

32nd International Nursing Research Congress (2021)

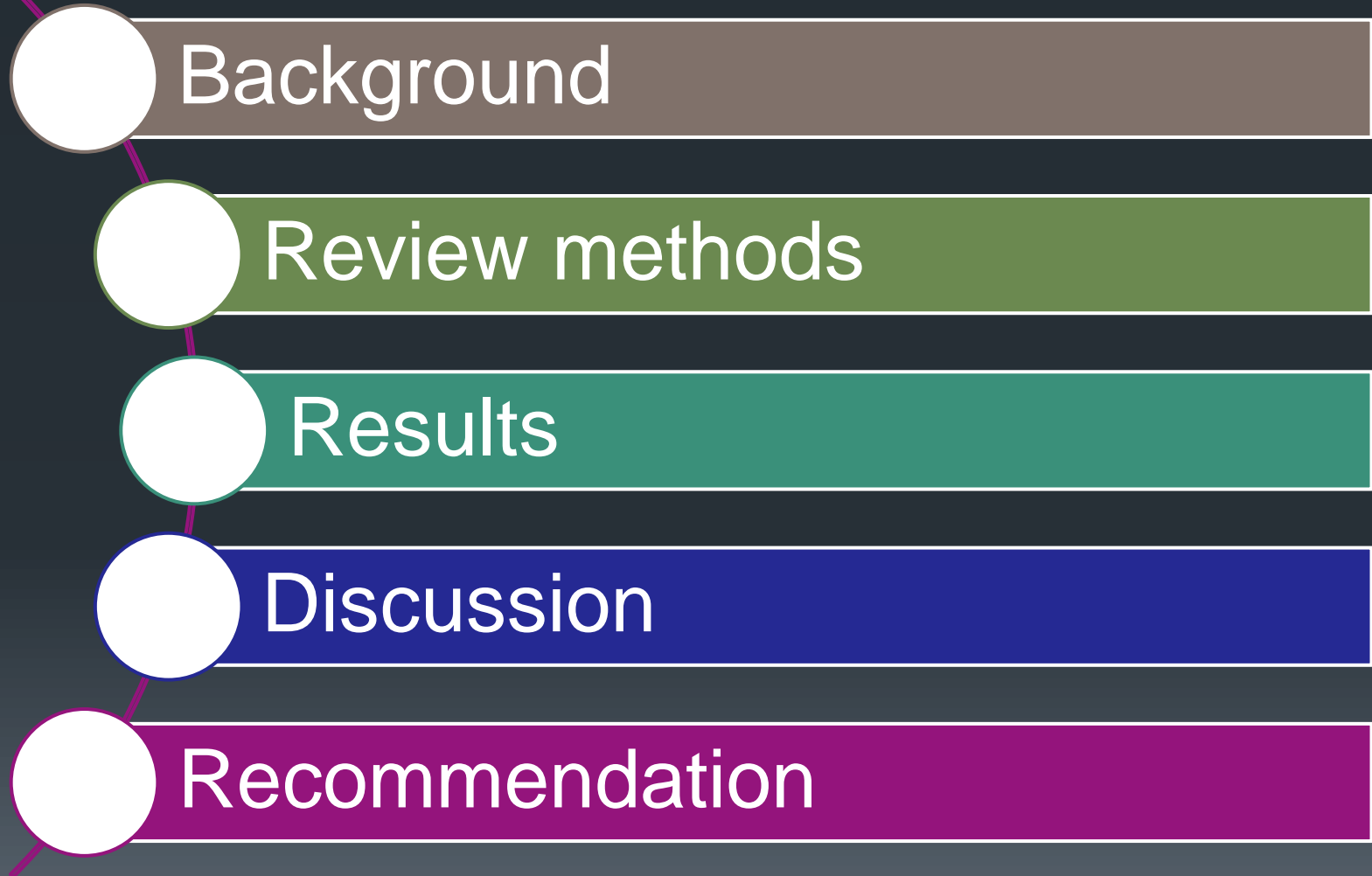


Predicting factors influencing translation to foot self-care in patients with diabetes: an integrative review

