learning Materials

Video clips on HAI-PC education should be proposed and applied in theory classes. Lectures should be translated and explained in the student's own language, and poster pictures of HAI-PC should be used. The students suggest having an available learning package to educate patients and families about HAI-PC. Insufficient equipment for teaching HAI-PC utilities and a proper learning environment and materials are needed in student clinical practicums at public hospitals. The students stated that educational posters should be applied in areas of infection control and should be involved in healthcare facilities and classrooms. In the posters, the written expressions should be explicit to make communicating information about HAI-PC more informative.

> "I suggest video clips, but my English language is limited, so I suggest Khmer language videos. The posters and video regarding HAI-PC should be used to support the learning process" (BNI).

Active Teaching Methods

Theory and the practice lab should be aligned, and the practice lab should be specific to infection prevention and control with proper teaching and learning methods and environment. The group discussion method should be applied in theory class.

> Therefore, I think the teachers should apply other methods such as group discussion to improve students' learning" (HMTU).

Simulation pedagogy is an active teaching and learning method and should be considered and clearly explained to the student. The students suggested elaborating with more details and separating the general HAI-PC delivery into specific simulation cases such as ER, ICU, PICU, OR, pneumonia units, and other places through simulation scenarios. The students noticed that the simulation pedagogy is a new learning method that is helpful for them to understand more about procedures, and they have learned more about infection prevention and control.

> "I like the way that all students and teacher participated in the simulation, which is a new learning method; I found that all of them are very well organized, they communicate with each other, helping, they have introduced the procedure, especially equipment, all well set, It was a new technique of simulation learning that encouraged the students took more active and attention on simulation performance" (IU).

The students felt that a new approach to nursing education kept all involved students concentrated and active, and they were encouraged to express their ideas and feedback. They thought that the simulations improved their competencies in HAI-PC and were excited and happy to be a part of them. Students expressed a feeling of joy and willingly participated in the simulation for the first time to hear and participate in the project. Many ideas and comments emerged as questions about this new learning method.

> "I am so happy to join the simulation; though I do not know much about this, I find that this is good, and given chances to get all the information in the simulation, I think this will be very helpful to us in our clinical practice, especially it easy to understand and we can see every aspect and steps from the preparation to the end" (IU).

Students' Capacity and Entrepreneurial Skills in HAI-PC Development

The students' capacity and entrepreneurial skills in HAI-PC development were associated with their interaction and problem-solving skills in the clinical setting. The main category was created and categorized into subcategories such as integrating self-direction, critical and reflective thinking, mentoring, guiding, and giving feedback from teachers, as well as confusion regarding the term "entrepreneurial skill".

Self-Direction and Critical and Reflective Thinking

Self-direction and critical and reflective thinking reflected students' interaction motor skills for problem-solving in the clinical setting and interpersonal skills in obtaining the skill and knowledge. Competency standards regarding infection control practices should include hospital infection prevention and a control training model. When there is a set of criteria for HAI-PC practice standards, it will help students self-assess their capacity and improve their skills.

All students mentioned that a suitable and effective study plan was needed to study the hospital infection prevention and control programs, and the students indicated that learning goals and methods must be set to achieve the goals before beginning the lectures. In the learning process, the students wanted to self-assess to determine whether their results were consistent with the objectives. The students preferred communication, teamwork, and problem-solving skills to enhance their critical thinking. Nursing students also suggested that the PrevInf model be introduced in healthcare facilities. In contrast, the Vietnamese nursing students mentioned that the concept may be appropriate for the Vietnamese culture of learning and teaching.

> "The pre-clinical practice helped us a lot before the clinical placement and enhanced our confidence (HMTU).
>
> "To improve our skills in HAI-PC, we need a good study plan which helps us to learn HAI-PC" (IU).
>
> "We need more knowledge and skills of communication, teamwork, and problem-solving" (NDUM).
>
> "The HAI-PC content should also be introduced to the hospital health care workers" (BNI).

Mentoring, Guiding, and Receiving Feedback from Teachers

Mentoring, guiding, and receiving feedback from teachers were the most important for students to evaluate their competence in their actual performance of HAI-PC. The detailed and brief discussions on learning and teaching methods were crucial regarding the competence of HAI-PC and should be applied in theory classes and practical labs. The students need feedback on what was performed correctly or what needed improvement after every practice session. This will motivate the students to learn.

> "I think that before and after the lab, there should be a session with the teacher to go through the learned tasks and how to improve" (IU).
>
> "The feedback is important for us, and the more feedback we get, the more it motivates us to learn more about HAI-PC" (BNI).

There Is Confusion About the Term "Entrepreneurial Skills."

Entrepreneurial skills seem to be a new concept and paradigm for young Asian nursing students. The students expressed their misunderstanding of entrepreneurial skills in nursing, which are usually used in business or management.

> "It seems like we are trying to make a new business skill in nursing care and HAI-PC" (IU).

