ADVERSE EVENTS IN LONG TERM CARE PATIENTS. A SYSTEMATIC REVIEW: PRELIMINARY RESULTS

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Introduction:

The prevalence of adverse events (AEs) has been studied by epidemiological studies in different settings (hospital care, primary care, emergency department). Still, it is less developed in long-term care patients. Also, a general overview of the magnitude of the problem is lacking in this care level.

Objectives:

The aim of this review is synthetize the methods and tools used to identify variables to detect and characterize the occurrence of adverse events in long-term care.
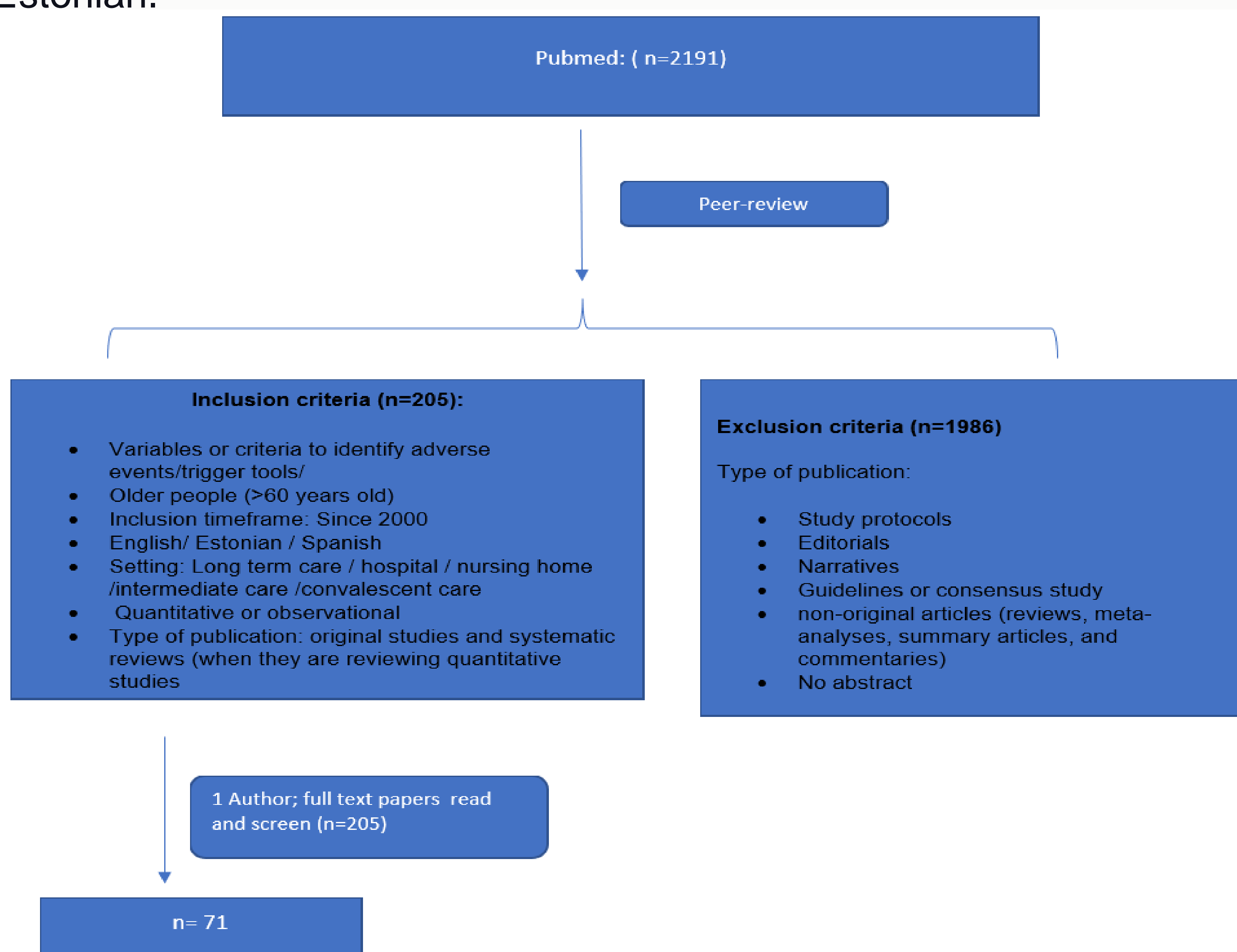
Methods: Systematic review: quantitative and qualitative

1.We have developed an exhaustive systematic search using a PICO table and a search strategy.

