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CONSTIPATION IS CASTING A SHADOW OVER EVERYDAY LIFE – A SYSTEMATIC REVIEW ON OLDER PEOPLE'S EXPERIENCE OF LIVING WITH CONSTIPATION

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Abstract

Aims and objectives: To explore and summarize best evidence of how constipation affects the daily living of older people from their own perspective. Furthermore, to assess how interventions aimed at treating constipation in older people affect patient-reported outcome such as quality of life.

Background: Constipation is a common and overlooked problem with an impact on everyday life, especially among older people. Older people seem to have individual preconceptions on constipation which can influence the strategies used to prevent and treat constipation.

Design: A systematic review, integrating findings from both qualitative and quantitative studies.

Method: Systematic searches were carried out in PubMed, CINAHL, PsycINFO and Embase on the 31th of July 2014. A search strategy was constructed with key concepts identified using PICO to identify quantitative studies and PIC(o) to identify qualitative studies. Search terms included constipation, elderly, aged, elderly people, aged people, quality of life, patient experience, patient perspective, meaning, emotion, psychological. Reference lists were searched manually.

Results: A total of nine studies were included in the review, five quantitative and four qualitative. Three main themes crystallized from the results of the included studies: Bodily experiences, Everyday life shadowed by constipation and Adverse psychological effects.

Conclusion: Constipation among older people was connected to subjective and comprehensive experiences. It had a negative impact on physical and mental well-being as well as the social life of older people. The review also showed that older people had individual and personal strategies, based on their own beliefs.

Relevance to clinical practice: Healthcare professionals need to be aware of the experiences of living with constipation as well as the range of strategies used by patients to prevent and treat constipation. The patient perspective on constipation needs to be integrated in the strategies and actions carried out by healthcare professionals.

Key Words: Constipation, patients´ experiences, older people, aged, quality of life, patient perspective, everyday life.

What does this paper contribute to the wider global clinical community?

- Constipation is a common clinical condition, and this review describes the major impact it has on physical, mental and social well-being.

- Constipation is often overlooked in health care even though elimination of body waste is a fundamental human need. This may be a consequence of constipation being a taboo. Our review explores how talking about bowel function with relatives and health professionals is difficult due to issues of intimacy and privacy.

- Older people have individual definitions of and strategies on managing constipation. Health professionals need to take the unique understanding of the individual into account when planning and carrying out actions to prevent or treat constipation in the individual patient.

INTRODUCTION

Constipation is a common problem among older people, and it has a high impact on physical as well as social and psychological well-being (Mugie *et al.* 2011). Persons suffering from constipation may be reluctant to talk about it, as it is an issue of privacy and intimacy (Lämås *et al.* 2015). Constipation is frequently overlooked in healthcare, and health professionals seldom pay sufficient attention to it until it has become a severe problem for the individual (Hill *et al.* 1998).

The most frequently reported physical symptoms of constipation are abdominal discomfort and pain, straining, hard stool, infrequent bowel movements, bloating and nausea (Johanson & Kralstein 2007). The association between suffering from constipation and quality of life has been assessed in numerous studies, showing that persons with constipation generally have an impaired quality of life (Norton 2006, Belsey *et al.* 2010). A population-based study on a group of people who suffered from constipation symptoms (n=557), reported that among the respondents, 52% stated that symptoms of constipation affected their quality of life (Johanson & Kralstein 2007). Furthermore, 73% of the respondents reported social or personal impairment as a result of constipation (Johanson & Kralstein 2007). A review found that the decrease in health related quality of life observed in adults with constipation was similar to the decrease experienced by persons suffering from osteoarthritis, rheumatoid arthritis, chronic allergies and diabetes (Belsey *et al.* 2010).

A reliable estimate of the prevalence of constipation in the general population is lacking due to variation in the definitions of constipation and the study design. The prevalence in the general population ranges from 2-28% in the western countries (Higgins & Johanson 2004, Wald & Sigurdsson 2011), increasing with age (Spinzi *et al.* 2009). A systematic review including 68 studies concerning a population of adults aged 60-101 years, found a median prevalence of constipation between 16% and 33.5% (Mugie *et al.* 2011). Moreover, a recent study identified symptoms of constipation in 44% of older patients (75+) being admitted acutely to hospital. Out of these older people, 43% developed signs of constipation during the first three days of their hospital stay (Noiesen *et al.* 2014).

