

# The Efficacy of Short Message Service for Postoperative Pain Management: Systematic Review Protocol

Christoph Buck<sup>1</sup>, MSc, PhD; Christian Keweloh<sup>2</sup>, BA, BSc; Adam Bouras<sup>c</sup>, MHA; Eduardo J. Simoes<sup>d</sup>, MD, MSc, MPH

<sup>a</sup> Queensland University of Technology, School of Management

<sup>b</sup> University of Bayreuth, Chair of Information Systems Management

<sup>c</sup> University of Missouri, School of Medicine

<sup>d</sup> University of Missouri, School of Medicine

## **Corresponding Author:**

Christoph Buck

School of Management

Queensland University of Technology

2 George St, Brisbane City QLD 4000

Phone: +61405855937

Email: [christoph.buck@qut.edu.au](mailto:christoph.buck@qut.edu.au)

## Background

In the United States, more than 700,000 citizens died from drug overdoses between 1999 and 2017, about two-thirds of them due to opioids [1,2]. Addiction to opioids, especially to pharmaceutical opioids, poses a major public health threat [3,4]. These pharmaceutical opioids are typically prescribed for post-operative pain management [5]. According to the World Drug Report of the United Nations Office on Drugs and Crime 2019 (UNODC) [4], appropriate pain management strategies must be developed and implemented to respond adequately to this threat. These pain management strategies particularly rely on effective physician-patient communication [6]. With advancing digitalization, however, this communication has to be increasingly provided through telemedicine [7]. According to Lu et al. [8], mobile instant messaging applications (MIM), as well as short message services (SMS) offer major potential, whereby SMS is more frequently utilized. SMS communication provides a variety of features and proven benefits for healthcare applications [9,10]. To address this opioid epidemic, pain management combined with SMS as a communication medium could be viable, whereby the postoperative phase seems to be particularly decisive. Therefore, this paper aims to structure the current state of the literature regarding postoperative pain management via SMS. To our knowledge, there is currently no specific literature review on SMS-based pain management and no synthesized results.

## Objectives

By answering the research question through a systematic literature review, a conceptual framework for future research should be provided. This paper examines the following research question:

Is postoperative pain management feasible and effective utilizing SMS?

## Methods

The systematic literature review will be based on the recommendations of several guidelines [11–13].

### Exclusion & Inclusion Criteria

#### Type of Publication:

Only studies that have been published in a scientific journal or at a conference will be included in the systematic literature review.

#### Language:

Only studies that have been published in English will be included in the systematic literature review.

#### Duplicates:

All duplicates will be excluded.

#### Type of Intervention & Outcome:

All studies that deviate thematically after conducting the Title-Abstract-, or Full-Text-Screening, will be excluded.

#### Research Method:

All studies with a secondary research method will be excluded.

Based on the remaining studies, a forward and backward search will be executed.

### Search Strategy

The search string is designed by using Boolean operators. The search string will be adapted to the specific characteristics and requirements of the respective database. The following databases will be used for the literature search: PubMed, Medline, Scopus, Web of Science, CINAHL, Science Direct, IEEE, and AISEL.

"text messag\*" OR "short messag\*" OR "sms"  
 AND  
 "postoperative care\*" OR "post-operative care\*" OR "surge\*" OR "surgic\*" OR  
 "operat\*"  
 AND  
 "pain" OR "medicat\*" OR "opioid\*" OR "analgesic"

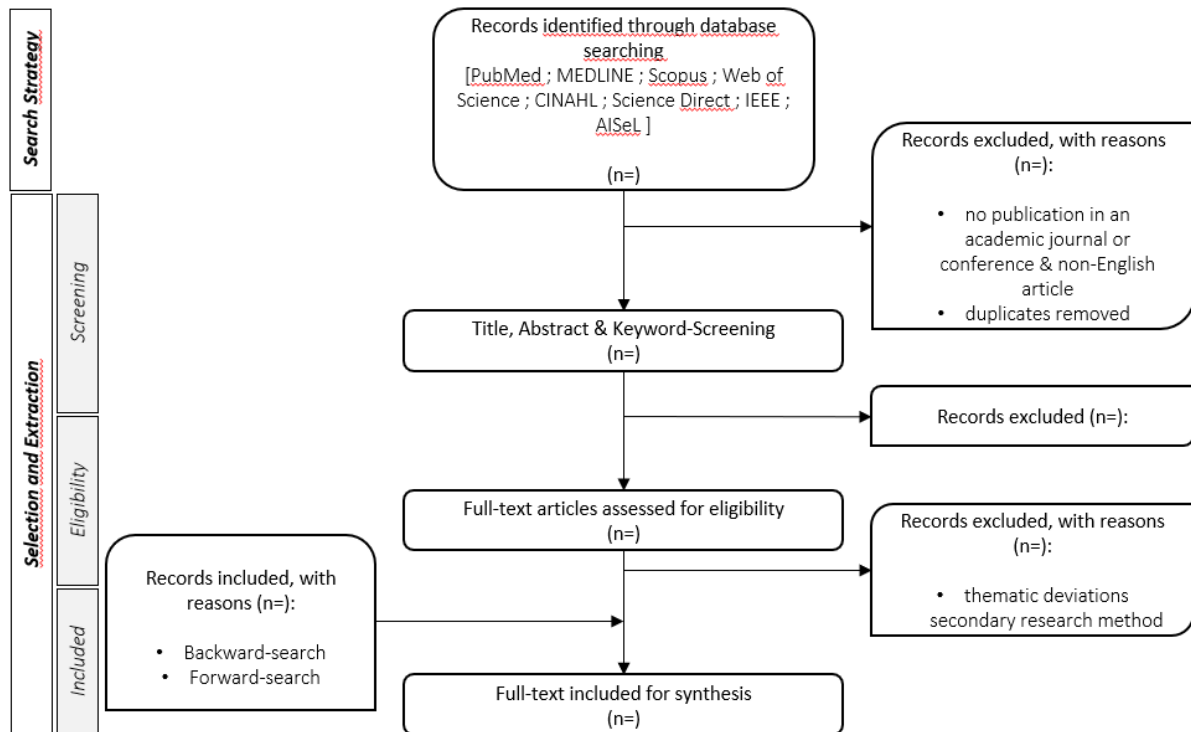
### Data Collection & Data Synthesis

The relevant studies will be grouped and described according to study design, research objective, surgical procedure, automation, message purpose, time, pain scale and other aspects as appropriate.

The results of the systematic literature review will serve as a basis for developing a communication model.

### Data Display

The results will be displayed by the following systematic literature review flowchart [13,14].



Additionally, the key results are summarized and presented in tables as outlined below.

<b>Study</b>	<b>Study Design</b>	<b>Research Aim</b>	<b>Surgical Procedure</b>	<b>Automation</b>	<b>...</b>
Study 1					
Study 2					
...					

## **Results**

The systematic literature review process will be conducted between March and April 2019. The results will be consolidated and evaluated from April 2019.

## References

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