2.We have searched the PubMed database for articles published from 2000 to 2021. Two reviewers independently extracted data and assessed the methodological quality of the included using the Rayyan web tool. A third research expert on the subject has helped to solve discrepancies among reviewers.

3.The primary outcomes of this review were the methods and tools used to identify and characterize adverse events in long-term care. The secondary outcomes are the frequency and causes of adverse events in this population.

To be eligible for this review, studies had to be carried out in intermediate care, long-term care, nursing home or convalescent care populations, hospital, and be conducted on people over 60 years.

We considered adverse events as any harm, unintended injury or complication resulting in extra resources, prolonged hospital stay, disability at the time of discharge or death and caused by healthcare management rather than by the patient's underlying disease process[1].

We excluded non-original studies, study protocols, editorials, narratives, guidelines or consensus studies, and studies without abstracts or written in other languages than English, Spanish or Estonian.

Pubmed: (n=2191)

Peer-review

Inclusion criteria (n=205):
- Variables or criteria to identify adverse events/trigger tools/
- Older people (>60 years old)
- Inclusion timeframe: Since 2000
- English/ Estonian / Spanish
- Setting: Long term care / hospital / nursing home /intermediate care /convalescent care
- Quantitative or observational
- Type of publication: original studies and systematic reviews (when they are reviewing quantitative studies)

Exclusion criteria (n=1986)

Type of publication:
- Study protocols
- Editorials
- Narratives
- Guidelines or consensus study
- non-original articles (reviews, meta-analyses, summary articles, and commentaries)
- No abstract

1 Author; full text papers read and screen (n=205)

n= 71

Results:

We selected 71 papers. We have classified the alerts or triggers to detect adverse events in groups:
- **Global Trigger Tool**[1] (GTT): one article with GTT[1] and the other uses an additional value in the evaluation of incidents and adverse events[2] called "skilled nursing facility trigger tool".
- **General care** (n= 40) specific trigger tools: delirium, n=1; restrain use, n=2; malnutrition, n=3; skin, n=4; infection, n=7; falls, n=16; Other trigger tools n=7.
- **Medication (specific) + Adverse Drug Event (ADE) trigger tool** (n=29); The most common trigger tools in ADE are the criteria STOPP/START and Beers list medications;

(n) Articles wtih type of ALERT

Type of ALERT	n
MEDICATION	11
GTT	2
GENERAL CARE (SKIN)	4
GENERAL CARE (RESTRAIN)	2
GENERAL CARE (MALNUTRITION)	3
GENERAL CARE (INFECTION)	7
GENERAL CARE (FALL)	16
GENERAL CARE (DELIRIUM)	1
GENERAL CARE	7
ADE TRIGGER TOOL	18

GTT: Global Trigger Tool; ADE: Adverse Drug Event

Discussion: Strengths and weaknesses of review procedures

Long term care literature remains a difficult area to search, because it is less developed. One method of analysing adverse events is the GTT[1]. The GTT was created by the Institute for Healthcare Improvement (IHI) and provides a list of clues to detect AEs.
We have found 2 studies that use a GTT in long term care, but this tool is not specific for these patients.
We only found one study that has modified the GTT to make it specific for acute geriatric hospital, they used an additional evaluation to the GTT[2] that is called "Skilled nursing facility trigger tool (SNFTT)"[2]. This study demonstrates that adding the SNFTT to the GTT does not increase the effectiveness regarding the evaluation of AEs but SNFTT provides more accurate description to discern triggers. In this paper the most commonly identified AEs were the general care (the same as in our review) [2]. This paper finds a low occurrence of medication AEs because it is difficult to detect them, which is a typical shortcoming of the GTT. We found different studies to better characterize the occurrence of medication AEs in long term care that encourage to do future research creating a trigger tool with a long-term care module [2]. A limitation of this study is that only one database has been used.

Conclusion

This systematic review provides support for the methods and tools used to identify variables to detect and characterize the occurrence of adverse events in long-term care.