There is no generally accepted international definition of the diagnosis of constipation. The existing definitions include symptoms like reduced frequency of defecation, hard and dry stool, and difficulties in defecation (Spinzi *et al.* 2009, Dal Molin *et al.* 2012). Yet, functional constipation is defined by the internationally acknowledged Rome III criteria as having ongoing symptoms for at least three months during the previous six months (Dal Molin *et al.* 2012). However, persons tend to make their own individual definition of constipation based on a subjective assessment. One study found that individual definitions on constipation were based on how the participants experienced their own bodies. The older people decided for themselves in response to that experience, if they were constipated or not (Annells & Koch 2002a). Another study revealed that older people might be met with different definitions of constipation, depending on whether health professionals viewed constipation from a textbook perspective or from a combination of a textbook and patient perspective (Mihaylov *et al.* 2008). The way in which the individual perceived constipation was influenced by bodily experiences and individual perspectives on causal explanations and this individual perception could influence the strategies used to prevent and treat constipation (Annells & Koch 2002a, Annells & Koch 2002b, Mihaylov *et al.* 2008).

To date, research has provided evidence that constipation is a common problem especially among older people. However, there is a lack of synthesis of best evidence about how constipation impacts the daily life of the elderly viewed from their own perspective. The findings of this systematic review will help health professionals to understand and integrate older people´s perspective when preventing and treating constipation.

Aims

The objective of this systematic review was twofold. First, we aimed to explore and summarize how constipation affects the daily living of older people from their own perspective. Additionally, we wanted to assess how interventions aimed at treating constipation in older people, affect patient-reported outcome such as quality of life.

METHODS

Design

This systematic review was conducted according to the PRISMA guidelines (Moher *et al.* 2009). We integrated findings from both qualitative and quantitative studies as it has been shown that excluding any types of evidence based on the methods used, could probably have implications for results and clinical practice. When synthesizing a variety of data sources we are given the opportunity to answer the identified research question in a broader perspective (Goldsmith *et al.* 2007). In this review qualitative and quantitative studies were assessed in parallel processes and relevant data were integrated in a joint synthesis of results presented as themes emerging from the results of the included studies (Dixon-Woods *et al.* 2005, Sandelowski *et al.* 2012).

Search methods

Systematic searches were carried out in PubMed CINAHL, PsycINFO and EMBASE on the 31th of July, 2014. A search strategy was formulated with key concepts identified using the PICO question for identifying quantitative studies and the PIC(o) question for identifying the qualitative studies (Textbox 1) (Moher *et al.* 2009, Joanna Briggs Institute 2011).

Through the PICOs we identified essential search-terms. Relevant synonyms and associated terms were added and the searches were adjusted to fit the specific database. The searches were carried out using a combination of subject headings and text words; exemplified by the following PubMed search:. (((("Constipation"[Major]) OR constipation[Title])) AND (((elderly OR aged OR "elderly people" OR "aged people")) OR "Aged"[Mesh])) AND ((("Quality of Life"[Mesh]) OR ("quality of life" OR "patient experience" OR "patient perspective" OR meaning OR emotion)) OR "Stress, Psychological"[Mesh:noexp]). The searches were conducted by the first two authors (NT, LM) and supervised by a research librarian. Reference lists were searched manually for additional relevant references.

Study selection

The first two authors (NT, LM) examined titles and abstracts of the studies found in the searches. In cases where the studies could not be fully assessed by the abstract, full text versions were retrieved and read. A list of potentially relevant papers was created and two authors (NT, LM) independently assessed these papers against the inclusion and exclusion criteria described in the protocol. The qualitative studies were eligible for inclusion if they investigated the experience of being constipated. The inclusion criteria for the quantitative studies were studies examining the effect of non-surgical interventions aimed at preventing or treating constipation. Furthermore, the effect should be monitored with patient reported outcome in terms of well-being. Studies were excluded if the participants suffered from Inflammatory Bowel Disease. Finally the participants should be > 65 years of age or described as older or elderly, and only studies published in English or Scandinavian languages were included.

After discarding duplicates, all eligible studies were assessed using the critical appraisal tools developed by the Joanna Briggs Institute. We used MAStARI (Meta-Analysis of Statistics Assessment and Review Instrument) for the quantitative studies and QARI (Qualitative Assessment and Review Instrument) for the qualitative studies (Joanna Briggs Institute 2011). Using this set of tools can make the assessment more objective and transparent. The authors (NT, LM) did the quality assessment independently, and all results were compared for consistency. In case of disagreement, the study was discussed with the third author (AKD) until consensus was reached.

Data collection

Data extraction was performed by two authors using the standardized data extraction tools from the Joanna Briggs Institute (Joanna Briggs Institute 2011). Results from the qualitative and quantitative studies were assessed in parallel processes, and joined in themes. In order to construct the themes we initially included the relevant study findings reported in the papers under the labels “results” or “findings”. All results were retracted verbatim from the papers in to a separate document. The next step was to identify themes, which originated from the data and were consistent with the aim of the review (Dixon-Woods *et al.* 2005, Goldsmith *et al.* 2007). The process of constructing themes was conducted in collaboration by all three authors. The findings were summarized narratively under each thematic heading, and the findings were supported by statistical results from the quantitative studies and quotes from the qualitative studies, respectively.