Discussion

This study explored students' experiences with HAI-PC education programs in two Vietnamese and two Cambodian universities to understand the current HAI-PC education status and the need for curriculum enhancement using the PrevInf-model. The results of this study revealed the implications and actions needed to be taken in curriculum development related to HAI-PC education.

Students' HAI-PC competence was linked to their ability to develop skills and gain experience with HAI-PC during their education. Like a study by Alshammari et al. (2019), this study also focused on nursing students' possibilities to adhere to standard precautions during their clinical practice. HAI-PC knowledge was highlighted as crucial in preparing students to prevent infections during clinical practice, ensuring patient safety, and reducing HAIs [31]. The study by Abdelaziz et al. (2019) mentioned the necessity of HAI-PC education in the nursing curriculum and the professional nursing career. Still, the result of the study identified that almost 50% of the students had poor clinical practice skills, and more than 50% had poor knowledge of HAI-PC, along with non-relevant and specific training in the curriculum [32].

This study's teaching methods were associated with students' ability to gain knowledge and retain their motivation in HAI-PC learning. The limitations have been based on teaching methods in Asian countries previously found on the slow progress of the healthcare system development and advancement. Especially in Cambodia and Vietnam, prospective HAI-PC education and practice must be improved in the overall healthcare system [35]. It is crucial for teachers to be well-prepared and to follow updated HAI-PC regulations when teaching students who are practicing their clinical skills. Accepting the reality of the actual work setting and taking necessary actions to meet the learning outcomes can help develop the capacity for preventing and controlling HAIs.

Simulation pedagogy can potentially improve nursing students' HAI-PC competence [36]. In this study, there was a positive connection between theory and clinical practice if the primary objective of the simulations was to provide students with an opportunity to apply their knowledge to practical situations. However, the students complained that the teaching at the university needed to be better integrated with current hospital practice. The PrevInf-model has the potential to foster the development of a comprehensive HAI-PC education model for nursing curriculums in higher education institutes across Asian countries. A complete IPC model would enhance the development of common principles for educational institutions and healthcare organizations.

It is necessary to develop simulation pedagogy and educational seminars on HAI-PC with the participation of students and staff members from universities and healthcare organizations. Students can stay updated with new knowledge by participating in educational sessions and forums and taking the initiative to discover academic documents, particularly in simulation scenarios. These scenarios are crucial in demonstrating the effectiveness of simulation, case-based simulation, and evidence-based practice to students.

Universities have a crucial role in curriculum development and endorsement [4], and the curriculum should include more HAI-PC content, covering both theory and clinical practice from the first academic year onwards. Lecturer and clinical preceptor competency, instructor proficiency, teaching and learning materials quality, and active teaching methods emerged as the core values for the HAI-PC teaching and learning environment in this study. Limitations in organizing pre-clinical practice to meet the contents of HAI-PC education were present in all Cambodian and Vietnamese universities. Therefore, due to their having no pre-clinical practice, some contents related to HAI-PC, such as clinical waste management and laundry management, were taught by observation in the hospital.

Developing students' capacity and entrepreneurial skills was associated with student interaction, problem-solving, and interpersonal skills in obtaining HAI-PC competence. Students' ability to adapt, be flexible and self-directive, and possess critical and reflective thinking skills are crucial in HAI-PC competence. For example, the unavailability of hospital equipment can prevent them from applying what they have learned in the classroom. The term "entrepreneurial skills" includes creative thinking, time management, networking, and communication

[33], and can be confusing for Asian nursing students as it is a new concept for them. Therefore, it is essential to clarify entrepreneurial skills in HAI-PC education in order to enhance students' understanding of the term and required nursing skills. In this study, entrepreneurship in nursing refers to nurses working autonomously and professionally.

Limitations

The limitations of this study relate to HAI-PC education in the Asian universities' curricula and the research methodology. This study introduced the new HAI-PC pedagogical content, methods, and the PrevInf-model to Asian universities and nursing students. The topic was introduced to the participants during the first or second academic year, who may have needed more clarification of the HAI-PC topic [38]. Additionally, the data collection and management may have limitations, as there are no universal rules for analyzing large quantities of qualitative data from different universities. Even though common instructions were drawn up for the analysis, there may have been some differences between the partners when doing the analysis. The analysis process requires creativity and solid inductive skills, mainly since the data collection was conducted separately by four universities (two from Cambodia and two from Vietnam), which could have interfered with the equivalence of the distribution of the research tools and instructions [39].

Conclusion and Recommendations

This study provided evidence to enhance nursing education programs in HAI-PC in Asian countries. The main results elaborated on the difficulty of practicing HAI-PC in clinical practice due to the nursing curricula' lack of proper infection control content. HAI-PC education should be implemented in the nursing curricula and clinical placements. The teachers must be competent of teaching infection prevention and control, as teaching requires theoretical, clinical, and pedagogical skills. Hence, the teachers need to reflect on their own practice, pursue professional development, experience with the new methods, evaluate the impact and keep learning and growing.