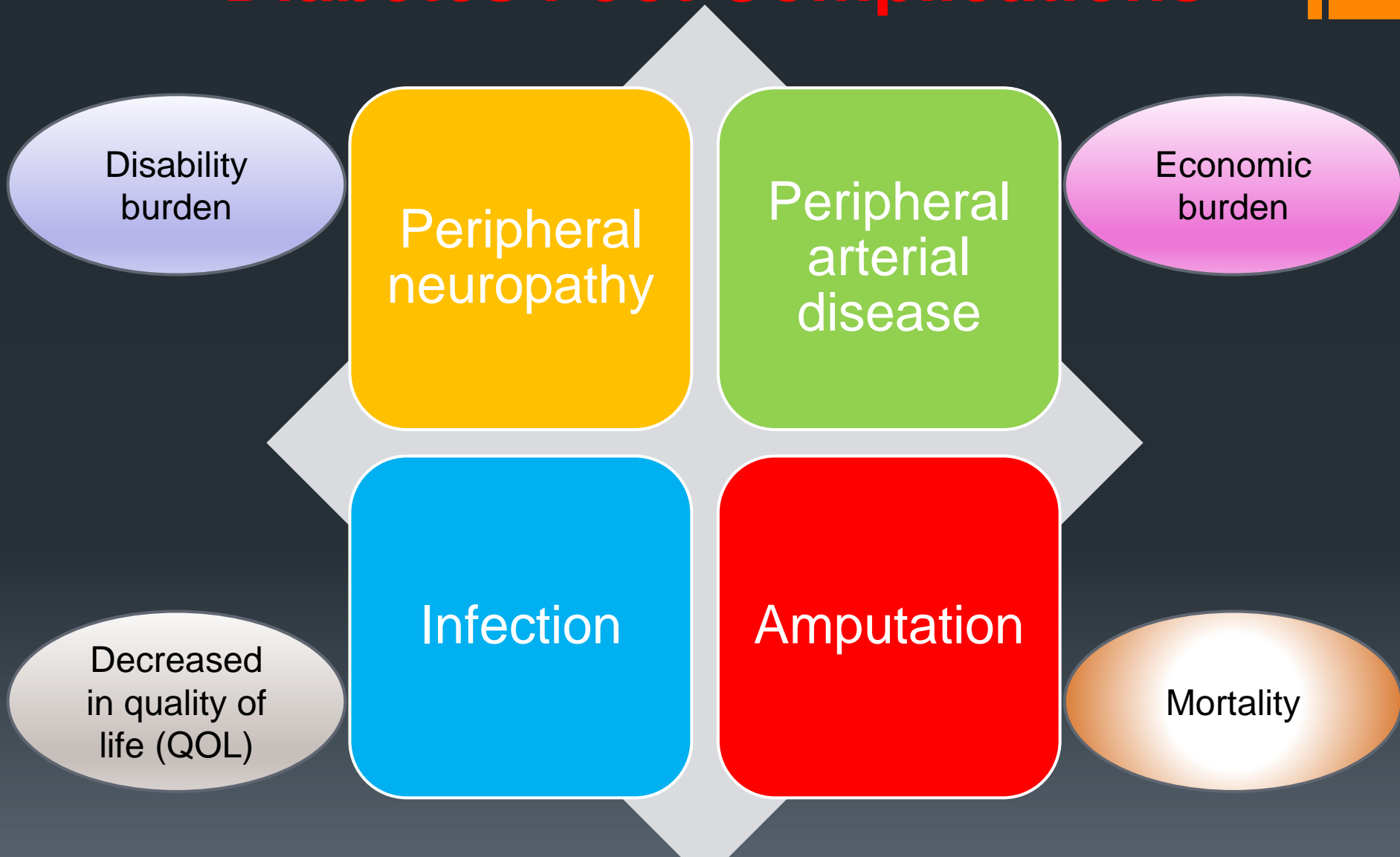
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Content



Disease Burdens associated with Diabetes Foot Complications



Background

- Foot self-care is generally endorsed as prescribed standardised guideline towards effective diabetes self-management worldwide.

