

Farm safety education: a chance to improve safety and health literacy among agricultural workers



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Background

Agriculture is among the least healthy employment sectors in Europe[1]. The health hazards not only concern occupational diseases, but also injuries that might occur due to the nature of work. With over 500 fatal accidents annually across the EU, agriculture has the worst fatal accident record of all major employment sectors[2]. To counteract this problem, farm health and safety initiatives that aim to increase farm safety and improve the health of agricultural workers are necessary. Of the three “Es” of safety – Education, Engineering, and Enforcement – Education has the potential to increase farmers’ health and safety through enhancing health and safety literacy among farmers[3]. However, little is known to what extent existing safety education is successful in increasing the health and safety literacy of farmers.

OBJECTIVE: The present paper presents a systematic literature review to assess the effectiveness of farm safety education interventions in improving safety and health literacy of agricultural workers.

Methods

We conducted a systematic review of the literature, following the PRISMA-P guidelines.

PubMed, SCOPUS, Embase and PsycINFO databases were searched from November 2018 to January 2019, using the search terms: health literacy (and synonyms) and agriculture (and synonyms) and farm safety (and synonyms) and interventions (and synonyms).

Only farm safety interventions focusing on either injury or occupational diseases that aimed to offer both knowledge and competencies for farmers were considered as eligible. Farm safety interventions focusing on mental health of the farm workers were not included.

The search was limited to papers in English from all countries.

Results

A total of 2518 articles were initially identified as relating to the topic. Studies were selected independently by two reviewers using CADIMA[4]. Titles and abstracts were screened for relevant articles to be included in the review. Fifty-three articles met the inclusion criteria and were further considered for the full-text review. After the full text review, 30 articles were included in the final analysis.