The results of this study lead to the recommendation of the following methods for nursing education regarding HAI-PC. Various teaching methods should be implemented, as this motivates students to learn HAI-PC skills. Further, applying scenario-based simulation in the nursing curricula so that students can practice infection prevention control will improve students' competence with HAI-PC and create excitement about new learning methods. Also, updated textbooks and current IPC guidelines in teaching will enhance the student's knowledge of HAI-PC.

Clinical practice is the most crucial element for learning practical nursing skills, and therefore, well-planned pre-clinical practices at universities should be arranged. HAI-PC methods, procedures, and equipment should be similar in both learning environments to foster learning. Adding more equipment for teaching about hospital infection prevention and control aligns with reality, and providing feedback for students in pre-clinical practice should be a regular part of the pedagogical method.

Further, dialogue sessions should be organized with students to listen to their thoughts and aspirations about hospital infection control training. This may provide a variety of channels to receive feedback from learners to inform institutions on how to solve existing problems promptly.

As a recommendation, HAI-PC education could be enhanced by implementing the PrevInf-model in Asian universities to foster the thoroughness and effectiveness of healthcare education. The current model comprises four main layers: the learner's core competency areas, core behaviors, an active learning environment, and quality assurance of the teaching and learning process.

Declaration

Disclaimer for Scientific Papers

The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use that may be made of the information contained therein.

Ethical Considerations

This study was approved by the Ethics Committee of the Health Sciences Research Unit: Nursing of the Nursing School of Coimbra (P761-3/2021).

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Revisão por Pares: Dupla revisão anónima por pares.

Innovative strategies of an education community in response to a crisis situation

Estratégias inovadoras de uma comunidade educativa em resposta a uma situação de crise

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Abstract

Background: Unexpected situations can drastically change the daily life of a university. With the health crisis in 2020, it is important to understand what measures can be taken in the future to minimize the impact on the education of health students.

Aims: To explore, analyze, and describe the adaptive strategies of a university health community in response to the challenges posed by the COVID-19 pandemic.

Method: An exploratory, descriptive study using a qualitative approach was conducted.

Results: 'Institutional management strategies' had a positive impact, although in different ways. For students, the most important strategies were mitigating the impact of restrictions on face-to-face teaching and access to clinical placements in a hospital, rapidly implementing safety measures, and ensuring academic continuity

despite the disruption caused by the public health crisis. Pedagogical strategies, including the reorganization of teaching programs. Coping mechanisms and the use of digital tools emerged as essential components in overcoming the challenges faced by students and staff. For staff groups, adaptability, resilience, and working strategies focused on the transition to remote working were well received.

Conclusions: This study contributes to the understanding of the management strategies adopted by educational institutions during the COVID-19 pandemic and their impact on the educational community. The institution prioritized academic progress and community safety. Proactive management, coupled with the adoption of strategies tailored to the needs of the community, played a crucial role in maintaining academic continuity and promoting resilience in the face of the challenges posed by the public health crisis.

Keywords: Coping Strategies; COVID-19; Management Strategies; Pedagogical Strategies; Work Strategies.

Resumo

Enquadramento: Situações inesperadas podem alterar drasticamente o quotidiano de uma universidade. Com a crise pandémica em 2020, é importante perceber que medidas podem ser tomadas no futuro para minimizar o impacto na formação dos estudantes da área da saúde.

Objetivo: Explorar, analisar e descrever as estratégias adaptativas de uma comunidade de saúde do ensino superior em resposta aos desafios colocados pela pandemia COVID-19.

Método: Realizou-se um estudo exploratório, descritivo, com uma abordagem qualitativa.

Resultados: As "estratégias de gestão da instituição" tiveram um impacto positivo, embora de diferentes formas. Para os estudantes, as principais estratégias foram: a atenuação do impacto das restrições ao ensino presencial e ao acesso à formação clínica num hospital, a rápida implementação de medidas de segurança e a garantia de continuidade académica apesar da perturbação causada pela crise de saúde pública. Estratégias pedagógicas, incluindo a reorganização dos programas de ensino. Os mecanismos de adaptação e a utilização de ferramentas digitais surgiram como componentes essenciais para ultrapassar os desafios enfrentados pelos estudantes e pelo pessoal. Para os grupos de pessoal, a adaptabilidade, a resiliência e as estratégias de trabalho centradas na transição para o trabalho remoto foram bem recebidas.

Conclusão: este estudo contribui para a compreensão das políticas de gestão adoptadas pelas instituições de ensino durante a pandemia da COVID-19 e o seu impacto na comunidade educativa. A instituição deu prioridade ao progresso académico e à segurança da comunidade. A gestão proativa, aliada à adoção de estratégias adaptadas às necessidades da comunidade, desempenhou um papel crucial na manutenção da continuidade académica e na promoção da resiliência face aos desafios colocados pela crise de saúde pública.

