Background: Medical devices frequently reused between procedures in different patients are associated with high contamination rates and multiresistant microorganisms. Traditionally, tourniquets used in peripheral venipuncture (the most often performed invasive procedure in healthcare settings) are reused between patients, posing a risk of cross-contamination. However, no studies were found that summarize all the available evidence regarding tourniquet contamination, including the identification of the most prevalent microorganisms.

Materials/methods: In order to overcome this gap, a scoping review was conducted based on the Joanna Briggs Institute’s methodology (Peters et al., 2017). The analysis of article relevance, data extraction and synthesis were performed by two independent reviewers. Published and unpublished studies, written in English, French, Spanish and Portuguese, published until December, 2017 were considered for inclusion in this review.

Results: Overall, 1,587 potentially relevant studies were identified (with 530 excluded for being duplicates). The remnants were analyzed by title/abstract, and 36 were included for full-text assessment. After this process, 20 studies were included in this review, with a total sample of 1.479 tourniquets. Overall, contamination rates varied between 10 to 100%, with coagulase-negative staphylococci emerging as the most prevalent microorganism found (n=441). Although in a smaller number, the included studies also reported the presence of bacillary bacteria in tourniquets, specifically gram-negative bacteria, such as Escherichia coli, Klebsiella spp., Pseudomonas spp., Acinetobacter baumannii, and Stenotrophomonas maltophilia.

Conclusions: Considering that fifteen studies showed a rate of contamination higher than 70% of the tourniquets analyzed, this data reiterate the inherent risks that reusable tourniquets can pose to patient safety and care quality, related to the potential dissemination of microorganism between patients through this medical device. More studies should be developed focused on the impact of the introduction of tourniquet decontamination guidelines/programs in clinical settings and professional training. Moreover, the mandatory introduction of single-use disposable tourniquets in clinical settings should be considered as a potential resolution to the results found.