Identifying patient safety research priorities in Estonia: results of a Delphi consensus study

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INTRODUCTION

Patient safety research aims to create new knowledge and find evidence-based solutions to improve patient safety and reduce avoidable adverse events in healthcare.[1] More than a decade ago, the World Health Organization (WHO) recommended that all countries identify, analyse, and prioritise areas where patient safety research could reduce avoidable harm and improve healthcare systems.[2] However, only a few articles about this topic have been published,[3, 4, 5, 6] and only one examined research priorities for patient safety at the national level.[6]

The Patient Safety Research and Development Centre (PSR&DC) at the Faculty of Medicine of the University of Tartu, plays a national role in introducing research-based patient safety practices in Estonia. Its work group previously identified patient safety research in Estonia as limited, fragmented and unsystematic.[7] There is not enough reliable information to support patient safety practices in the Estonian healthcare system. As a part of the Patient Safety Research and Development Strategy 2022-2026 by PSR&DC, this study aimed to collect expert judgements and determine a consensus for patient safety research priorities in Estonia.

METHODS

Study procedure

Based on modified Delphi technique, two online surveys and a virtual consensus meeting (three Delphi rounds) were conducted among patient safety experts from June to November 2021.[8] The first round of the study aimed to assess the relevance and feasibility of patient safety research priorities and to complete the list of priorities. The second round aimed to assess the relevance and feasibility of all research priorities, including those collected and analysed in the first round. The aim of the third round was to determine a consensus among patient safety experts on the priorities for patient safety research in Estonia.

Expert panel

Prior to the three Delphi rounds (in the pre-Delphi period), the experts were selected by identifying a diverse group with knowledge, skills and experience in the area of patient safety.[8] Representatives of healthcare providers, professional societies and organizations, academic staff, patients, and policy makers were selected for the expert panel. Altogether, 161 experts were invited to participate in the Delphi study and 58 were enrolled for the first round. Out of them, 38 participants continued to the second round (see figure 1).

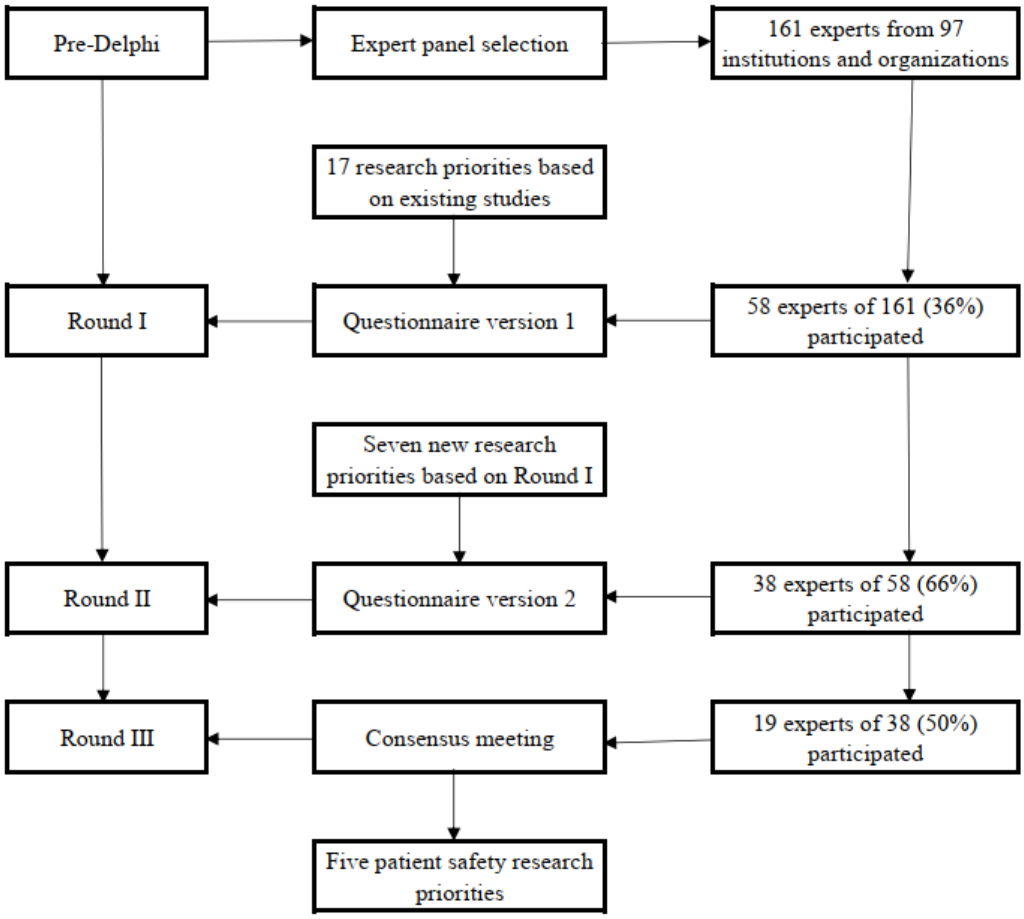

Figure 1. Delphi diagram of the study process.