Palavras-Chave: COVID-19; Estratégias de *Coping*; Estratégias de Gestão; Estratégias de Trabalho; Estratégias Pedagógicas.

1. Introduction

The 2020 public health crisis has been one of the most significant events in higher education worldwide in recent years. Its influence and impact on education are still difficult to assess. Students, teachers, and university staff have had to change their study and work routines, but little has been published about these changes (Ferrer et al., 2023).

As reported by the United Nations Educational, Scientific and Cultural Organisation (UNESCO, 2021), the global pandemic crisis led to the closure of schools in over 190 countries, leaving a staggering 99.9% of students unable to attend their educational institutions in person. The physical closure of educational institutions proved to be an effective way of minimizing the spread of the virus. However, it created challenges for both students and teachers (Owusu-Fordjour et al., 2020).

Higher education institutions were no exception, and their impact has been published throughout the academic world (Aristovnik et al., 2020). Universities and higher education institutions have made extensive use of online learning and teaching, slowly moving towards the implementation of hybrid models that combine traditional face-to-face interactions with online educational methods. This approach, commonly known as blended learning, was not yet an everyday reality in all educational contexts, as it was still being experimented with in higher education (Dziuban et al., 2018).

However, when we refer to specialized higher education institutions focusing on health-related fields such as nursing, medicine, physiotherapy, psychology, and others, it is crucial to recognize the indispensable role of practical experience in the successful completion of degree programs.

While there is a body of literature on how health education has adapted to health crises, there is still a need to explore the factors that enable or hinder these adaptations (Consorti et al., 2021). In addition, it is important to explore what specific adaptations have been used in different contexts and cultural settings.

2. Methodology

Study Design

An exploratory, descriptive study with a qualitative approach was conducted. The study was reported according to the COnsolidated criteria for REporting Qualitative research (COREQ) principles for qualitative research (Tong et al., 2007).

Aim

To explore, analyze, and describe the adaptive strategies of the higher education health community in response to the challenges posed by the COVID-19 pandemic.

Participant Selection

This study used a purposive sample selected from the academic community of a nursing school, ensuring the participation of different professional groups (teachers, students, technical, administrative, and management staff) with different positions and levels of experience. The selection of participants was determined in a meeting with the research team, based on the professional category and profile of the participant. After pre-selection, participants were contacted by a member of the research team by phone or in person and received an explanatory email with information about the study. The focus groups (FG) were scheduled at short notice based on the preferences previously expressed by the participants.

Forty-nine members of the academic community were contacted, of whom 12 did not participate for various reasons. FG sessions included six to eight participants and were conducted until data saturation was reached. FG were conducted with different groups, including teachers, technical, administrative, and managerial staff, and undergraduate and postgraduate students.

Data Collection

Data were collected using the FG technique, which allows data to be collected by sharing experiences/perceptions on a given topic and encouraging discussion among participants (Backes et al., 2011).

In the development of the FG, two preparatory meetings were held to establish the FG scripts and to standardize the strategies for the different FG to be conducted. The FG was conducted in two ways: face-to-face and via the Zoom platform. The FG involving students was conducted in the Zoom platform, and the remaining FG was conducted in person, in a meeting room within the working institution. The average duration of the FG sessions was 90 minutes. At the beginning of the FG, the researchers responsible for conducting the FG introduced the project and its objectives and gave instructions on how the session would proceed.

The six FG were facilitated by a nurse with a PhD and expertise in qualitative research, particularly FG (with published studies in this area). Recognized by the participants for her teaching and research efforts, she expressed her motivation for conducting the study. She explicitly stated that she felt the work was essential and

emphasized the need to document the community's experiences during the COVID-19 pandemic. The FG was conducted from May to June of 2022, encouraging the active participation of all members, with the second team member taking notes, particularly on non-verbal communication, as the FG was audio only.

The face-to-face FG was audio recorded, while the zoom-based FG was audio and video recorded, with participants given the option to preserve their image. At the start of each FG session, participants were asked to complete a short questionnaire to provide socio-demographic information.

Each FG consisted of six to eight participants and was conducted until data saturation was reached (Green & Thorogood, 2018). An interview script was used, with guiding questions adapted to the specific characteristics of each FG. Two FG were conducted with teachers (one group with teachers in leadership positions, and another group with the support of the professor). In addition, two FG were conducted with technical, administrative, and managerial staff (technicians and service coordinators) and two with undergraduate and postgraduate students.

Data Analysis

The FG was recorded with the consent of the participants. The recordings were destroyed three months after data analysis. The content of the FG was transcribed, and data analysis was carried out using Bardin's (2020) content analysis technique and MAXQDA qualitative analysis support software. To maintain objectivity in the data analysis, three researchers with experience in qualitative research, albeit with a more distant relationship to the participants, scrutinized the data. To ensure an impartial analysis based solely on the inherent elements of the data and free from personal bias, any assumptions, judgments, or opinions that might influence the interpretation of the data were strictly excluded. The rest of the research team consisted of individuals with training and experience in community health.