RESULTS

A total of 12 studies were identified, of which three were excluded, leaving five quantitative and four qualitative studies (Figure 1). Reasons for exclusion were: Lack of analysis of the effectiveness of the intervention due to low recruitment rates (Speed *et al.* 2010), uncertainty whether the outcomes were associated to the effect of constipation treatment or the relief of lower urinary tract symptoms (Charach *et al.* 2001), and lack of clear description of the methodology in terms of using the same data material in two papers (Annells & Koch 2002a, Annells & Koch 2002b). The nine included studies are presented and summarized in Table 1. The assessment of the quality of the included studies is presented in Table 2 & 3. It was not possible to perform a meta-analysis for the quantitative studies due to large methodological and clinical heterogeneity.

Three main themes emerged from the results of the included studies: 1. Bodily experiences, 2. Everyday life shadowed by constipation and 3. Adverse psychological effects.

Bodily experiences

The older people experienced a range of bodily symptoms, such as physical symptoms like abdominal pain, cramps, excessive flatulence and rectal bleeding during defecation (Koch & Hudson 2000, Mihaylov *et al.* 2008). In addition to the physical symptoms, participants described bodily sensations like feeling uncomfortable (Mihaylov *et al.* 2008), not feeling well (Koch & Hudson 2000) and being bloated or blocked (Mihaylov *et al.* 2008). These bodily sensations were described by participants as being "*bunged up*" (Mihaylov *et al.* 2008 p.30) and being "*bloated as if pregnant*" (Mihaylov *et al.* 2008 p. 30).

Another bodily sensation, which was linked to the individual definition of constipation among participants, was whether or not they were able to feel an urge to defecate (Annells & Koch 2002a, Mihaylov *et al.* 2008). Among participants trying to define the symptoms of constipation, the second most frequent description (30%) was "*cannot defecate when feeling urge*" (Annells & Koch 2002a). A participant explained the sensation of having an urge to go, but not being able to make a bowel movement: "*Well just you wanted to go to the toilet [a-ha], you know, but you just couldn´t [you couldn`t go], that was the main thing*" (Mihaylov *et al.* 2008 p. 30). Contrary to this, other participants did not feel any urge even though they felt that there was a stool waiting to be passed. A participant described it as: *"…I get a bearing down feeling and I need the toilet but I don´t get that urge…..So I´m hanging about waiting. I'm needing to go, needing to go. I'm hanging about waiting to get an urge to actually go*" (Mihaylov *et al.* 2008 p. 31).

The variety of bodily symptoms leads to broad descriptions, when defining constipation (Annells & Koch 2002a). Despite the big variety in the symptoms, in one study older people most often (40%) mentioned the infrequency or lack of regularity in bowel movements when defining their symptoms of constipation (Annells & Koch 2002a p. 606). Generally, the participants were preoccupied with the regularity in the number of days between bowel movements (Koch & Hudson 2000, Mihaylov *et al.* 2008). Some participants considered themselves being constipated, if they did not have daily bowel movements (Koch & Hudson 2000, Mihaylov *et al.* 2008). Consequently, striving for having regular bowel movements often lead to taking laxatives, as described by a female participant: *"I like to have them once a day if possible so I take the real old thing and it´s genuine, I have Epsom Salts, I've got to watch myself and I do have bother. I like relief. If I didn't go to the toilet every day I would have a problem and it would bother me*" (Koch & Hudson 2000 p. 521). Another participant described how having daily bowel movements affected his well-being: "*You don't seem so heavy and so bloated, you just seem more refreshed and more light, not lighter, but more light in yourself*"(Koch & Hudson 2000 p. 521).

In three of the five interventional studies, the participants experienced improvement in the satisfaction subscale of Patient Assessment of Constipation Quality of life questionnaire (PAC-QOL) (Muller-Lissner *et al.* 2010, Li *et al.* 2014, Nour-Eldein *et al.* 2014), and in one pilot study they did not (Li *et al.* 2012). The satisfaction subscale of PAC-QOL is one of four subscales, and it focuses on satisfaction with frequency and regularity in bowel movements as well as satisfaction with treatment (Marquis *et al.* 2005). In a multicenter randomized controlled trial testing safety and tolerability of Prucalopride (n=300), the proportion of patients who scored more than one point higher on the satisfaction subscale was significantly higher in the group receiving 1 mg Prucalopride during the four weeks of intervention (48.5%) compared to the placebo group