(International Diabetes Federation, 2013)

- Diabetic foot self-care encompasses the following aspects, such as compliance to daily foot hygiene, foot examination, proper nail care and appropriate foot wear selection and seeking immediate medical attention to any arising foot injuries.

(Karadag˘ et al., 2019)

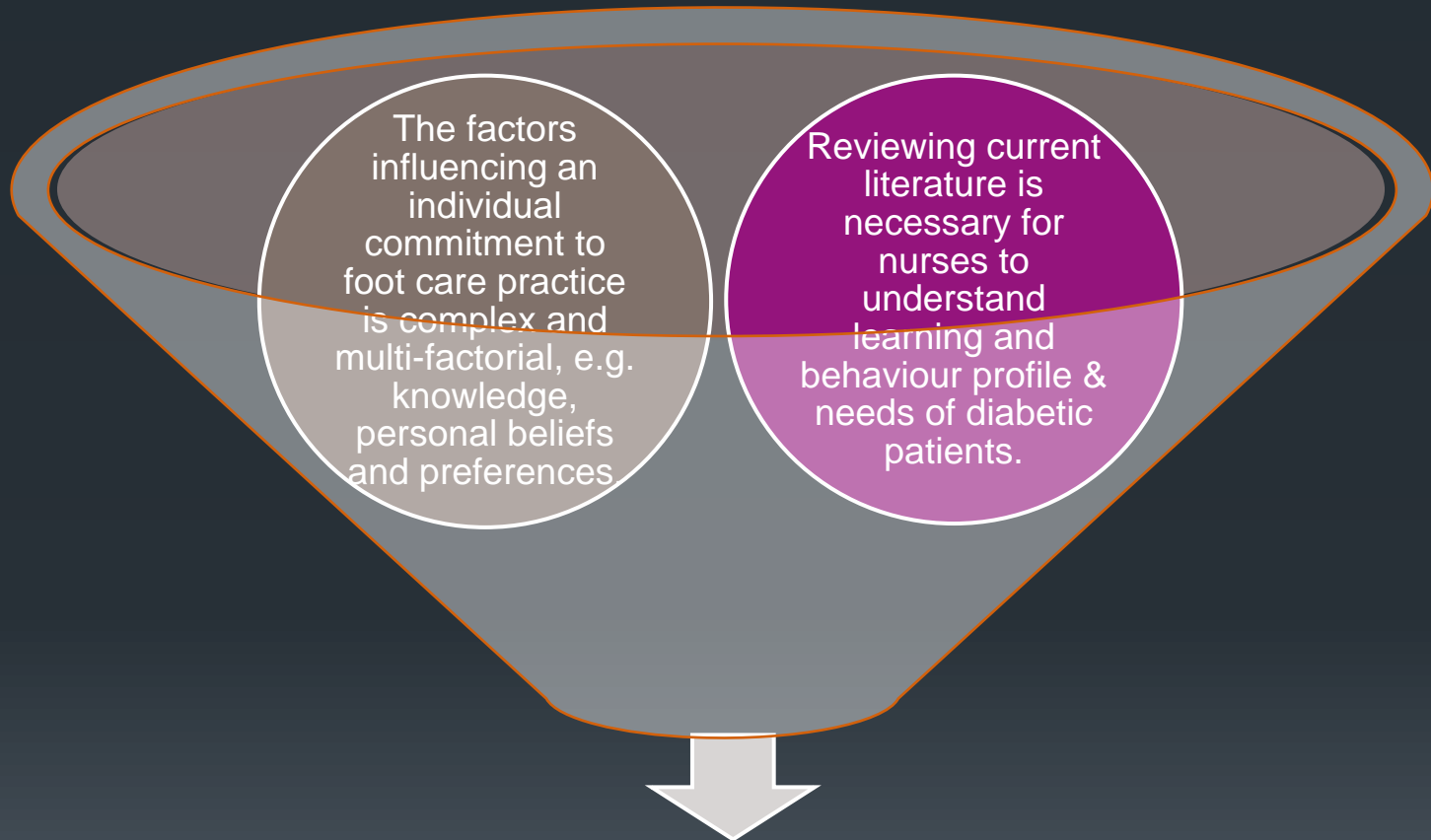
- Consensus was unanimous among studies ($n=3$) that compliance to foot care would serve as the most effective strategy to prevent diabetic foot complications

(McInnes et al., 2011; Schaper et al., 2017; Indrayana et al., 2019)

- Despite its significance, however, the literature revealed that the practice and conforming to foot care was often ignored and neglected by most diabetic patients.