Ethics

This study adhered to the tenets of the Declaration of Helsinki (WMA — The World Medical Association-Declaration of Helsinki, 2013). This project received approval by the Health Sciences Research Unit: Nursing of Nursing School of Coimbra Ethics Committee (Opinion No. P805-09-2021). All the participants were informed of the aim of the project, the benefits and risks, and signed an informed consent form. Throughout all phases of the study, it maintained confidentiality and anonymity.

3. Results

The six FG took place with 37 members of the educational community, 73% female (n = 27) and 27% male (n = 10), with an average age of 50.1 years. The FG was composed of teachers in management positions (TMgmtP) (n = 7), adjunct teachers (AT) (n=7), service coordinators (SCoord) (n=7), technicians (Tech) (n=6), undergraduate students (UGS) (n=5), and postgraduate students (PGS) (n=5).

During the FG, all members agreed that the institution had adopted some institutional policies that had a direct or indirect impact on the educational community. The content analysis carried out is described in Table 1.

Table 1: Outcomes of content analysis.

Category	Sub-categories	Sub-subcategories
MANAGEMENT POLICIES USED BY THE INSTITUTION	Management Strategies	Classes and internships Face-to-face/online division of labor Second Closure and Definitive Return
	Pedagogical Strategies	
	Coping Strategies	
	Work Strategies	

Source: Developed by the author.

Management Policies Used by the Institution/Management Strategies

During the FG, pandemic management strategies became critical for these institutions. They had to quickly navigate remote teaching and working arrangements, ensuring a seamless transition while protecting the health of individuals. This included implementing health and safety measures to facilitate student completion, establishing protocols, promoting transparent communication, financial planning, and providing mental health support for staff.

Classes and Internships

Initial trust, class reorganization, and internships were the first challenges reported by participants. The management of this educational community focused its efforts on group unity and cohesion. The country was going through a period of great instability and decisions had to be made. Thus, in the first moment, when the closure of face-to-face teaching activities was decided, the focus of the Senior management teachers was to "(…) ensure the safety of the academic community with the least detriment to the academic development of the students (…), (TMgmtP1)". This group did not agree with some extreme measures, as "(…) closing the institution or completely suspending activities for 6 months was not on the table (TMgmtP1)". This group felt that such a decision could lead to "(…) disaggregation and disengagement of the academic community" (TMgmtP1). The focus was on leaving no one behind while ensuring safety conditions.

Another objective was the smallest impact on academic development "was that, at the same time, there would be no detriment to the student's academic development (TMgmtP1)". The first thing that was important to decide on was the online classes. In about one week, rapid training was provided to teachers to start remote teaching activities, none of which would have been possible without the rapid response of the informatics team (IT): "In one week we gave the teachers a course of one or two hours and they trained themselves (TMgmtP6)".

The group of adjunct teachers and service coordinators felt that "the IT service was very quick to deal with the whole situation (SCoord2)".

Both undergraduate and postgraduate and masters students report that it was "(…) positive of the Zoom strategy, that I think in record time they managed to transfer all the lessons to Zoom (…) (UGS1)", "(…) I don't think the school could have done it any other way (PGS1)".

After this challenge of getting the lessons online, the institutional managers were faced with a new and challenging problem, at risk were the 340 final year students who were due to graduate in five time months and whose final destination would be postponed "(…) They were final year students and we managed to get all the students to complete their initial training and be new graduates and enter the labor market and professional practice, it never occurred to us to close the school (TMgmtP2)". The safety conditions necessary for the students to progress on their journey were considered and the teachers (AT1) were asked, "(…) if they studied in detail in each of the circumstances what could be done with the safety levels (TMgmtP1)". to ensure that the journey of these students and others was not jeopardized, safety strategies were developed that had an impact on the management of the budget, namely: contracting equipment (personal protective equipment [PPE]), reinforcing health and epidemiological control with the health team, purchasing PPE, purchasing diagnostic tests, carrying out tests, purchasing equipment for classrooms.

The group of students saw the decisions as an opportunity to reduce the impact of the pandemic on their academic development and to complete their studies on time. As soon as the security conditions were defined, the students had the chance to see the practical classes restored, which they considered very important: "(…) it will always be a strategy adopted to be praised because it has allowed us to get where we are and continue our academic journey in the best possible way (…) (UGS3)". Postgraduate and master's students reported that decisions depended on other management bodies and that decisions were made as best as possible given the situation "(…) I don't think the school could have done it any differently (PGS1)". These working students refer to the importance of the lessons via Zoom "(…) because the cases were increasing exponentially and we don't want

to get sick, we have to work, and we have to continue studying. There was an openness to do the evaluation afterward (…) (PGS1)".