Table 1 – PRISMA Flowchart

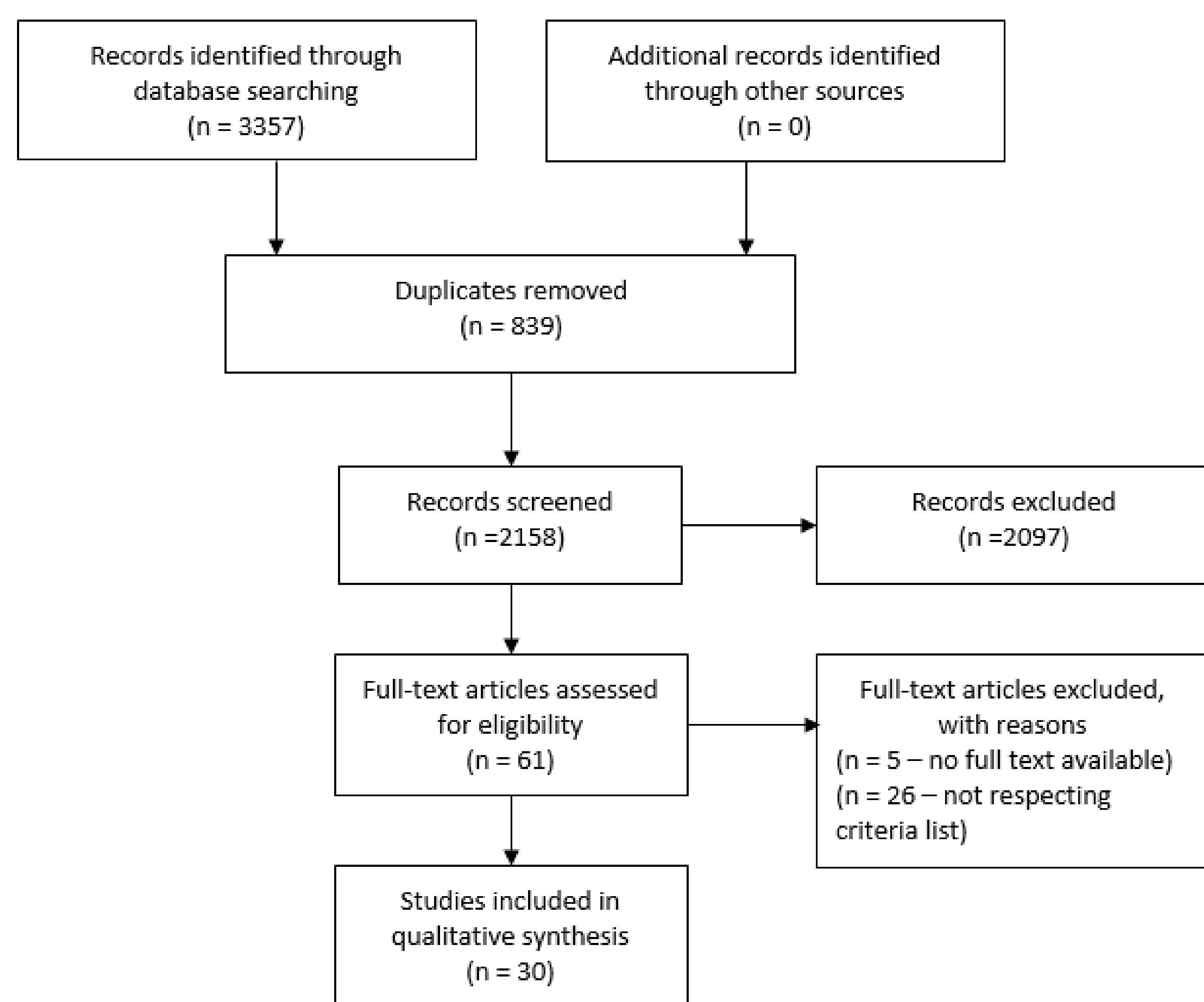


Fig. 1 – Type of intervention

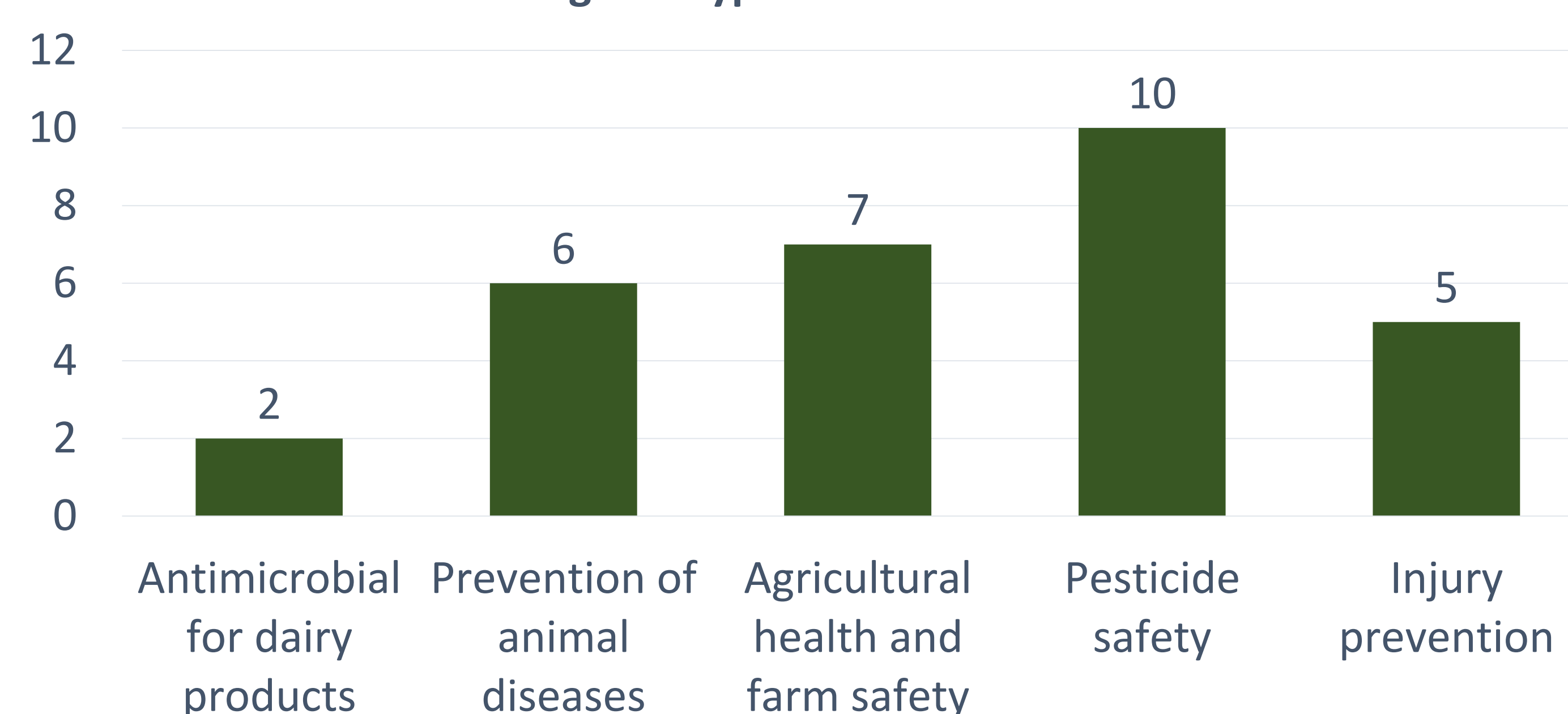
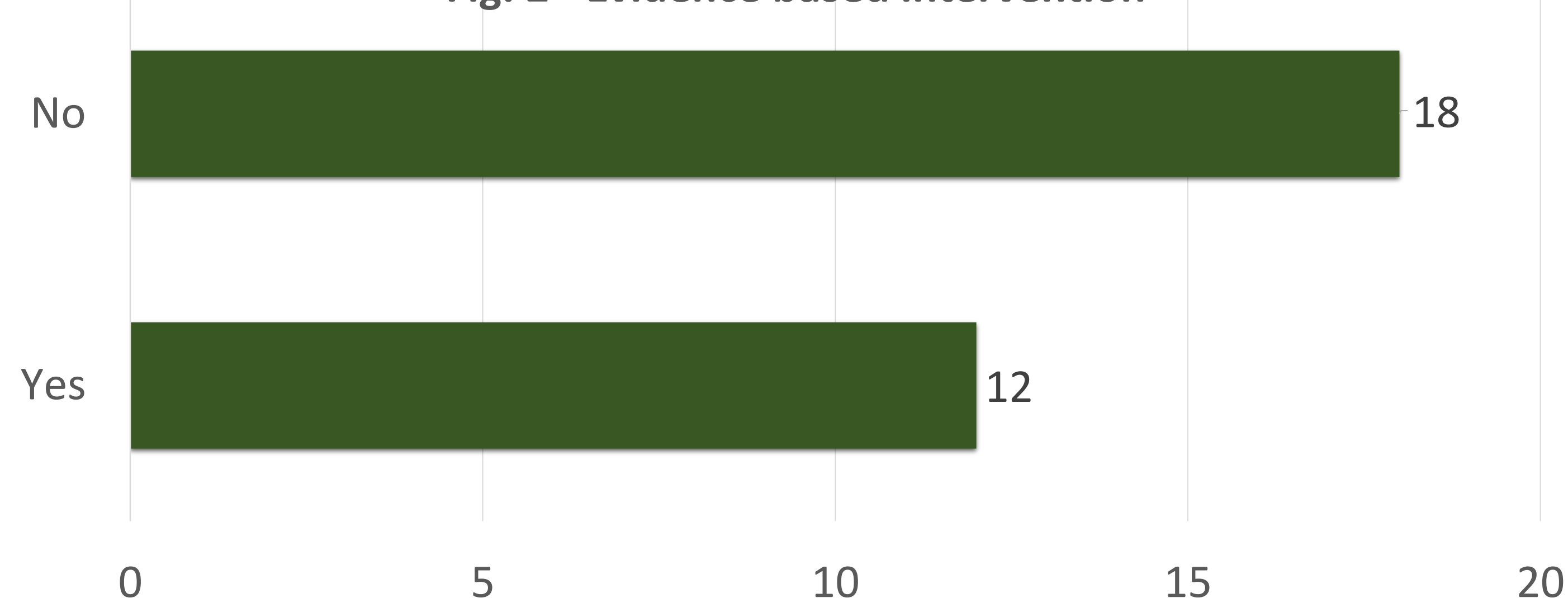


