Background and purpose

Intensive care unit (ICU) patients undergoing mechanical ventilation are usually unable to orally communicate and express their wishes, feelings and needs. This incurs high levels of stress to them [1,2]. Easy-to-use and effective tools to facilitate communication with non-vocal ICU patients are lacking [3]. Digital sociotechnical systems hold the potential to significantly facilitate communication for these patients but there is limited information about the existing body of evidence, especially with regard to technical and functional characteristics, feasibility, clinical benefits or harms of such technologies.

The purpose of this research is to examine respective literature and to provide a systematic overview of the current status of digital sociotechnical technologies for early communication with non-vocal ICU patients. This review is part of the project ACTIVATE which aims to develop and pilot an ambivalent system to support communication, re-orientation and selfcare in ICU patients during the weaning period.

Methods

Scoping review based on the framework by Arksey and O’Malley [4].

Data sources and eligibility criteria

The databases Medline, Embase, CINAHL and IEEE (Institute of Electrical and Electronic Engineers) and additionally grey literature were initially searched in August 2017, with regular search updates every six months. The search strategy consists of four strings covering the target population (mechanically ventilated ICU patients, except neonatal or pediatric care), the intervention (digital technologies) and the outcomes of interest (communication and participation). Any type of study or project report addressing the target topics are eligible for inclusion (Fig. 1). Only publications in English and German are considered.

Selection, data extraction and synthesis

Reference screening and data extraction are conducted by two researchers independently. Reported systems are classified as being either under development, piloting, evaluation or implementation. Aside from this classification and the type of publication/study no quality criteria are considered. Information is synthesised narratively.

Results

Four out of 785 papers retrieved were eligible for inclusion (Fig. 2). Except one, all of these papers report on sociotechnical systems at developmental stages (Table 1). Full study reports are rarely available. Therefore, information on the theoretical or methodological foundation of the digital systems under development or piloting is lacking. None of the four papers provide evidence of involvement of nurses, nursing researchers or patient representatives.

Conclusions

Research about digital systems to promote communication with non-vocal/weaning ICU patients appears premature and insufficiently reported. Nursing researchers should become more involved in the development and evaluation of digital technologies for nursing care throughout all projects steps and support dissemination of and adherence to existing clinical research and reporting standards.