Although it was not a question of stopping activities altogether, decisions had to be coordinated with the guardianship, the General Directorates of Health and Higher Education, and sometimes it was necessary to mobilize steps with these bodies, namely in the priority vaccination process for nursing students "There have been times when the situation of our students was not being properly taken into account. (TMgmtP1)".

Face-to-Face/Online Division of Work

Another management challenge with an impact on the academic community was the decision not to close the school and how groups would be split between face-to-face and remote work.

The school decided not to close, from a management point of view it was challenging, it was important to maintain transparency and communication with the academic community and to make complex decisions, namely the first closure brought moments of anxiety until some decisions were made "(…)deciding who stays, who goes to telework, then trying to reconcile people who telework with their family life, and therefore at the time we have people who have young children who need all this support. (TMgmtP5)". A complex process was put in place to ensure that those who stayed to work in person had the safety conditions they needed. In this way, the health team rethought the working spaces, how many people were in each place, how they could organize themselves to be safe "(…)when they were given this opening to be able to telework for them, despite everything, it was a relaxation, a relief (SCoord4)". Some of the services of the school still worked with paper, it was not possible to just send everyone home to work remotely "(…) There were always people in the office who would get some for us, some documents because we still work a lot with paper (…) (SCoord1)". The IT was seen by the other elements as very positive to help quickly cope with the need for online teaching, but the non-teaching staff must have training in the second phase "We had to train the teachers, the non-teaching staff to manage their own. (SCoord6)".

Second Lockdown and Definitive Return

The implementation of the second closure and the subsequent definitive return represent strategic actions taken by the institution to address the inefficiencies of certain reorganization strategies.

The well-being of the community in terms of physical and mental health was a major concern: "The current goal, which is to rebuild cohesion, to rebuild the connection to the academic community (TMgmtP1)". During the months of the pandemic, health awareness was raised, and tests were carried out, "which was also a new thing for us to do, to learn how to do it, to do it properly (TMgmtP7)".

The process was kept transparent by providing information through an epidemiological bulletin on the school website, which was updated weekly, differentiated communication that we were not used to between people and between teachers "managing effective communication between these groups so that it is fruitful (TMgmtP5)".

The service coordinators felt that "(…) in the second wave this did not happen because they already knew, and people were already calmer (SCoord4)", "Looking back, I don't think we could have done it any other way (SCoord8)".

The technical group, on the other hand, refers to the issue of teleworking and the fact that they believe "(…) that the format today should be hybrid the format is inevitably going to be hybrid (Tech3)".

Pedagogical Strategies

From a management point of view, the pandemic brought with it the emerging need to plan clinical training in the optional area in such a way that it would be possible for final-year students to complete their courses.

The pedagogical changes involved the whole school in their implementation and in thinking about the variety of solutions offered so that students would not be at a disadvantage in completing their degree "A group was formed for the readjustment, the re-planning of a curricular unit of clinical teaching in the optional area (…). (TMgmtP2)"; "(…) the design of a transversal curricular unit that would allow the necessary ECTS to be adapted to the end of the course (TMgmtP3)". All the planning of these activities led to the final-year students finishing their course and the students saw this as a positive thing: "What was positive was that they were able to adapt in this way (UGS5)".

Another challenge for the institution was to get the hospitals to open to receive students in clinical training: "And then our big concern was, when will the health institutions give us the opening to resume? This meant that we had to go into the field immediately to find clinical teaching placements that we could resume within this academic year, to move something forward that would give us time for the next academic year, because everything was delayed. (TMgmtP3)", some students saw this as a positive thing to finish the degree.

Teachers suggest that the main concern in teaching via Zoom is how to motivate students. So, sharing experiences and strategies for motivating the students with colleagues was also seen as beneficial by teachers. The main challenge was to adapt some of the teaching methods used in the classroom to Zoom, and although this seemed impossible in the beginning, it led to very positive experiences because there was a concern about sharing what teachers were doing: "(…) We would always share what we were doing (AT2)". The perception of the students was that zooming was a good strategy and by this time the teachers were providing more material that was useful for learning "Everyone had to make it available on the slide, but then to go deeper, they could not be slides, for example, like developed summaries, (…) try to make it available by chapters. I had a lot of teachers who made it available in chapters (…) (UGS4)".

The group of postgraduate and master's students reported that "the course coordinator was also tireless with us, he never left anyone behind (PGS2)".

When the students returned to face-to-face classes, it was decided for safety reasons that the teacher would have one class with the students separated into two rooms: "(…) I wasn't paying attention and I don't think it was working very well (TMgmtP4)".

All these challenges bring positive things to the pedagogy at the end of the pandemic: "If it was not 100% exciting at the time, today, after all these years, many remember it and draw experiences from it (…) (TMgmtP3)".

Coping Strategies

Participants used different coping strategies during the COVID-19 pandemic. All groups felt that people were flexible in their response to a crisis.