(25.8%)($p \leq 0.05$)(Muller-Lissner *et al.* 2010). In a randomized controlled trial testing auricular acupressure (n=81) an improvement was found in the subscale of satisfaction in the intervention group compared to the placebo group at the 10th (p= 0.016) and 20th day (p= 0.016) of follow-up respectively (Li *et al.* 2014). Improvement in the satisfaction subscale was also identified in a recent pre-post intervention study intervening with three sessions of group-based health education (n=23); the mean score changed from 5.3 (SD 1.7) to 10.6 (SD 2.5) ($p<0.001$)(Nour-Eldein *et al.* 2014). Marteau et al. used a visual analog scale (VAS) to assess satisfaction with digestion among the participants in a randomized controlled trial testing chicory inulin (p=50) (Marteau *et al.* 2011). They found a significant increase in the satisfaction score in the intervention group between baseline (4.93(SD 2.7)) and the first follow-up after 14 days (6.96) (SD 2.15)) and second follow-up after 28 days (6.74(SD2.01))($p< 0.01$). A similar effect was found in the placebo group between baseline and the second follow-up ($p<0.01$)(Marteau *et al.* 2011). A randomized clinical trial by Li et al. testing auriculotherapy for a period of three weeks (n=39), did not find any significant effects in the satisfaction subscale of PAC-QOL (Li *et al.* 2012).

Everyday life shadowed by constipation

Being constipated was connected to subjective, personal and comprehensive experiences, which had a negative influence on the everyday life of older people (Wolfsen *et al.* 1993, Koch & Hudson 2000, Annells & Koch 2002a, Mihaylov *et al.* 2008). In one study the participants talked about constipation in a holistic perspective, meaning that constipation was not only the presence of physical symptoms, it actually affected a variety of dimensions in their lives (Wolfsen *et al.* 1993). In one case a participant expressed how constipation was more troublesome for him than his problems with cardiovascular diseases, impaired vision and prostate problems. Constipation was the second worst problem, only surpassed by the neuropathic pain in his legs (Wolfsen *et al.* 1993). Moreover, another participant described constipation as: "*It's just fate*" (Koch & Hudson 2000 p. 522).

Living with constipation caused loneliness and social isolation for some of the participants (Koch & Hudson 2000, Annells & Koch 2002a, Mihaylov *et al.* 2008). One participant described how constipation casted a shadow over his everyday living, and made him preoccupied with constipation: "*Your life revolves around your bowels and being close to a toilet all times*" (Koch & Hudson 2000 p. 522). The need to be close to a toilet and the bodily symptoms drove some participants to self-imposed isolation in terms of avoiding social activities and travelling (Koch & Hudson 2000, Annells & Koch 2002a, Mihaylov *et al.* 2008). A participant described how the symptoms of constipation limited his/her social life: "*Erm, you're tired, you have the pain, pain's the worst. You can't go out, or you don't feel comfortable going out. You tend to lie about more, you know*" (Mihaylov *et al.* 2008 p. 33).

Some studies described how actions to either prevent or treat constipation occupied the daily living of older people (Wolfsen *et al.* 1993, Koch & Hudson 2000). Most of older people were aware of the advice concerning fluids, diet and exercise (Koch & Hudson 2000, Annells & Koch 2002a, Mihaylov *et al.* 2008), but some were limited in performing these activities due to economic, social and physical constraints (Annells & Koch 2002a). Even though the most common way to deal with constipation was the use of laxatives, older people tried a range of other actions based on advice from health professionals, friends or, most often, developed by themselves (Wolfsen et al. 1993, Koch & Hudson 2000, Annells & Koch 2002a, Mihaylov et al. 2008). In one study the most frequently used technique was manual removal or fragmentation of the stool; a painful and potentially harmful procedure, which the older people had worked out by themselves (Annells & Koch 2002a p. 608).

Adverse psychological effects

Periods with constipation affected the mental well-being and quality of life among the elderly. The influence of constipation on their lives was emphasized by the terms used to describe the condition: *"Terrible," "awful," "horrible," and "miserable"* (Wolfsen *et al.* 1993 p.856). The studies pointed out a spectrum of feelings, which were activated in different ways and maintained by the presence of constipation (Wolfsen *et al.* 1993, Annells & Koch 2002a, Mihaylov *et al.* 2008). The feelings were twofold; either mind-related like loneliness, hopelessness, anxiety, despair (Koch & Hudson 2000) being worried, depressed, miserable, down and apathetic (Mihaylov *et al.* 2008) or outward-related such as being grumpy, irritable and annoyed (Mihaylov *et al.* 2008).