References:
1. Griffin FA, Resar RK. IHI Global Trigger tool for measuring Adverse Events, IHI Innovation Series White Papers. 2en ed, Cambridge, MA Institute for Healthcare Improvement; 2009
2. Menéndez-Fraga MD; Alonso J; Cimadevilla B; Cueto B; Vazquez F. Does Skilled Nursing Facility Trigger Tool used with Global Trigger Tool increase its value for adverse events evaluation?. Journal of healthcare quality research -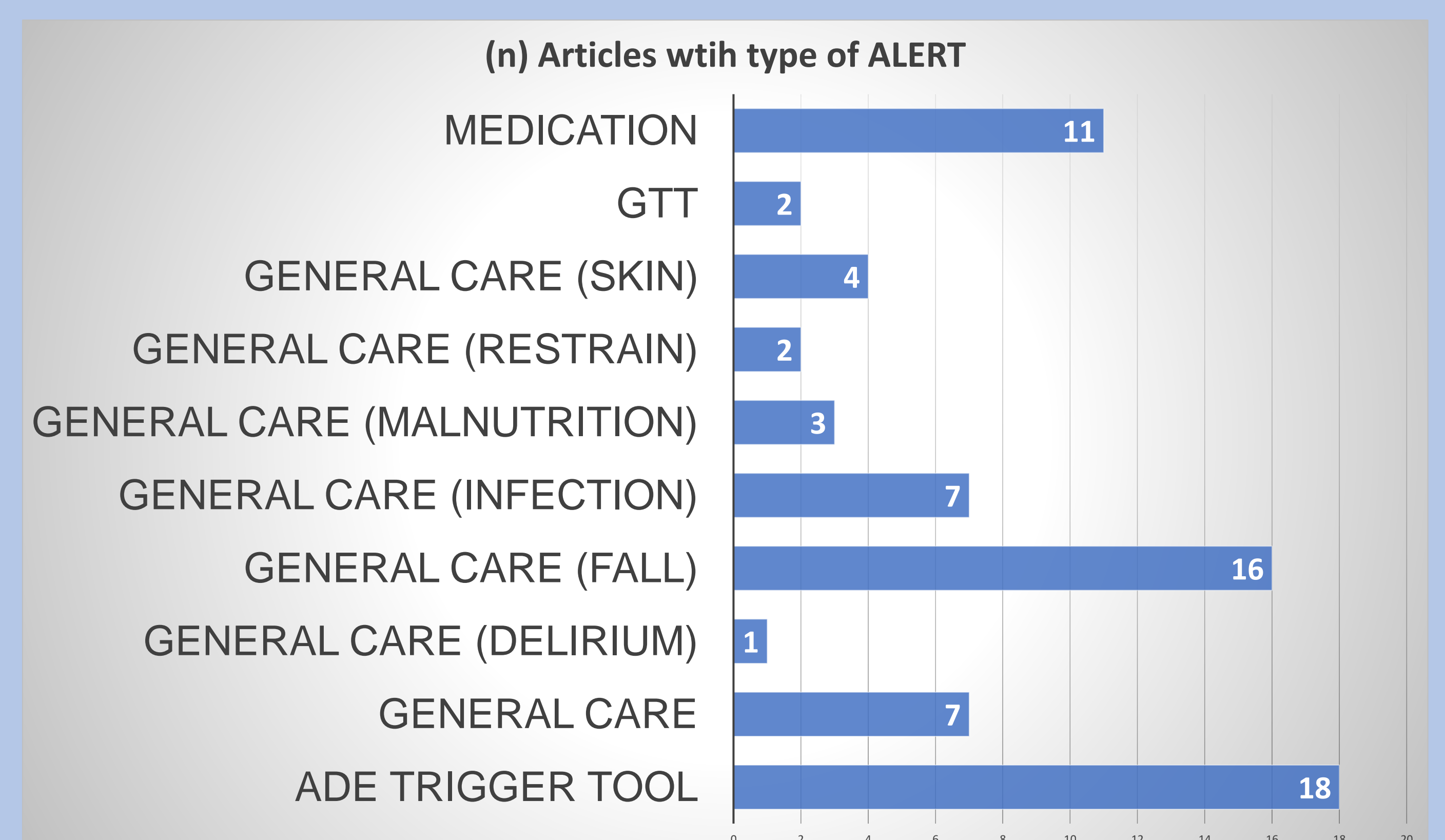 Volume 36, Issue 2, pp. 75-80. 2021