(Chin & Huang, 2012; Hingorani et al., 2016; Saleh et al., 2014)

What do this research adds?



Findings of this study would offer critical insights for healthcare professionals to identify the enabling and inhibiting factors that would influence diabetic patients towards commitment of foot care and enable them to plan targeted educational programs that are more responsive of their needs and beliefs.

Review Method



Whittemore & Knafl (2005) five stage systematic approach underpins the framework of this integrative review.

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graph LR; S1[Stage 1: Problem Identification] --> S2[Stage 2: Literature Search]; S2 --> S3[Stage 3: Data Evaluation]; S3 --> S4[Stage 4: Data Analysis]; S4 --> S5[Stage 5: Data Presentation];
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Stage 1:
Problem
Identification

Stage 2:
Literature
Search

Stage 3:
Data
Evaluation

Stage 4:
Data
Analysis

Stage 5:
Data
Presentation

Stage 1: Problem Identification



Stage 2: Literature Search

Database

CINAHL, Medline and PsycINFO.

Time limit:
1991-2020

Search Terms

Keywords:
“knowledge”,
“practice”, “foot care”
and “diabetes”

Boolean operators,
‘AND’ or ‘OR’, with
simultaneous
utilisation of truncation
symbols (*) or wildcard

Stage 2: Literature Search

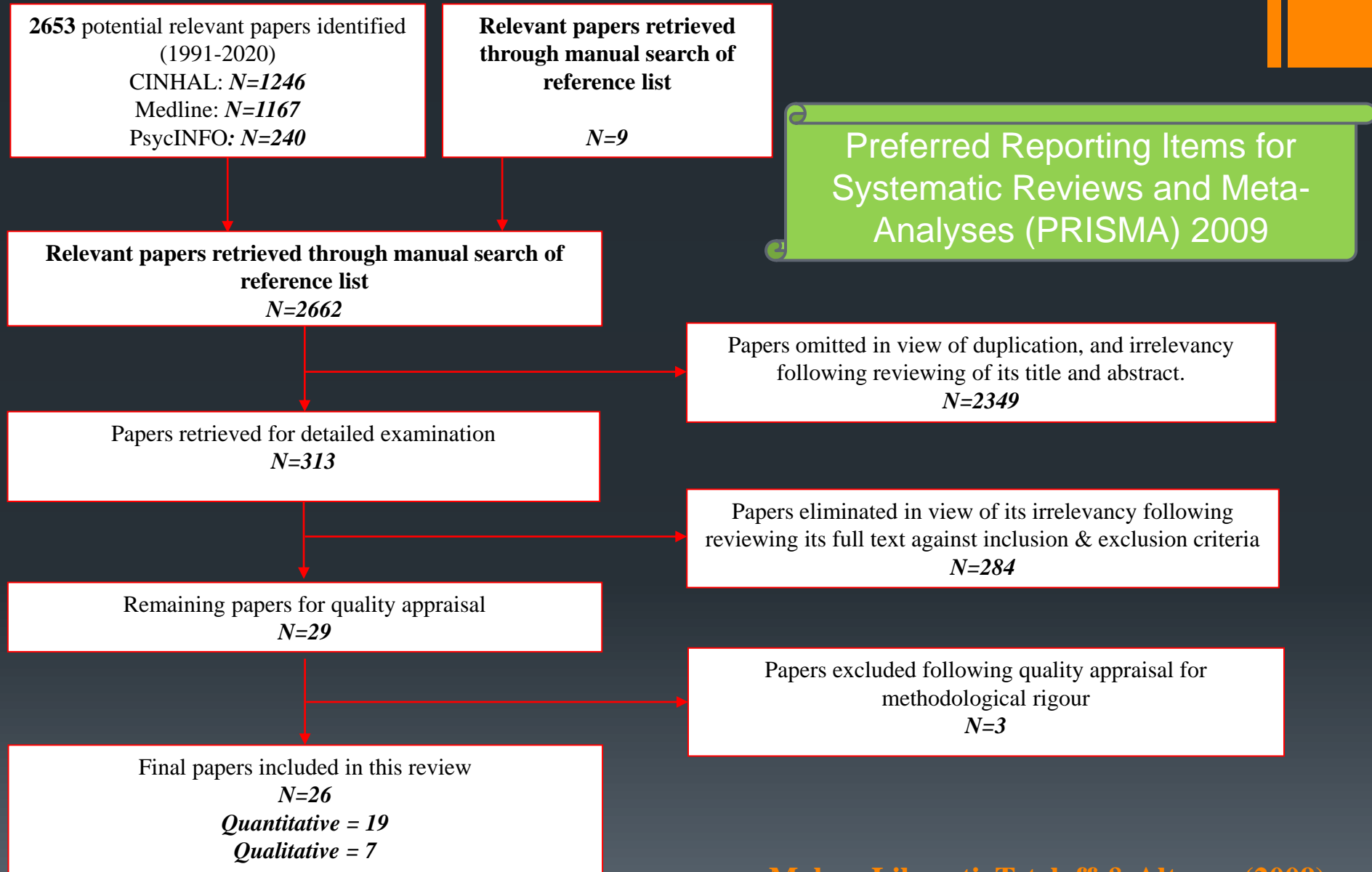
Inclusion Criteria

- Paper published in peer-reviewed journals.
- Published in English language.
- Original/ primary studies

Exclusion Criteria

- Secondary research
- Studies focusing on testing of diagnostic instrument, self-care not related to foot care, study of diabetic foot ulcer progression & development.
- Studies that examines factors of foot care from healthcare professional perspectives.


Stage 2: Literature Search






Moher, Liberati, Tetzlaff & Altman (2009).

Stage 3: Data Evaluation

- Quality appraisal of selected papers were performed independently between two authors using the Critical Appraisal Skill Program (CASP) checklists.



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CASP Checklist: 10 questions to help you make sense of a **Qualitative** research

How to use this appraisal tool: Three broad issues need to be considered when appraising a qualitative study:

- Are the results of the study valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 10 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Qualitative) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Stage 4: Data Analysis