The management group focused more on the decisions that had to be made and on the fact that "the greater flexibility that people have to about the processes. This adaptation, which was that they gained more skills, we gained more skills in these different processes, the solutions that had to be created (TMgmtP5)". So, it was remarkable in these meetings that this group left the emotions behind to deal with the difficult decisions that had to be made.

One of the main difficulties was the distinction between personal and professional life, and to get through this period more easily, some strategies were adopted by members of the academic community in their private lives. Among the coping strategies adopted by the groups, we highlight sports, digital tools that allow them to keep in touch even at a distance, hiking, the development of culinary skills, and time spent with family and pets "I would also like to add the sport part, I also have to keep up all the time for health reasons and I also cycle and run. I also run, and I think that part was fundamental to relieving stress. And that part of the sport helped a lot. (Tech1)"; but for those who lived in the city it was easier to use the online strategies "Facetime, to be with my family and talk to my niece… And spend, wait…" (Tech3).

The undergraduates did not have academic parties but tried to bridge the physical distance by creating a Zoom group, reading, and series "At that time, the third year, it was also time to have godchildren, time to go with the godchildren to the academic parties and we did it… we also made a Zoom group to go to the serenade all together, with the whole, all or with all the colleagues, it was different but we managed to adapt to the circumstances(UGS1)".

Work Strategies

At the level of strategies, the possibility of holding remote meetings was mentioned by the group of managers as an advantage "the ability to hold remote meetings (TMgmtP56)".

The service coordinators have adopted briefings and group messages through the digital tools made available by the school (zoom, skype, digital phone), as the main difficulty was pointed out in the transformation of some services that used exclusively paper: "It went well (…) we had a briefing so we knew what was there, (…) had skype but everyone had messenger, so we made the group that still works today (SCoord1)".

4. Discussion

WHO (2020) recommends that the decision to close or reopen a workplace or suspend activities should be based on risk assessment, the capacity of protective measures, the level of compliance, and what the national authorities would recommend. Similar to the current study, the Senior Management Group was concerned not to close the school and to do everything in its power to keep pupils and staff safe and healthy during this period, and to do so quickly. The idea of closing the school was never on the table, the group felt that to do so would lead to disaggregation and disengagement of the academic community. Consorti et al. (2021), in their study to explore the strengths, weaknesses, opportunities, and threats of how Italian medical schools adapted their curricula to the COVID-19 pandemic, concluded that one of their strengths was the rapid response and spirit of cooperation among medical schools.

The School of Nursing in the current study was dependent on decisions made by the government and the willingness of the clinical institutions to continue the clinical aspect of the various degrees. Decisions were sometimes changed at short notice, leaving the academic community uncertain about their future. Another challenge was the work placements required by the curriculum; the school had to work directly with previous and new clinical sites to ensure that their students could achieve the required hours. The same ideas were highlighted by Consorti et al. (2021), who identified the dependence of the medical school on access to clinical facilities as a weakness, due to the complete cessation of placements and the long hours that would be worked by doctor-educators, but the clear government regulations were seen as an opportunity.

Shehata et al. (2020) report criticism from study participants about the lack of contingency plans and the delay in government decisions about assessment. Some teachers felt that schools were unprepared for the change, leading to chaos and misinformation. Samarasekera et al. (2020) in their study shared the systematic actions taken during the pandemic in a medical school and concluded that the right approach to ensure academic continuity and quality was a process with coordinated leadership and management. The safety of all stakeholders was a priority, as was the transparent and efficient dissemination of information and the attempt to maintain the rigor and quality of education (Samarasekera et al., 2020). This is also in line with the approach of the school board in this study, which had a contingency plan in place since February 2020 and eventually started sending epidemiological bulletins to inform the academic community about the COVID-19 numbers in the school.

One aspect reported in this study was the importance of cleaning and preparing facilities and the readiness of the IT department to provide rapid training and make Zoom available to students, teachers, and technical staff, even if the different groups were not trained at the same time. Shehata et al. (2020) reported that almost half of the participants in their study said that school resources and infrastructure were adequate, and a small percentage (17.9%) rated technology readiness for this change as high. Consorti et al. (2021) identified some weaknesses in their SWOT analysis, such as teachers' limited skills in using technology, and some threats from lack of access to information technology.

According to the results of the current study, some groups reported that the computing department had developed short training sessions for the academic community so that they could start working immediately. Similarly, in the study by Shehata et al. (2020), half of the participants reported that the school had developed a faculty development program to enable the school community to use alternative methods.

Some of the safety strategies reported for the academic community that had an impact on budget management were contracting equipment, strengthening health and epidemiological control, purchasing PPE, diagnostic tests and carrying them, and equipping classrooms.

The pedagogical changes during the pandemic were many and deeply felt in the school of the current study, many students had their degrees put on hold and their graduations were uncertain. There was a need to adapt curricular units, especially the practical aspects of the course and placements, and some teaching and assessment were done online, via Zoom or other communication platforms, or by substituting, albeit with positive reviews from students and professors. Several studies reported the use of alternative teaching methods for small groups, large groups, pre-clinical and clinical placements, synchronous and asynchronous interaction and communication platforms, with positive results, although clinical teaching and assessment were the most challenging aspects of the process (Consorti et al., 2021; Nasir, 2020; Shehata et al., 2020).

