

An Overview of Constipation Management in the Elderly Population: Systematic Review

Khalil Salameh Alneimat^{1*}, Sultan Muteb Sufuq Alshalan², Sultan Ahmed Naif Almansour³, Saleh Mohammed Saleh Alotaibi³, Abdulaziz Alhumaidi Saleem Alanazi⁴, Abdulmalek Khaled Suliman Alserhany⁴, Hamoud Jadan Madhour Alruwaili⁵, Anwar Mohammed Bakhitan Alazmi⁴

¹ Consultant, Internal Medicine Department, Gurayat General Hospital, Gurayat, Saudi Arabia. ² Medical Service, Medical Ward Mal, Northern Medical Tower, Arar, KSA. ³ Medical Service, Medical Ward, King Abdulaziz Specialist Hospital, Sakaka, KSA. ⁴ Resedant, Internal Medicine Department, Gurayat General Hospital, Gurayat, Saudi Arabia. ⁵ Resedant, Internal Medicine Department, Endocrine Unit, Prince Mutaib Hospital, Sakaka, KSA.

Abstract

Background: Constipation is a communal serviceable gastrointestinal (GI) ailment. Prevalence of constipation usually varies according to the used description and reviewed community-based studied. **Objective:** to assess the management lines of constipation among the population, especially the elderly. **Method:** This is a systematic review was conducted, including PubMed database searches were performed for the published articles about the prevalence, causes, risk factors, and management lines of constipation among the population, especially the elderly, in Saudi Arabia and worldwide. **Results:** Afterward functioning the inclusion and exclusion criteria, the 45 identified papers were further reduced to 22 papers for full-text assessment and only 15 papers were included. **Conclusion:** Extraordinary prevalence of constipation remained observed among the population, especially the elderly, in Saudi Arabia and worldwide. Constipation is a consequence of a group of risk influences, as per reduced physical activity subsequent from long-lasting diseases, reduced fiber, and fluid intake, and multiple medication intakes. Fiber supplementation and laxatives are considered the first line and effective treatment in most patients. Surgical treatment is hardly ever specified for constipation.

Keywords: constipation, prevalence, causes, risk factors, management, Saudi children

INTRODUCTION

Constipation is a communal serviceable gastrointestinal (GI) ailment. Prevalence of constipation usually varies according to the used description and reviewed community-based studied [1]. In many previous studies, it was noted that the elderly are affected by constipation more frequently than younger individuals [2].

Chronic constipation stands a prevalent disorder popular in the elderly population, and symptoms take place in up to 50% of nursing facilities occupants. The incidence of constipation upsurges with age, especially those older than 65 years [3]. Chronic constipation distresses 17-40% of the elderly, which affects their quality of life [4].

In previous studies, it was reported that severe constipation is more common in elderly women, with rates of constipation two to three times higher than that of their male counterparts [5]. Constipation is classified in primary and secondary, primary constipation is stated as practical constipation when secondary constipation is concomitant with chronic illnesses courses, drug usage, and psychosocial problems [1].

According to Rome III principles for adults, constipation is diagnosed as follows: 25% of bowel movements are

associated with at least two of the subsequent symptoms (hard or lumpy stools, straining, a sensation of inadequate evacuation, the necessity intended for physical maneuvers, a sensation of anorectal obstruction, and fewer than three defecations per week), arising in the preceding 3 months with the beginning of symptoms of no less than 6 months; non-hard feces are infrequently occurred without consuming laxatives; and at hand, are inadequate standards for irritable bowel syndrome [2].

Like numerous complications that disturb the elderly

Address for correspondence: Dr. Khalil Salameh Al_Neimat.
Consultant of internal medicine, Gurayat General Hospital,
Gurayat, Saudi Arabia.
Email: khalilneimat @ gmail.com

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 3.0 License, which allows others to remix, tweak, and build upon the work non commercially, as long as the author is credited and the new creations are licensed under the identical terms.

