INTRODUCTION

Diabetes mellitus is often referred as silent killer because the prognosis of the disease takes a long time to be detected. Patient with blood glucose level above normal limit persistently has the potential for complications of micro and macro vascular diseases, increased health costs, mortality, and decreased quality of life (1).

The development of information technology allows health care not only to be done face-to-face but also when health care providers and patients are not in the same location. The emergence of online social media can be used as a medium of supporting existing face-to-face traditional health care. Online social media allows health care providers and patients to communicate quickly, efficiently, affordably, and in real-time even when they are not in a health care facility (2). This systematic review presents new evidence regarding the use of social media as an intervention method to improve the health outcomes of diabetes mellitus patients.

METHODS

Search Strategy

An electronic literature search was carried out in February 2020. The three databases used in this study were Pubmed, Medline, and Scopus. The keywords used are “social media”, “social networking”, “facebook”, “whatsapp”, “wechat”, and “twitter” combined with the keyword “diabetes” contained in the title or abstract of the articles in the three databases. Searching on electronic databases was also complemented by manual searches from the results of reference reviews and other systematic reviews.

Study Selection

Articles that were included in this systematic review must meet the criteria in the form of a research article (primary study), which are using social media as a medium of intervention, reporting the outcome of the intervention, and the research sample is diabetes mellitus patients.

Data Extraction and Analysis

Reviewer screened all titles and abstracts. After that, articles that had the potential to be selected were further screened by assessing the full text articles. Finally, a list of articles to be reviewed and data extraction.

RESULTS

A total of 14 articles were included in this systematic review (Fig. 1).

Health Outcomes

1. One study had treatment behavior outcomes with improvement in treatment behavior (2).
2. The studies had clinical outcomes (9-14), but only four of them had improvement in Hba1C value (11-14).
3. Six studies had treatment behavior outcomes and clinical outcomes (4-8, 15), but only one study had improved treatment behavior and clinical outcomes (7), meanwhile three studies had improved treatment behavior only (4, 6, 15).
4. One study had medication adherence outcome, but no improvement in medication adherence (16).

Figure 1. Flowchart of study selection

Characteristics of Intervention

1. Ten studies used a randomized intervention design (3-12). Four studies used a non-randomized intervention design (13-16).
2. Six studies used a combination of face-to-face interventions with social media (4-8, 12). Three studies were able to improve treatment behavior outcomes in diabetes mellitus patients (4, 6, 7), but only one study was able to decrease Hba1C (7).
3. Two studies used a combination of telephone and social media interventions (13, 14). Both studies were able to significantly reduce Hba1c level.
4. There were six studies that used social media as the main intervention method (3, 9-11, 15, 16). Two studies succeeded in improving treatment behavior outcome (3, 15) and only one study was able to improve Hba1c value (11).
5. The social media used as the medium of providing intervention were WhatsApp (3, 4, 14-16), Telegram (5), WeChat (7, 11, 12), Facebook (6, 10), a combination of Facebook and Skype (9), and particular social media application (8, 13).
6. Ten studies used two-way communication between health care providers and patients (3, 5-8, 10-12, 14, 16). The remaining 4 studies used one-way communication from health care provider to patients (4, 9, 13, 16).
7. The most frequent communication by social media by health care providers was once per week (3, 5-8, 11, 14, 15), twice per week (13), every day (5), and once per month (4, 10, 12). The more intensive the communication frequency between the health care provider and the patient, the more health outcomes will be achieved.
8. The duration of use of social media for health interventions in patients performed was less than or up to 3 months (3, 5, 6, 8, 11, 13, 15, 16) months, (4, 7, 9, 12).

DISCUSSIONS

Even though the health care provided by health care provider to patients face-to-face is quite effective, constraint in the form of too short communication time hinders the achievement of more optimal health outcomes (17). Patients often have difficulty in understanding too much information provided by health care provider at one time. Social media can be used as an alternative medium of providing health care because it can increase the intensity of communication between health care provider and patients. The more intensive the communication is, the greater the patient’s involvement in disease management and treatment is. This intensive communication also makes it possible to achieve more optimal health outcomes (18).

CONCLUSION

Most of the social media interventions identified in this review are able to influence treatment behavior and clinical outcomes. Social media has the potential to be used as a medium of support in providing health care.