**Data
Extraction**

**Data
Reduction**

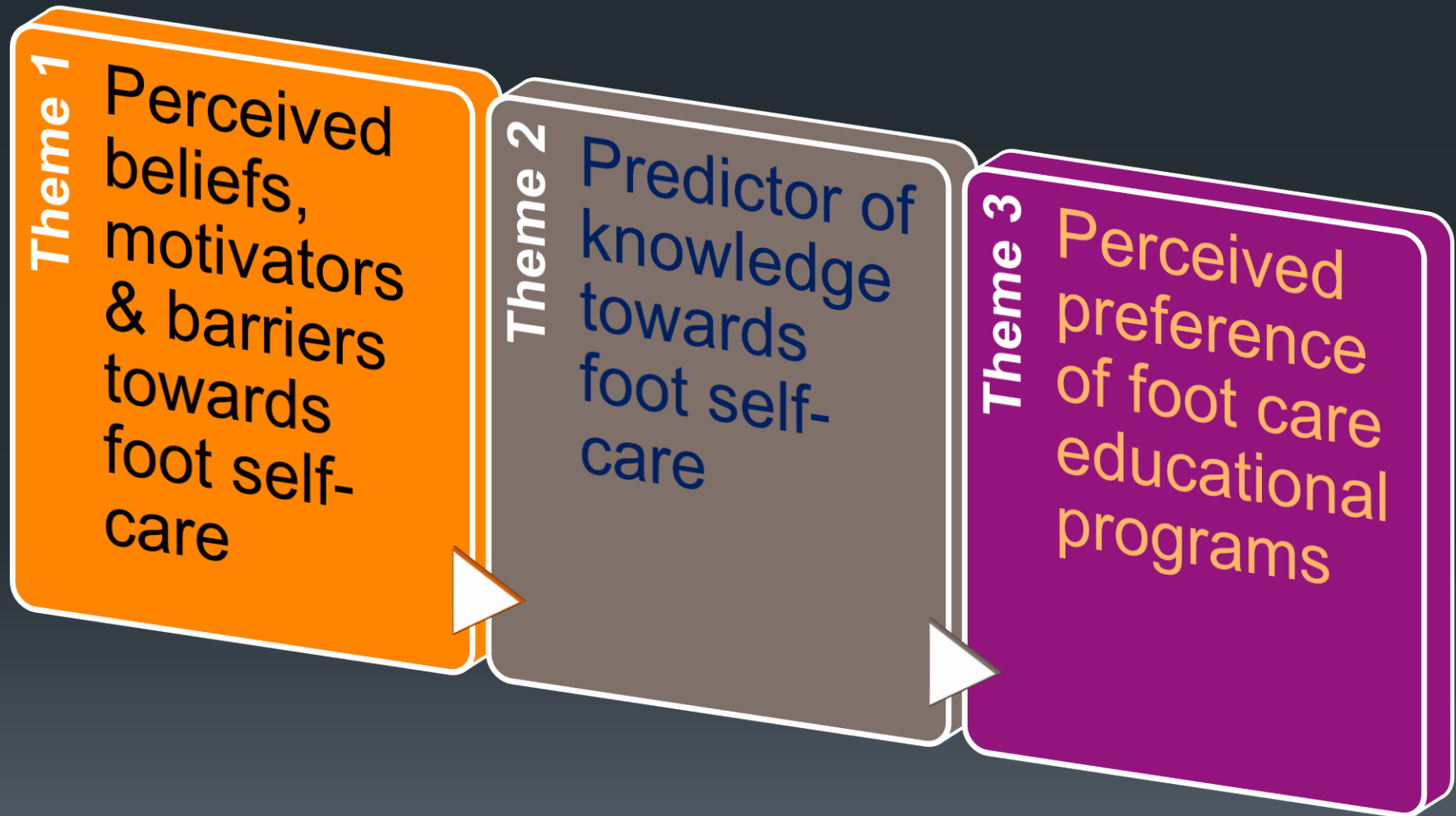
**Data
Comparison**

**Thematic
synthesis**

**Narrative
Integration**

| Author, Year, Country | Aim | Sampling & Sample Size | Research Design & Method | Analysis | Findings | Quality Appraisal |
|--|--|--|---|---|---|---|
| Chellan, Srikumar, Varma, Mangalanandan, Sundaram, Jayakumar, Bal & Kumar (2012). India | To study causal relationship between knowledge, attitude and practice on Diabetic Foot Care (DFC) between diabetic patients with and without Diabetic Foot Ulcer (DFU); and the risk factors associated with DFU | Sample: Convenience Sampling <ul style="list-style-type: none"> • Patient with diabetic foot ulcer ($n=103$) • Patient without diabetic foot ulcer ($n=100$) | Research Design: Cross-Sectional Design Method: Interview-based survey | SPSS software version 17, use of Chi-Square to compare the KAP scores and risk factors for development of foot ulcer between patients with and without DFU. | <ul style="list-style-type: none"> • Patients without DFU had good knowledge on Diabetic foot care (DFC) as compared to those with DFU (86% vs 69.9%). • Incidence of DFU was observed to be lesser for patients who practice Diabetic foot care (9%) than those not practicing (39.8%). • An inverse relationship between ↓ DFU & ↑ foot care knowledge & practice. Education should focus on a proper foot care practice and lifestyle modifications for preventing DFUs | <ul style="list-style-type: none"> • Cross-sectional study as research design matches the aim and title of the study given it is an assessment of current knowledge & attitude in foot self-care. • Sample size between both groups are equally represented. Statistical power was not mentioned. • Use of existing validated tool was acceptable; a pilot study conducted would enhance validation of its use for other study. • Chi-square test is appropriate to investigate differences between categorical variable (Polit & Beck, 2014) |

Stage 5: Data Presentation



Results

Theme 1: Perceived beliefs, motivators & barriers towards foot self-care

- Four studies reported that patients who had perceived diabetic foot self-care as unimportant and was of lower priority as compared other self-care demands would undermine their commitment and compliance to practice foot care.