How to cite this article: Alneimat, Kh. S., Sufuq Alshalan, S. M., Naif Almansour, S. A., Saleh Alotaibi, S. M., Saleem Alanazi, A. A., Suliman Alserhany, A. Kh. and *et al.* An Overview of Constipation Management in the Elderly Population: Systematic Review. Arch Pharma Pract 2020;11(4):147-51.

population, constipation is frequently “multifactorial,” or caused by compound reasons and risk influences [6]. The main cause of constipation in aging individuals is irregular bowel movement which begins as people come older. Constipation is a consequence of several risk factors, as reduced physical activity results from long-lasting diseases, reduced fiber and fluid intake, and multiple medication intakes [7].

The economic affliction of chronic constipation is significant, because of the direct expenses of the healthcare system such as referral, lab investigations, and medications [8-11]. Also, constipation adversely influences the health linked quality of life, besides the psychological and societal concerns [12].

The management lines of constipation come with three manners; by modification of the patient's daily habits, by using natural laxatives, and by using medications. Treatments for constipation require a considerable extent of efficiency. Existing treatment choices are secretagogues lubiprostone and linaclotide [13].

Consequently, it is essential to comprehend the etiology and managing of constipation in this population. Managing constipation in aging people is very important and be contingent chiefly on practice and opinions.

Study objective:

The objective of the present work was to assess the prevalence, causes, risk factors, and management lines of constipation among the population, especially the elderly, in Saudi Arabia and worldwide.

Study Design: Systematic review.

Study duration:

Data Collected throughout the period from 1- 30 September 2020. Data collection: PubMed database searches were performed for the published articles about the prevalence, causes, risk factors, and management lines of constipation among the population, especially the elderly, in Saudi Arabia and worldwide. This database was selected as it is a high-quality source.

Only articles accessible in the English linguistic stayed included. Language restriction was due to unavailable resources for translation. We excluded duplicates and non-obtainable studies. We excluded papers depending on the heading and abstract. All the studies that were not expected to be useful for this review were excluded. The remaining studies using different methodologies were included.

Data management and analysis:

No software has been utilized to analyze the data. The data was extracted based on a specific form that contains (Title of the publication, publication year, study design and setting, author's name, objective, and results). These data were reviewed by the group members to determine its initial findings. A double revision of each member was applied to ensure the validity and minimize the mistakes.

RESULTS

Afterward using the inclusion and exclusion criteria, the 45 identified papers were further reduced to 22 papers for full-text assessment and only 15 papers were included as in **table 1**.

DATA AND METHODS

Table 1: Author(s), year of publication, study design, study setting, and conclusion of the included studies.

Publication (Author, Year)	Type of study	Study setting	Conclusion
Roque M and Bouras E, 2015 [14]	Review article		It is essential to contemplate that several reasons could be existing in one case, and various issues impact the clinical findings of eldercare. Fiber consumption besides osmotic laxatives is an active first line of treatment for several cases. Surgical treatment is seldom designated in CC.
Alhassan, et al, 2019 [15]	cross-sectional study	Saudi Arabia	The prevalence of constipation is relatively very low among the population of the central region in Saudi Arabia. Prevalence
Giorgio. et al., 2015 [16]	Review article		Diet and life regime adjustments are frequently unsuccessful in the management of constipation in senior adults and a multifactorial methodology is recommended. Laxatives are still a pillar in treatment; however, safety fears in the fragile elderly must be talked about. In laxative resilient constipation, numerous new drugs that goal dissimilar original pathophysiological processes have been evidenced to be harmless and in effect in adults, but moderately validated in the elderly.
Nour-Eldein H. et al., 2014 May-Aug. [17]	pre-post intervention study	Egypt	An inguinal hernia is a significant public health problem in Tanzania. If Tanzania continues to address an inguinal hernia at its current surgical restoration frequency, an excess of nearly 1 a million cases for restoration will progress above the next 10 years Teaching on life routine adjustment hints to an enhancement in the harshness of the symptoms of constipation and the QOL of the aged in nursing institutions.