Some older people found it difficult to explain what it felt like to be constipated but it always included a message of not feeling well (Mihaylov *et al.* 2008). It was a feeling of discomfort; a feeling of not being you, and feeling *"not right"* (Annells & Koch 2002a, Mihaylov *et al.* 2008). It ranged from a participant describing it as: "*It was like it took the edge off you, you see, you were that bit lethargic at times*" (Mihaylov *et al.* 2008 p. 33) to the experience of feeling: "*Tired and sick and fed up*" (Mihaylov *et al.* 2008 p. 33). Ultimately, for some participants the experiences of being constipated lead to suicidal considerations (Wolfsen *et al.* 1993, Mihaylov *et al.* 2008), as told by a participant: *"A couple of years ago I had a most dreadful, horrific and I did feel suicidal, because I thought it was never…I felt, um, I cannot go on like this [right], and yet, em, that the pain then was really horrific, it was absolutely shocking"* (Mihaylov *et al.* 2008 p. 33).

Only one pre-post intervention study found significant improvement in the subscale of worries in PAC-QOL after the intervention of group-based intervention program focusing on lifestyle modification in relation to constipation (14.4 (SD 11.8) vs. 6.7 (SD 6.1) ($p=0.004$)) (Nour-Eldein *et al.* 2014). The subscale of worries included 11 questions about being worried or irritable about the condition, being afraid it might get worse and feeling less confident or not in control (Marquis *et al.* 2005). None of the studies found improvement in the psychosocial subscales after testing of interventions (Muller-Lissner *et al.* 2010, Li *et al.* 2012, Li *et al.* 2014, Nour-Eldein *et al.* 2014).

DISCUSSION

This review revealed that living with constipation has an impact on everyday life of older people, with regard to physical, psychological as well as social aspects. These aspects do not only appear independently, but they are interconnected and reinforce each other, revealing a very complex picture of the influence of constipation. This means that various areas of the daily living are affected for older people. Some of the interventional studies found an improvement in the participants' degree of satisfaction with treatment and regularity in bowel movements in favor of the intervention. However, only one minor study found improvement in the amount of worries among older people after the intervention.

Being preoccupied with attaining regular and preferably daily bowel movements was central to the older people in the present review. They would regulate the treatment strategies to obtain this goal, and they described it as an essential aspect of their well-being. Other studies also found that regularity in bowel function was a key aspect in the life of persons with constipation (Johanson & Kralstein 2007, Dhingra *et al.* 2013). In a web-based survey among adults with functional constipation, 75% of the respondents assessed infrequent bowel movements as a somewhat, very or extremely severe symptom (Johanson & Kralstein 2007). Irregular bowel function is one of the main symptoms of constipation, when patients define their symptoms. Some people even equate lack of daily defecation with constipation (Koch & Hudson 2000, Mihaylov *et al.* 2008). However, according to the Rome III criteria, defining the diagnostic criteria of functional constipation, infrequency in bowel function is only one of several criteria, and infrequency is only registered as a symptom of functional constipation if there are fewer than three evacuations a week (Spinzi *et al.* 2009). Consequently, the subjective dimension of infrequency as a symptom of constipation may not be recognized by health professionals using the criteria of Rome III, and accordingly only 80% of respondents, considering themselves as being constipated, fulfilled the criteria of Rome II and III (Wald *et al.* 2007). In their interaction with elders, health care professionals should be aware of the possible discrepancy between the physiological definition of constipation, like the elements included in Rome III and older people's subjective descriptions of symptoms of constipation. It is essential to focus on constipation as multifaceted and with individual variations, in order not to overlook a condition affecting multiple aspects of the daily living. Apart from being regarded as a severe symptom, infrequency also affected quality of life (Johanson & Kralstein 2007) and caused worries (Friedrichsen & Erichsen 2004, Dhingra *et al.* 2013). In an interview study on cancer patients with opioid-induced constipation, the participants also worried that their body would decay without a timely bowel movement (Dhingra *et al.* 2013). Furthermore, some studies have found that patient worry that the non-evacuated stools might become poisonous and toxic for their bodies (Friedrichsen & Erichsen 2004, Dhingra *et al.* 2013). This suggests that the bodily sensations that patients experience when being constipated might be interpreted in a way that could be in line with the theories underlying the concept of bodily knowledge (Heggdal 2013). Following this, the chronic condition may give rise to feelings of alienation of the body due to lack of information from nurses about symptoms of constipation and how they affect the individual. Thus, patient education in relation to constipation should cover not only solid knowledge on symptom management, but also strategies on how to support patients´ recovery with a focus on positive choices based on patients´ embodied knowledge. This suggests that nurses must seek out and take notice of patients' personal bodily knowledge so as support individual prevention strategies and solutions for managing constipation.