Questionnaire development

The questionnaire was developed based on existing studies [1, 9] and included 17 research priorities. In the first round, the experts were asked for suggestions on additional priorities for patient safety research. In the first and second round, the participants were asked to assess the importance and feasibility of each research priority. All research priorities were rated on a scale of 0 − 7 as "not at all important − extremely important" and "not at all feasible − very easy to carry out."

Data analysis

Expert assessments collected in the first and second rounds of the study were analysed quantitatively and the expert's proposals for additional patient safety research priorities were analysed qualitatively to find similarities in terms of priorities. The results were presented to the participating experts with the opportunity for them to revise their judgements before the next round of the study.[10] The results of the second round were open for discussion at the consensus meeting in the third Delphi round. In order to reach a consensus, the nine most highly rated research priorities were to identify top priorities.

RESULTS

A total of 58, 38, and 19 experts from 31, 22 and 12 healthcare institutions, professional and patient organizations, respectively, participated in the three rounds of the Delphi study (see figure 1). The first round was attended by 40 (69%) healthcare professionals and employers, 10 (17%) educators and researchers, 3 (5%) representatives of patient organizations, and 5 (9%) policy makers. In the second round the participants were 23 (61%) healthcare professionals and employers, 10 (26%) educators and researchers, 3 (8%) representatives of patient organizations, and 2 (5%) policy makers.

In the first round, experts recommended seven new research priorities which were added to the second version of the questionnaire (see figure 1). In the second round, over 70% of the participants rated 9 out of 24 priorities of patient safety research as very important (6 or 7 on a scale of 0-7). Ten other research priorities were rated as very important by 50-70% and five priorities by less than 50% of participants; 86.5% of the participants considered the **patient safety culture in health care institutions** to be a very important priority of research. The research priority perceived as easiest to study was the **competence and training needs of healthcare professionals.** As a result of the three Delphi rounds, the panel of experts reached an agreement on five priority areas of research: **patient safety culture in healthcare facilities; patient treatment pathways; patient safety improvement strategies; patient safety competencies;** and **patient safety training needs.**

DISCUSSION

This is the first Delphi study conducted in Estonia that explored patient safety research priorities based on the assessments of experts with knowledge, skills and experience in the field of patient safety. We identified five research priorities to be used in the Patient Safety Research

and Development Strategy 2022-2026. These require further implemented through research activities, education and training, and dissemination, outreach and policy development.

Patient safety culture in healthcare facilities was identified as the top research priority in all three rounds of our study. The expert panel found that this priority area could include other patient safety research priorities and provide information for a comprehensive development of patient safety in healthcare settings. For example, the AHRQ Hospital Survey on Patient Safety Culture (SOPS) Version 2.0 includes various patient safety research priorities, including **reporting patient safety events,** and **staffing and work pace**,[11] which were separate research priorities in the WHO recommendations.[1] In a previous Delphi study conducted in Iran, **adverse drug events and its epidemiology** was the highest ranked national research priority.[6] In our study, **adverse drug events** were rated sixth based on the results of the second round. All other research priorities agreed by the expert panel, including **patient treatment pathways, patient safety improvement strategies, patient safety competencies**, and **patient safety training needs**, will provide significant benefits to the development of patient safety practices in healthcare.

Some limitations of this study need to be recognized. The study had a low number of participants and only a 36% response rate in the first round. However, a low response rate is common in Delphi surveys[12] and professionals, employers, educators, researchers, patients, and policy makers were represented in our study. Another limitation was the use of a modified Delphi technique, wherein the online survey was not preceded by expert interviews. According to previously published studies, the use of modified Delphi techniques, which do not have fully clarified criteria, is quite common.[8]

CONCLUSION

Estonian experts achieved reliable consensus in determining patient safety research priorities. These included patient safety culture, patient treatment pathways, patient safety improvement strategies, patient safety competencies, and patient safety training needs, which were all incorporated into the Patient Safety Research and Development Strategy 2022–2026.[7]

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CONTRIBUTIONS

TF, KP, HC, MK, ML CO, AT, HV, and JS planned and designed the study; KP conducted the data collection; TF and KP analysed data; TF and KP wrote the manuscript; all authors reviewed the final manuscript.

COLLABORATORS

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ETHICAL APPROVAL

Ethical approval was not required for this study.

COMPETING INTERESTS

The authors declare that the survey and analyses were conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

PATIENT INVOLVEMENT

Representatives of patients organizations participated in the study as experts.

PATIENT CONSENT FOR PUBLICATION

Not required.

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