Chu H. et al., 2014 ^[18]	Systematic review	China	In China, the occurrence of constipation was lesser equated with the utmost of other nations. The influences comprising female sex, diagnostic standards, geographic region, age, scholastic class, and race give the impression to have a chief influence on the incidence of constipation.
Harari D et al., 1994 ^[19]	Cross-sectional study.	United States	Our results highlight the necessity for a new systematic methodology to the valuation of constipation in longstanding care situations, chiefly when pharmacologic management is measured.
Cheryl Phillips MD et al., 2001 ^[20]	A retrospective multi-center medical record evaluation.		This study supports the concern that there is often a gap between the documentation of symptoms and constipation treatment decisions. No association was established between the precise laxative recommended and the occurrence or lack of a familiar diagnosis of constipation. Management choices must be based on thorough examination and individualized patient needs. Furthermore, there is a need to increase monitoring for drug effectiveness.
Werth B. et al., 2015. ^[21]	cohort study	Australia	The occurrence of constipation and laxative usage upsurges with age in the old, these upsurges are more for males than for females. Inconsistencies between self-described constipation and purgative usage may advocate sub-optimal managing of constipation in the community-residence seniors and advanced work is needed to fully understand this.
Dov Gandell. et al., 2013 ^[22]	Review article		Physicians must inform their patients on ordinary bowel habits and the probable benefits of dietary adjustments to recover symptoms. Studies stated the benefits of osmotic laxatives in the elderly, as lactulose. Studies stated the usage of loose agents, stool softeners, stimulants, and prokinetic agents was lacking, limited, or inconsistent.
Schuster B. et al., 2015 ^[23]	Case study		There is inadequate confirmation about the best-used treatment, but fibers containing supplements would be first, excepting in bedridden cases, are cognitively compromised, or any contraindications, in this case, an osmotic agent such as PEG 3350 or lactulose, is indicated. Patient preferences should be considered. Treating constipation and avoiding fecal impaction must be taken into consideration.
Wald A, 1990 ^[24]	Cross-sectional study	Pennsylvania	The effective managing of constipation and fecal incontinence in the old people necessitates a considerate of colorectal role, cautious demarcation of the patient's complaint, in some cases, specified studies of the colonic and anorectal role.
Gallagher P. et al. 2012 ^[25]	Review article		There is a defect in studies about the used laxatives in the general or the geriatrics. Modification of lifestyle is beneficial but the evidence is lacking for cases of chronic constipation. So, constipation treatment in the elderly must be adopted according to the individual's desires and prospects.
Bosshard W. et al. 2012 ^[26]			Constipation treatment in the elderly must be adopted according to the individual's practice and beliefs. Many agents appear effective but need precisely tried before advised.
Roque M. et al. 2015 ^[27]	Review article		CC in geriatrics is popular; noteworthy disturbs the quality of life and the health care system. An alert history, drug valuation, and bodily examination are supportive in getting significant signs for good management.
Alhusainy YA, 2018 ^[28]	Internet Based Survey	Saudi Arabia	The study reported a high frequency of constipation. In addition to such high rates, the risk factors related to constipation have been identified in the Saudi community. KSA is highly lacking studies about constipation prevalence and determinants. This may initiate a call for setting priority as one of the major public health issues and deserves urgent attention both at the clinical and at the community level.

DISCUSSION:

According to many previous studies, Constipation is a prevalent disorder and an important cause of morbidity in the elderly. Chronic constipation in the elderly is affected by many factors which make it more prevalent in the elderly more than any other age group especially the people above 65 years old ^[3]. Yet it has been greatly understudied as a health care issue in the long-term care setting. Many community-based studies document the prevalence of constipation in senior adults.

In Roberto De Giorgio's study, the prevalence of constipation in elderly studies reported 26 % in females compared to 16 % in males, while the percentage was 34 % in females and 26 % in males in whom >84 years cases, So, age was associated with leveling between sexes ^[29, 30].

This may be because frailty in older persons is very common and is associated with immobility, poor food intake, multiple medication usage, and dehydration ^[31]. An old study reported that constipation is present in 45 % of frail elderly persons ^[32]. In another community-based study from Minnesota, USA, which included 100 patients aged 65 years old or older, they reported the overall prevalence of constipation to be 40 %, 24.4 % of the patients were affected by functional constipation and 20.5 % by outlet dysfunction ^[33].

Selection of Management line and treatment in constipation depends on the underlying physiologic cause. In the elderly population, it is important to consider other factors that impact constipation such as dehydration, dementia among others before initiating a specific therapy. Management of medication-induced causes, lifestyle modification, and nonpharmacologic therapies should be the first step to avoiding unnecessary drug therapy. Generally, fiber

supplementation is a practical original helpful line; conversely, non-responded cases could be advised by osmotic laxatives [31, 32].