The present review found that constipation had a negative impact on the mental and psychological well-being among elders, and it has a severe influence on their everyday living similar to the physiological symptoms. This is in line with previous studies, who have found impaired well-being among adults with constipation (Johanson & Kralstein 2007, Belsey *et al*. 2010, Wald *et al.* 2007). In a multinational survey adults with constipation reported their general health, measured by an aggregation of the physical and mental components in SF-36 (short form health survey with 36 questions) lower than non-constipated respondents (Wald *et al.* 2007). An impaired quality of life among people with constipation was also identified in a systematic review aimed at identifying and comparing quality of life in children and adults with constipation and chronic conditions, respectively. The study showed that the quality of life among people living with constipation seemed equivalent to the quality of life in people with chronic conditions (Belsey *et al.* 2010). One of the reasons for the impaired well-being may be due to the feeling of loss of control over the body as described by participants in interviews (Friedrichsen & Erichsen 2004, Lee & Warden 2011, McClurg *et al.* 2012). Some patients with the primary diagnosis of cancer described how constipation caused psychological distress in terms of irritation, anger, frustration and stress (Dhingra *et al.* 2013). Other respondents described living with constipation as a never-ending struggle, feeling alternately tormented or relieved by the symptoms (Lämås *et al.* 2015). It seems to be a challenge to change the negative impact on the mental and psychological well-being among older people with constipation. According to the quantitative studies included in the review, interventions treating constipation improved quality of life in terms of satisfaction with treatment and bowel frequency, but none of the studies found improvement in the psychosocial subscale and only one in four studies found improvement in the subscale concerning worries.

Constipation impaired the social life of the older people in our review, which was supported by the findings of two studies describing the feeling of being angry and short-tempered (Lee & Warden 2011), or irritable and in a bad mood (Friedrichsen & Erichsen 2004) when dealing with friends and family. This made some participants avoid contact with family and friends as their mood could cause relational conflicts (Friedrichsen & Erichsen 2004). Yet another reason for social impairment may be that being constipated is a private issue not to be discussed with relatives (Friedrichsen & Erichsen 2004, McClurg *et al.* 2012), and some participants were even reluctant to talk about constipation with health professionals because of threats to intimacy (Lämås *et al.* 2015). With constipation being subject to taboo combined with constipation being manifested in various symptoms, the health care professionals may be challenged in terms of discovering and easing the condition for the individual. An earlier study discussed whether nurses tended to underestimate the significance of addressing constipation when interviewing patients. As constipation was (and still is) labeled with the term “basic nursing,” nurses may fail to understand that constipation is of course related to a basic need, but falls within a highly specialized nursing practice (Hicks 2001). However, we did not identify any clinical studies exploring this issue strongly related to how nurses view their professional and clinical role.

In line with the findings of this review, the participants with multiple sclerosis in the study of McClurg et al. (2012) experienced social limitations due to constipation, as they have to plan their everyday activities around their bowel and Lämås et al. (2015) reported that middle-age women felt controlled by constipation, as their lives were limited in terms of reluctance to engage in public and social activities as well as difficulties in handling a job (Lämås *et al.* 2015). Social limitations were also seen among healthy children and adults with constipation, in a web-based survey found that 12% of those working or at school had not attended either for an average of 2.4 days due to constipation symptoms in the preceding month (Johanson & Kralstein 2007).

The limitations of this review are the wide variety of quality in the few included studies. Some of the qualitative results were an appendix to either a literature study or quantitative studies, which limited the depth in the presentation of participant’s voices. Furthermore, some of the results of the qualitative studies were limited in robustness due to lack of quotations. The quantitative studies were too heterogeneous with regard to intervention and design, making it impossible to perform a meta-analysis.

The strengths of this review are the rigorous approach, the systematic review process and the adherence to the PRISMA guidelines. Furthermore, the inclusion of both qualitative and quantitative studies in the review made it possible to cover a research field, which is sparingly investigated. Therefore, this review contributes to the understanding on how living with constipation affects the everyday life of the individual.

CONCLUSION

On the basis of a thorough review of qualitative and quantitative data we found that constipation was connected to subjective, personal and comprehensive experiences and had an impact on physical and mental well-being as well as quality of life among older people. Furthermore, living with constipation caused loneliness and social isolation.

This review also showed that older people had individual and personal coping strategies, based on their own beliefs. The adoption of prevention strategies which include the perspective of the older, seem relevant and important, as the population prevalence of constipation is high. Furthermore, it seems important to realize that screening by ROME III, does not always capture older people who are feeling constipated. Additionally, further exploration of the concept of bodily knowledge may contribute to a different understanding of patients´ bodily sensations.