(Anders & Smith, 2010; Harwell et al., 2001; Guell & Unwin, 2015; Searle et al, 2008)

- Five studies revealed that patients who hold beliefs on the positive benefits of foot self-care would positively influence their motivation and commitment to foot care behavior.

(Beattie, Campbell, Vedhara, 2014; Gale et al., 2008; Hjelm, Nyberg, Apelqvist, 2003; Vedhara, Beattie, Metcalfe, 2012; Wong et al, 2005)

- Positive beliefs towards foot self-care were centered on recognizing the significance of foot care to promote healthy feet and to prevent progression to diabetic foot complication and this would contribute to their translation to actual actions such as practicing foot care daily and seeking of immediate medical treatment for their foot injuries.

(Chithambo & Forbes, 2015; Gale et al., 2008; Hjelm, Nyberg, Apelqvist, 2003; Vedhara, Beattie, Metcalfe, 2012)

Results

Theme 1: Perceived beliefs, motivators & barriers towards foot self-care

- Studies reported how the patients' cultural beliefs would play as a major influence (positive) towards their foot care behavior.
(Harvey & Lawson, 2009; Indrayana et al., 2019)
- Three studies reported how factors such as patient's educational level, family support, age would play a critical motivators to influence their foot care behavior.
(Harwell et al., 2001; Li et al., 2014; Sari et al., 2020)
- Three studies revealed how patient's perceptions of their illness e.g. consequences, treatment control would serve as a positive reinforcement to foot care behavior, while two studies had reported otherwise.
(Abubakari et al., 2011; Beattie, Campbell & Vedhara, 2014; Foster & Lauver, 2014; Gale et al., 2008; Indrayana et al., 2019)
- Studies ($n=8$) revealed the relationship between patients' perceived barriers and their foot care behavior. Barriers towards practicing of foot self-care as identified by diabetic patients were associated with, (1) physical disability e.g. visual impairment and difficulty reaching the feet, (2) cognitive limitations e.g. knowledge and skill deficit, poor memory (3) inadequacy of teaching content and poor quality of education.

(Anders & Smith, 2010; Chithambo & Forbes, 2015; Gale et al., 2008; Harwell et al, 2001; Marchand, Ciancura, Griffe & 2012; Pollock et al, 2004; Johnson et al, 2006; Olson et al, 2009)

Results

Theme 2: Predictor of knowledge towards foot self-care

- Studies ($n=9$) reported that knowledge is a significant determinant leading to its translation and adherence of actual practices.
- Six studies reported that patients who possess knowledge towards various aspects of diabetic foot self-care was found to positively influence foot care behavior among patients with diabetes.
(Chiwanga & Njelekaw, 2015; Li et al., 2014; Indrayana et al., 2019; Karadağ et al., 2019; Liu et al., 2020; Pollock et al., 2004)
- Patient education was found to be an important factor to facilitate their acquisition of knowledge in necessary skills of foot self-care and is imperative for instilling modification and motivation of behaviour towards transformation and adherence of actual practices.
(Chiwanga & Njelekela, 2015; Kim & Han, 2020, Schmidt, Mayer & Panfil, 2008)

Results

Theme 2: Predictor of knowledge towards foot self-care

- Four studies revealed that good knowledge of diabetic foot care was not associated with compliance to foot self-care practice for some patients.
(Abubakari et al., 2011; Abu-Qamar, 2014; Chellan et al., 2012; Olson et al., 2009)
- Reasons for this is due to lack of acceptance of foot care practice owing to lack of symptoms, as well as possessing of knowledge would not necessarily implied that patients have the motivation and self-efficacy to translate into behavioral modification of performing foot self-care.
(Abubakari et al., 2011; Johnson, Newton, Jiwa & Goyder, 2005)