According to Donini *et al.*, [34] which stated that fiber ingestion was significant mainly in the geriatrics, so, all nationwide dietetic guidelines in addition to the food guide pyramid for aged individuals emphasize the essential to raise the intake of dietary fiber, such as fruits and vegetables.

In another study done by Roberto De Giorgio [16], they also reported that non-pharmacological treatment, which consists of diet and lifestyle modifications is traditionally considered the first step of a comprehensive treatment program to effectively manage constipation.

Hebattallah Nour-Eldein. *Et al.* reported a substantial decrease in the contributors who used purgatives from 82.6% - 34.8% consumers in pre-post interference [17]. These results were supported by the results by Sturtzel and Elmadfa [35] that discovered decreased laxative consumption in reply to regular fiber ingestion. While, Park *et al.*, [36] revealed that while exercise and dietary fiber were supportive in selected constipation cases, purgatives were more efficient in releasing symptoms of constipation in other cases.

In a previous study [22], it was reported that using bulk means, stool softeners, stimulants, and prokinetic agents was deficient, limited, or inconsistent, contrary to another preceding study conducted by Paul F. Gallagher. *Et al.* [25], Whoever, in another study there was a conforming rise in the frequency of laxative usage from 6% - 15% during this time [21].

Stimulant laxatives and prokinetic agents must be earmarked only in cases that are intractable to fiber additions or osmotic purgatives, whoever there is some evidence that laxatives are not effective in some cases. In Danielle Harari's [19], an important potential explanation for the substantial number of laxative users who continue to report constipation symptoms is that current pharmacologic management of this problem is frequently clinically ineffective or becomes ineffective over time. As they reported in their study, in common with 2 others based in US nursing homes, revealed that the stool softener docusate was most commonly prescribed, followed by the laxative magnesium hydroxide [37, 38], whoever, there are only minimal data to support the efficacy of magnesium hydroxide as a laxative in the elderly [39]. Recently published literature [40, 41] and the Physicians Desk Reference clearly describe docusate as a fecal softener without any laxative action, and there are only minimal data to support the efficacy of magnesium hydroxide as a laxative in the elderly [39]. In contrast, the effectiveness of less frequently employed agents such as senna, bulking agents, sorbitol, and lactulose has been demonstrated in elderly subject groups [19]. Also, enemas were reported to be used as a treatment for some cases

of constipation, although they are reported to have more associated side effects in the elderly [42, 43].

CONCLUSION:

Extraordinary prevalence of constipation remained observed among the population, especially the elderly, in Saudi Arabia and worldwide. Constipation is a consequence of a group of risk influences, as per reduced physical activity subsequent from long-lasting diseases, reduced fiber, and fluid intake, and multiple medication intakes. Fiber supplementation and laxatives are considered the first line and effective treatment in most patients. Surgical treatment is hardly ever specified for constipation.

Limitations:

The used previous studies were constrained to those published in the English linguistic though publication bias possibly will have prejudiced studies having helpful outcomes.