However, more robust research needs to be conducted in the future to acquire knowledge about the experience of constipation among older people as well as focus on the strategies used by older people in the prevention and treatment of constipation. Moreover, studies exploring nurses´ knowledge and views on this issue in order to identify any discrepancy between patients´ needs and professional area of interest are needed. Future interventional studies focusing on treating constipation need to use patient-reported outcome as an endpoint, as living with constipation affects a range of aspects of the individual’s well-being.

RELEVANCE TO CLINICAL PRACTICE

For older people, being constipated can impair their daily lives. Thus, it seems relevant for nurses to clarify whether the patients need help to handle bowel activity. If the patient is preoccupied with physical symptoms or worries, it could influence the ability to cooperate with nursing interventions and rehabilitation. Furthermore, a timely focus on preventing and treating constipation may shorten hospitalization and spare older people of complications such as nausea, bloating and abdominal pain.

Nurses in any specialty are in an ideal position to identify patients at risk of constipation as well as patients already being constipated. Older people's experiences of their bowel function must be acknowledged, and their beliefs and preferences must be respected and taken into account when preventing or treating constipation both in the primary and the secondary health care systems. Furthermore, health professionals must be aware of the fact that patients with chronic constipation are likely to be preoccupied with obtaining daily bowel movements.

The older people in this review carried out a range of actions based on advice from health professionals, friends or most frequently, developed by themselves. To support these actions the patients need privacy, and understanding from the healthcare professionals, which requires a good dialogue between the patient and the healthcare professionals. Clinical nursing ought to be attentive to the bodily knowledge of the patients with constipation in order to include and support the individual in the personal prevention strategies.

CONFLICTS OF INTEREST

The authors did not have any conflicts of interest in the preparation of the paper. The authors initiated the study, and received no funding.

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Table 1 Outcomes of the included studies

Quantitative studies				
Study	**Methods**	**Participants**	**Intervention**	**Outcomes**
Muller-Lissner, Rykx *et al.* (2010)	International multi-center, parallel-group, placebo-controlled Phase III trial.	300 patients (65+ years)	Randomized to: (1) Prucalopride 1 mg (2) Prucalopride 2 mg (3) Prucalopride 4 mg (4) Placebo Duration: four weeks	The proportion of patients who scored more than one point higher on the Patient assessment of constipation – quality of life (PAC-QOL) subscale ”satisfaction” was significantly higher in the group receiving 1 mg (48.5%) compared to the placebo group (25.8%) ($p \le 0.05$). 42% of patients receiving 1 mg Prucalopride and 39% of patients receiving 4 mg Prucalopride rated their treatment as ‘quite a bit effective’ or ‘extremely effective’ compared with 16% of patients receiving placebo ($p \le 0.05$).
Marteau, Jacobs *et al.* (2011)	Parallel double-blind placebo-controlled trial	50 elderly people (+50 years)	Randomized to: (1) 15 g chicory inulin (2) Placebo Duration: four weeks	“Satisfaction with digestion” measured on a visual analog scale is significantly higher in the intervention group from the 1st To the 2nd and from the 1st to the 3rd follow-up ($p < 0.01$). There were no significant differences between the intervention and the control group at any of the follow-ups.
Li, Lee & Suen (2012)	Single blind randomized, controlled trial A pilot study	39 residents living in a residential care home (+65 years)	Randomized to: (1) Acupuncture (2) Placebo Duration: Three weeks	No significant difference in PAC-QOL between the intervention and the placebo group.
Li, Lee & Suen (2014)	Randomized placebo-controlled trial	81 residents living in a residential care home (+65 years)	(1) Experimental (acupuncture using auricular plasters with magnetic pellets) (2) Placebo (acupuncture using auricular plasters with Semen Vaccariae) (3) Usual care (only auricular plasters) Duration: ten days	There were significant differences between the intervention group and the placebo group in the subscale "satisfaction" in the PAC-QOL at the follow-up on day 10 ($p = 0.016$) and day 20 ($p = 0.016$).
Nour-Eldein, Salama *et al.* (2014)	Pre-post intervention study	23 older people from two nursing homes (+60 years)	Three sessions of group discussions to educate the participants about dietary patterns, fluid intake, regular physical activity, and use of laxatives	Significant improvement in PAC-QOL – subscale “satisfaction” (from mean 5.3 (SD 1.7) to mean 10.6 (SD 2.5) ($p < 0.001$) and subscale “dissatisfaction” (from mean 27.8 (SD 22.5) to mean 12.1 (SD 11.5) ($p < 0.001$). The subscores ”physical” and ”worries” changed significantly from pre- to post-evaluation ($p < 0.001$ and $p = 0.004$). No significant changes in the subscore “psychological”.