Results

Theme 3: Perceived benefits of foot care educational programs & materials

- Studies ($n=4$) who examined the efficacy of foot care education in term of methods of delivery had revealed mixed findings.
- Two studies reported that patients who received their diabetic foot education in group had better improvement in knowledge and behaviour towards foot self-care as compared to one-to-one teaching
(Nemcová & Hlinková, 2013; Vedhara, Beattie, & Metcalfe, 2012)
- Conversely, two studies highlighted how their patients had found one to one foot education to be more beneficial in supporting their knowledge acquisition and foot care behavior.
(Burnside et al., 2002; Vatankhan et al., 2009)

Results

Theme 3: Perceived preference of foot care educational programs

- Studies ($n=4$) examined the effect between numbers and intensity of diabetic foot education towards supporting their commitment to foot care practice.
- Two studies reported how patients would perceived having to receive foot education in multiple sessions would be beneficial as compared to having a single session so as to recap their learning and to drive behavioural modification towards foot self-care practice. (Johnson et al, 2006; Vedhara et al., 2012)
- Additionally, two studies highlighted how their patients reported intensive foot care education was in favour of increasing knowledge of foot self-care, hence enhancing its compliance of practice as compared to conventional foot education. (Barth et al., 1991, Lincoln et al., 2008)

Results

Theme 3: Perceived preference of foot care educational programs

- Studies ($n=4$) examined the effect of educational materials towards promoting foot care behavior in patients with diabetes yielded mixed findings.
- Goettl & Keast (2005) revealed how patients found the educational video to be effective in enhancing their knowledge and foot care behavior while Gravely et al (2011) reported how provision of both educational video and written materials is more beneficial in promoting knowledge gaining and behaviour change towards foot care practice.
- Additionally, Kruger & Guthrie (1992) revealed how patients reported the combination of educational video and hands-on teaching would contribute to better foot care practice in term of compliance to daily foot self-care such as inspecting and maintenance of feet hygiene. Conversely, Baba et al (2015) reported how written materials were found to be more effective as compared to audio-visual education towards improving patient's foot health.

Discussion

1. This integrative review examines the interplays of various determinants that could influence individual's adherence towards diabetic foot self-care practices that was previously been examined and addressed in isolation.
2. Despite the significant of foot care towards optimized management of diabetic foot complications, this review however reported that patients perceived that foot care and its related education was often neglected by health professionals and this lack of focus could negatively influenced their perception of this aspect of self-care and their commitment to do so.
(Barshes, Sigireddi & Wrobel, 2013; De Berardis et al., 2005; Liu et al., 2020)
3. The importance of health education cannot be underestimated given that this serve as a platform for patients to acquire necessary knowledge and skills to perform proper foot care, and for them to understand the rationale(s) behind the need for their long-term commitment in self-care to promote and sustain behavioural change.

(Bakker, Apelgyist & Schaper, 2012)

Discussion

4. A focus of knowledge and education alone would not be adequate to influence an individual's commitment towards practicing of foot self-care.
(Chellan et al., 2012; Indrayana et al., 2019)
5. It is imperative for nurses and healthcare professional to identify, understand and acknowledge various determinants of motivations in order to achieve a greater and long term impact of behavioral changes in patients towards adhering to foot care practice.
(McInnes, Jeffcoate, Vileikyte, 2011; Nemcová & Hlinková, 2013)
6. Lastly, the findings of this review further highlighted clinical implications concerning the future direction to be taken by healthcare professionals to recognize that diabetic foot education is a serious intervention and that this component would deserve equal attention as other diabetes-related topics to be shared to all patients, preferably at the earlier stage of their diagnosis to cultivate their positive mindsets about foot care to drive their better commitment towards this practice.

Recommendations

1.

- Firstly, this calls for the need for healthcare professionals to place increased emphasis on foot care education and to incorporate this essential component into diabetic educational programme.

2.

- Secondly, the need for healthcare professionals to be cognizant with individual patients' needs, values, beliefs, self-efficacy and motivation level towards foot care when designing and delivering patient education to drive its effectiveness in influencing behavioral changes.

3.

- Lastly, it is also imperative for healthcare professionals to plan and tailor individualize diabetic foot educational programme that would take into considerations of the various psychological and cultural factors that underpins self-care behavior of an individual patients.



Thank You

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