REFERENCES

1. Mounsey A, Raleigh M, Wilson A. Management of Constipation in Older Adults. *Am Fam Physician*. 2015 Sep 15;92(6):500-4. PMID: 26371734.
2. Paré P, Bridges R, Champion MC, Ganguli SC, Gray JR, Irvine EJ, Plourde V, Poitras P, Turnbull GK, Moayyedi P, Flook N. Recommendations on chronic constipation (including constipation associated with irritable bowel syndrome) treatment. *Can J Gastroenterol* 2007; 21 (Suppl B):3B–22B
3. Rao SS. Constipation: evaluation and treatment of colonic and anorectal motility disorders. *Gastroenterol Clin North Am* 2007; 36:687–711.
4. Rao SS, Go JT. Update on the management of constipation in the elderly: new treatment options. *Clin Interv Aging* 2010; 5:163–171.
5. Choung RS, Locke GR, Schleck CD, Zinsmeister AR, Talley NJ. Cumulative incidence of chronic constipation: a population-based study 1988–2003. *Aliment Pharmacol Ther*. 2007;26(11–12):1521–1528.
6. Wald A, Scarpignato C, Mueller-Lissner S, Kamm MA, Hinkel U, Helfrich I, Schuijt C, Mandel KG. A multinational survey of prevalence and patterns of laxative use among adults with self-defined constipation. *Aliment Pharmacol Ther*. 2008;28(7):917–930.
7. Bharucha AE, Pemberton JH, Locke GR. American Gastroenterological Association technical review on constipation. *Gastroenterology*. 2013;144(1):218–238.
8. Algahtani F D. Healthy Lifestyle among Ha'il University Students, Saudi Arabia. *Int. J. Pharm. Res. Allied Sci*. 2020;9(1):160-7
9. Hanawi SA, Saat NZ, Zulkafly M, Hazlenah H, Taibukahn NH, Yoganathan D, Abdul Rahim NN, Mohd Bashid NA, Abdul Aziz FA, Low FJ. Impact of a Healthy Lifestyle on the Psychological Well-being of University Students. *Int. J. Pharm. Res. Allied Sci*. 2020;9(2):1-7
10. Mathialagan AG, JA JA DM, Azra N, Selvaganapathi G, Harikrishnan T, Kohila JR, Suriya PN, Fathy I, Ramalingam R, Vikneswaran S. Patient attitudes and health information features as predictors of health promotion in Malaysia. *J. Adv. Pharm. Edu. Res*. 2018;8(2):43-8.
11. Darkhor S, Estebarsari F, Hosseini M, Charati JY, Vasli P. Effect of health promotion intervention on Nurses' healthy lifestyle and health-promoting behaviors: RCT study. *J. Adv. Pharm. Edu. Res*. 2018;8(1):108-14.
12. Bongers ME, Benninga MA, Maurice-Stam H, Grootenhuys MA. Health-related quality of life in young adults with symptoms of constipation continuing from childhood into adulthood. *Health Qual Life Outcomes*. 2009;7:20.