Qualitative studies				
Study	**Methods**	**Participants**	**Phenomena of interest**	**Outcomes**
Wolfsen, Barker & Mitteness (1993)	Semi-structured individual interviews	211 older people (65+ years), clients in Home Health Care Agency	To examine the meaning and context of constipation in frail elders.	Constipation was a holistic experience. People did not just have constipation, they suffered from it. The respondents placed constipation within a context that left no doubt about its importance in their lives.
Koch & Hudson (2000)	Semi-structured individual interviews	6 community-dwelling people, 3 male and 3 female with a mean age of 84 years	Older people's perceptions of constipation and the measures taken if they believed themselves to be afflicted by this condition.	Important and ideal to have daily bowels movements. Felt their health was compromised when constipated. For the respondents, the experience of constipation and the active pursuit of strategies to achieve some minimization of symptoms and satisfactory quality of life were central to their existence.
Annells & Koch (2002a)	Descriptive survey. In-depth, semi-structured individual interviews	90 older people (65+ years) living in the community	To clarify older people's perceptions of constipation in the context of their own experience and to identify strategies used by them now and in the past to overcome constipation, especially through the use of laxatives	Constipation was a personal experience. The respondents decided for themselves in response to the experience of their bodies, if they were constipated or not. Respondents were feeling "not right" in themselves when constipated. Constipation was considered to be a personal problem. Constipation could cause crises and also have an impact on life and health. A fixation to have daily bowel action.
Mihaylov, Stark *et al.* (2008)	In-depth interviews with patients. Focus group interview with general practitioners	Older people (55+ years) with chronic constipation living in private households	Define the meaning of constipation in older people from the perspective of general practitioners and older patients. Investigate the use of prescribed and non-prescribed treatments for constipation in older people and the adherence by older people to the prescribed treatments for constipation.	Constipation had different meanings to different people. Frequency of bowel movements and changes in normal bowel routine were central. The elderly experienced different health beliefs about constipation. For most of the participants, achieving a daily bowel movement was an important goal. Emotional feelings that were associated with constipation included feeling agitated, worried, anxious, depressed, miserable, down, suicidal, apathetic, fed up, annoyed, grumpy and irritable.

Table 2 Critical appraisal of quantitative studies (Joanna Briggs Institute 2011)

Criteria (MAStARI)	Müller-Lissner *et al.* 2010.	Marteau *et al.* 2011.	Li *et al.* 2012	Li *et al.* 2014	Nour-Eldein *et al.* 2014.
Was the assignment to treatment groups truly random?	+	?	?	+	x
Were participants blinded to treatment allocation?	+	?	+	+	x
Was allocation to treatment groups concealed from the allocator?	+	?	?	?	x
Were outcomes of people who withdrew described and included in the analysis?	+	?	+	+	x
Were those assessing outcomes blind to the treatment allocation?	+	?	?	+	x
Were the control and treatment groups comparable at entry?	+	+	+	+	x
Were groups treated identically other than for the named interventions	+	+	?	?	x
Were outcomes measured in the same way for all groups?	+	+	+	+	x
Were outcomes measured in a reliable way?	+	+	+	+	?
Was appropriate statistical analysis used?	+	+	?	+	+
Overall assessment	↑	→	→	↑	→

+ = YES **-** = NO **?** = UNCLEAR **X** = NOT APPLICABLE ↑= HIGH QUALITY →= MEDIUM QUALITY

Table 3 Critical appraisal of qualitative studies (Joanna Briggs Institute 2011)

Criteria (QARI)	Mihaylov *et al.* 2008.	Wolfsen *et al.* 1993.	Annells & Koch 2002a.	Koch & Hudson 2000.
There is congruity between the stated philosophical perspective and the research methodology.	x	x	x	x
There is congruity between the research methodology and the research question or objectives.	+	?	+	+
There is congruity between the research methodology and the methods used to collect data.	+	+	+	+
There is congruity between the research methodology and the representation and analysis of data.	+	+	+	+
There is congruence between the research methodology and the interpretation of results.	+	?	?	+
There is a statement locating the researcher culturally or theoretically	x	x	?	x
The influence of the researcher on the research, and vice-versa, is addressed.	?	?	?	x
Participants, and their voices, are adequately represented.	+	+	?	x
The research is ethical according to current criteria or there is evidence of ethical approval by an appropriate body.	+	?	+	+
Conclusions drawn in the research report do appear to flow from the analysis, or interpretation of the data.	?	?	+	+
Overall assessment	↑	→	→	↑

+ = YES **-** = NO **?** = UNCLEAR **x** = NOT APPLICABLE ↑ = HIGH QUALITY → = MEDIUM QUALITY

Figure 1 Flowchart of study selection and inclusion.