Elshami et al. (2021) conducted a study on the satisfaction with online learning between students and professors, the satisfaction was 41.3% for students and 74.3% for professors. The areas with the highest satisfaction for students were communication and flexibility, while the majority of lecturers were satisfied with students' enthusiasm for online learning. Shehata et al. (2020) reported from their focus group on the resources used in clinical learning and skills teaching during the pandemic. Students were asked to collect certificates for performing certain skills and to record their interactions with the available resources. The teaching and learning processes during the COVID-19 pandemic, with its ups and downs, brought new perspectives and required adaptation of the curriculum and teaching methods. Similarly, several studies concluded that the pandemic promoted changes in curriculum content and platforms and identified some needs that needed to be addressed (Ahmed et al., 2020; Goh & Sanders, 2020; Shehata et al., 2020). A scoping review by Lobão et al. (2023) to map changes in clinical training for nursing students during the pandemic, which included 12 studies, concluded that nursing schools were making efforts to replace traditional clinical training with different activities using simulation or virtual activities, but that contact with others was essential.

The students in this study felt that the support of their professors was fundamental, which is similar to the study by Consorti et al. (2021), in which the students identified the spirit of cooperation between students and teachers as one of the strengths. Another measure that the schools in the current study had to take was to ask for vaccines for their students, as they felt that their students' situations were not taken into account.

Managing mental health during the pandemic was a challenge shared by all participants, as most daily activities were put on hold. People felt the need to replace their routine with other activities, especially physical exercise, developing culinary skills, spending more time with family or friends, including through social media, and adopting pets. Consorti et al. (2021) found that one of the weaknesses in the SWOT analyses was the lack of mental health support for staff. Sohel et al. (2021) described some strategies that could help in managing mental health, such as exercise as a boost to the immune system to reduce anxiety and depression, social media and social networking provide an exchange of encouragement and reduce depression through contact with friends and family, preventing loneliness, boredom, and monotonous situations. The (WHO, 2020) gave some advice to help during the confinement period such as staying physically active, taking care of mental health, quitting tobacco, healthy parenting, and healthy eating. Nasir (2020) reported in his study that high levels of course satisfaction among students were associated with high levels of online peer interaction, indicating a high level of social presence.

For the students in this study, their final celebrations as students were canceled due to the pandemic, so they gathered on Zoom to watch the final serenade together one last time to bridge the distance between peers.

Across the world, work activities changed during the lockdown, some were paused, others stopped, others were transported to their homes, and face-to-face activities were carried out when necessary (Soubelet-Fagoaga et al., 2022). As in the results of other studies, it was found in this community that one of the strategies adopted was to direct most employees to telework. However, this measure could not be applied to all employees, such as IT and some service coordinators. This strategy of keeping key elements in the institution, with all the security measures in place, showed positive results in the fluidity of processes, as mentioned by the participants. Therefore, the balance between teleworking, working in the institution, and using digital tools, especially in services that still rely heavily on paper documents, proved to be an essential strategy.

5. Limitations

After analyzing the results of this study, there are some limitations when considering that the study focused on a particular educational institution or institutions in a particular context. Future studies could aim for a larger and more diverse sample, including participants from different levels of education, disciplines, and institutions.

The study reflects the experiences and perspectives of the participants during a particular period of the COVID-19 pandemic, so their responses may be influenced by social desirability bias or selective memory bias. As the situation evolves, the effectiveness of management policies and strategies may change.

Future research could use a longitudinal approach to track the long-term effects of management, coping, pedagogical, and work strategies on the educational community beyond the immediate crisis period.

6. Conclusion

The focus of this study was to explore, analyze, and describe the adaptive strategies of a university health community in response to the challenges posed by the COVID-19 pandemic. Through content analysis of six focus groups comprising members of the educational community, key themes emerged including management strategies, pedagogical strategies, coping strategies, and working strategies. Key management strategies implemented by institutions during the pandemic were identified and by analyzing the perspectives of different groups, including teachers, students, and administrators, a comprehensive understanding of the challenges and strategies employed was achieved. It highlighted how institutions overcame challenges such as transitioning to distance learning, ensuring security measures, and maintaining academic continuity. It also explored the pedagogical adaptations, coping mechanisms, and working strategies adopted by different members. Future research could include a larger sample of institutions to increase generalisability.

In conclusion, this study contributes to the understanding of the management strategies adopted by educational institutions during the COVID-19 pandemic and their impact on the educational community. Proactive management, coupled with the adoption of strategies tailored to the needs of the community, played a crucial role in maintaining academic continuity and promoting resilience in the face of the challenges posed by the public health crisis.

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Declaração Ética

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