13. Wang JP, Duan LP, Ye HJ, Wu ZG, Zou B. [Assessment of psychological status and quality of life in patients with functional constipation]. *Zhonghua Nei Ke Za Zhi*. 2008;47(6):460–463. Chinese.
14. Roque M, Bouras E. Epidemiology and management of chronic constipation in elderly patients. *Clin Interv Aging*. 2015;10:919-930.
15. Alhassan M, Alhassan A, Alfarhood A, Alotaibi K, Alrashidy N, Alshalhoub K, Almeshal M. Prevalence of constipation among central region population, Riyadh and Qassim provinces, Saudi Arabia, 2018-2019. *J Family Med Prim Care*. 2019 Feb; 8(2): 673–676.
16. De Giorgio R, Ruggeri E, Stanghellini V, Eusebi LH, Bazzoli F, Chiarioni G. Chronic constipation in the elderly: a primer for the gastroenterologist. *BMC gastroenterology*. 2015 Dec 1;15(1):130.
17. Nour-Eldein H, Salama HM, Abdulmajeed AA, Heissam KS. The effect of lifestyle modification on severity of constipation and quality of life of elders in nursing homes at Ismailia city, Egypt. *J Family Community Med*. 2014 May-Aug; 21(2): 100–106.
18. Chu H, Zhong L, Li H, Zhang X, Zhang J, Hou X. Epidemiology characteristics of constipation for general population, pediatric population, and elderly population in China. *Gastroenterology research and practice*. 2014 Oct;2014.
19. Harari D, Norton C, Lockwood L, Swift C. Treatment of constipation and fecal incontinence in stroke patients: randomized controlled trial. *Stroke*. 2004 Nov;35(11):2549-55. doi: 10.1161/01.STR.0000144684.46826.62. Epub 2004 Oct 14. PMID: 15486330.
20. Phillips C, Polakoff D, Maue SK, Mauch R. Assessment of constipation management in long-term care patients. *Journal of the American Medical Directors Association*. 2001 Jul 1;2(4):149-54.
21. Werth BL, Williams KA, Pont LG. A longitudinal study of constipation and laxative use in a community-dwelling elderly population. *Archives of gerontology and geriatrics*. 2015 May 1;60(3):418-24.
22. Gandell D, Straus SE, Bundookwala M, Tsui V, Alibhai SM. Treatment of constipation in older people. *Cmaj*. 2013 May 14;185(8):663-70.
23. Schuster BG, Kosar L, Kamrul R. Constipation in older adults Stepwise approach to keep things moving. *Can Fam Physician*. 2015 Feb; 61(2): 152–158.
24. Wald A. Constipation and fecal incontinence in the elderly. *Gastroenterology Clinics of North America*. 1990 Jun;19(2):405-418.
25. Gallagher PF, O'Mahony D, Quigley EM. Management of chronic constipation in the elderly. *Drugs & aging*. 2008 Oct 1;25(10):807-21.
26. Bosshard W, Dreher R, Schnegg JF, Büla CJ. The treatment of chronic constipation in elderly people. *Drugs & aging*. 2004 Dec 1;21(14):911-30.
27. Roque MV, Bouras EP. Epidemiology and management of chronic constipation in elderly patients. *Clinical interventions in aging*. 2015;10:919.
28. Alhusainy YA, Alhowaish NY, Alorabi HZ, Alsebt AA, AlJutaili HS, Tarakji AR, Tharkar S. Symptoms and prevalence of constipation among adult population of Riyadh city: an internet based survey. *The Egyptian Journal of Hospital Medicine*. 2018 Jan 1;70(8):1317-22.
29. Harari D. Constipation. In: Halter JB, Ouslander JG, Tinetti ME, editors. *Hazzard's Geriatric Medicine and Gerontology*. 6th ed. New York, USA: McGraw-Hill Companies; 2009. p. 1103–22.
30. Harris LA. Prevalence and ramifications of chronic constipation. *Manag Care Interface*. 2005;18:23–30.
31. Morley JE, Kim MJ, Haren MT, Kevorkian R, Banks WA. Frailty and the aging male. *Aging male*. 2005;8(3–4):135–40.
32. Wolfsen CR, Barker JC, Mitteness LS. Constipation in the daily lives of frail elderly people. *Arch Fam Med*. 1993;2:853–8.
33. Fox JC, Fletcher JG, Zinsmeister AR, Seider B, Riederer SJ, Bharucha AE. Effect of aging on anorectal and pelvic floor functions in females. *Dis Colon Rectum*. 2006;49:1726–35.
34. Donini LM, Savina C, Cannella C. Nutrition in the elderly: Role of fiber. *Arch Gerontol Geriatr*. 2009;49:61–9.
35. Sturtzel B, Elmadfa I. Intervention with dietary fiber to treat constipation and reduce laxative use in residents of nursing homes. *Ann Nutr Metab*. 2008;52:54–6.
36. Park MI, Shin JE, Myung SJ, Huh KC, Choi CH, Jung S, Choi SC, Sohn CI, Choi MG. Guidelines for the treatment of constipation. *Korean J Gastroenterol*. 2011;57:100–14.
37. Lamy PP, Krug BH. Review of laxative utilization in a skilled nursing facility. *J Am Geriatr Soc* 1978; 26: 544– 9.
38. Monane M, Avorn J, Beers MH, Everitt DE. Anticholinergic drug use and bowel function in nursing home patients. *Arch Intern Med* 1993; 153: 633– 8.
39. Kinnunen O, Salokannel J. Constipation in elderly long-stay patients: Its treatment by magnesium hydroxide and bulk-laxative. *Ann Clin Res* 1987; 19: 321– 3.
40. Pietrusko RG. Use and abuse of laxatives. *Am J Hosp Pharm* 1977; 34: 291– 300.
41. Castle SC, Cantrell M, Israel DS, Samuelson MJ. Constipation prevention: empiric use of stool softeners questioned. *Geriatrics* 1991; 46: 84– 86.
42. Smith I, Carr N, Corrado OJ, Young A. Rectal necrosis after a phosphate enema. *Age Ageing* 1987; 16: 328– 30.
43. Korzets A, Dicker D, Chaimoff C, Zevin D. Life-threatening hyperphosphatemia and hypocalcemic tetany following the use of fleet enemas. *Journal of the American Geriatrics Society*. 1992;40(6):620-1.