Fig. 2 - Evidence based intervention



The articles included in the analysis discussed farm safety education interventions on issues concerning pesticide use and handling, health and prevention of occupational diseases due to farming, microbial and zoonotic infections, and injury prevention. The methods used were diverse, from videos, songs, role-playing, supermarket tours, skill building workshops, peer-led interventions, and skill building games. All of the interventions measured the knowledge and practices of farmers (and some of their families) pre-post intervention and a large number of articles (27) used intervention and comparison groups. As shown in Fig. 2, there were 12 articles that based their interventions on theories such as: Theory of Planned Behaviors, Health Belief Model, Theory of Reasoned Action, Diffusion of Innovation Theory, and The Transtheoretical model. Despite their efforts, not all the farm safety education interventions observed changes in farmers knowledge and practices over time.

Conclusions

Farm safety educational interventions that reported significant changes in knowledge and behaviors based their methodology on evidence based theories and developed tailored materials and evaluations methods. They took into consideration the education levels, socio-economic status and developed the intervention taking into account farmers knowledge, attitudes and practices (KAP). On the other hand, interventions that did not report significant changes in knowledge and practice over time, identified as limitations education and limited literacy of farmers, cultural factors, and environmental factors that were not taken into account.

Farm safety education interventions should be developed based on evidence based models aiming to increase knowledge and behaviors of farmers by taking into consideration education, literacy levels and cultural factors. These educational strategies will ultimately improve farmers’ safety and health literacy.

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