Doctor of Nursing Practice
The University of Texas at El Paso

IMPLEMENTATION OF AN EVIDENCE-BASED SCREENING AND TREATMENT ALGORITHM FOR CHRONIC CONSTIPATION IN A SKILLED NURSING FACILITY

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COHORT X

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DNP Quality Improvement Project

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Implementation of an Evidence-Based Screening and Treatment Algorithm for Chronic Constipation in a Skilled Nursing Facility

Title

This quality improvement (QI) project was an evidence-based screening and treatment algorithm for chronic constipation at a skilled nursing facility. The project aimed to decrease the occurrence of constipation using an evidence-based screening tool, Rome IV criteria for chronic constipation, and a modified algorithm for managing chronic constipation in a skilled nursing facility population setting. The project will provide skilled nursing facilities with a practical and straightforward management algorithm for patients with chronic constipation as described by Rome IV criteria.

Background

During a review of bowel movement records from a 129-bed capacity nursing home with post-acute care subspecialty hospital, the data revealed no standard of care for identifying and managing chronic constipation, requiring frequent diagnostic testing and rescue laxative medications. The PICOT question was "Will the Implementation of an Evidence-Based Screening and Treatment Algorithm for Chronic Constipation in a Skilled Nursing Facility decrease the occurrence of chronic constipation"?

Methods

The design methodology was an evidence-based, Plan-Do-Study-Act paradigm. The project manager performed a comprehensive literature review to identify the most appropriate guideline for chronic constipation applicable to the skilled nursing home population. The project manager used a PRISMA Flowchart (Garrard, 2017) to track the number of studies or records selected for inclusion and deemed eligible for this QI project (n = 56). The nursing staff and the

project manager completed a needs gap assessment. The team reviewed 32 patient charts to check medication lists, frequency of bowel movements, and documentation of subjective evaluation of constipation complaints using the electronic health record (EHR). The project manager reviewed 32 charts and selected five patients meeting Rome IV criteria for chronic constipation as the sampling population.

Intervention

The QI project made use of the Rome IV criteria for constipation. The QI initiative used a modified algorithm for chronic constipation from a peer-reviewed article by Bharucha and Lacy (2020). The project manager modified the algorithm to use interventions for the population group appropriately.

The Plan-Do-Study-Act methodology was designed to analyze the outcomes of the QI project appropriately. The project manager collected data through EHR review and interviews with staff and patients. Using the modified algorithm for chronic constipation with the sampling population was provided with an increase in daily fiber and oral fluids if clinically appropriate. In determining patients' clinical response to the intervention for bowel management, clinical rounding was completed three times a week for assessment and correlating this assessment to existing documentation in the EHR.

Results

An unintended positive result came from this project. Upon reviewing the EHR, a 100% improvement in the documentation was noted by nursing staff, and nursing staff verbalized their satisfaction and feeling of ownership of the project. After four weeks of following the study and using Rome IV criteria for chronic constipation and daily use of fiber and fluid intake, the project manager collected data using the same elements in Rome IV criteria for chronic

constipation. The details are a combination of subjective symptoms to define constipation: the sensation of incomplete evacuation, straining, abdominal bloating, prolonged or failed attempts to move bowels, and the presence of hard stools during evacuation. We have excluded the "episode of manual disimpaction" in the Rome IV criteria due to the facility's protocol prohibiting manual stool disimpaction. The results were: 0% result documented regarding straining, abdominal bloating, or failed attempts to move bowels.

Conclusion

Identification and implementation of the modified algorithm for constipation decreased episodes of symptoms of constipation from the participants of this QI project. There was also the unintended result of improvement in the documentation of bowel movements by nursing staff at the skilled nursing facility. The project guided proper assessment documentation on daily bowel movements, and staff verbalized a sense of ownership and satisfaction. Initially, the project manager identified an opportunity for improvement with documentation of some symptoms associated with constipation complaints. However, with further one-on-one training, nursing staff gained additional knowledge of screening using Rome IV criteria and the application of daily fiber and increased fluid intake for patients with chronic constipation.

Introduction

Constipation is a benign condition that is difficult to manage due to its lack of definition (Emmanuel et al., 2017; Forootan et al., 2018; Seung et al., 2021). This lack of definition led to challenges in its management, especially for patients in nursing homes (Blekken et al., 2016). It is challenging to create a universally applicable definition of constipation that would permit a focused study; clinicians and patients often differ in their definitions, leading to problems comparing research studies (De Giorgio et al., 2015). These variabilities involve age, sex,

culture, or the context of the study. Patients with constipation generally have infrequent stools (fewer than three bowel movements per week), the sensation of incomplete evacuation, straining during defecation, the need for manual assistance to evacuate stool, bloating, and hard lumpy stools (Bharucha & Lacy, 2020).

A literature review found that constipation includes a decrease in the number of episodes of bowel movements per week by itself or a combination of a sensation of incomplete evacuation, straining, abdominal bloating, prolonged or failed attempts to move bowels, hard stools, and the necessity for manual disimpaction (Wlodarczyk et al., 2021). The European Society of Neurogastroenterology defined constipation as difficult, unsatisfactory, or infrequent defecation (Serra et al., 2020). The American Gastroenterological Association (2013) described constipation as irregular bowel movements (< three times a week); patients may have hard stools, bloating and distention, feeling of incomplete evacuation, straining (anorectal blockage during a bowel movement), and the need for manual disimpaction.

De Giorgio et al. (2015) established the traditional criterion for constipation, a limited number of weekly evacuations (i.e., < three times) per week. Constipation is also known as a functional bowel disorder characterized by infrequent or incomplete defecation, persistently difficult bowel movements, and symptoms that do not meet the criteria for irritable bowel syndrome (Alsalimy et al., 2018). Patients describe constipation as infrequent bowel movements and difficulty passing stools; physicians only use the former in diagnosing constipation (Emmanuel et al., 2017). These contrasting definitions led to the development of the Rome Diagnostic Criteria, which later became the most widely applied definition and management of constipation (Emmanuel et al., 2017; Ewan & Newton, 2008).

Constipation is often seen in patients 65 years of age and above (Seung et al., 2021). Prevalence data demonstrated that the severity in the elderly population among patients in a skilled nursing facility showed a gender difference; 85% were females with rates 2–3 times higher than elderly males (Seung et al., 2021). Constipation was associated with regular use of medications causing constipation, lower economic class, non-white race, and symptoms of depression and anxiety (Fraser et al., 2019; Gandell et al., 2013; Paquette et al., 2016). Of those afflicted, 50% of patients were 80 years of age, and 60% of these lived in institutions (Gandell et al., 2013), suggesting substantial use of healthcare resources and decreased quality of life (Forootan et al., 2018) due to anxiety and stress over the symptoms. Constipation in the elderly (especially the frail elderly) may carry substantial consequences. Older people may have difficulty straining due to frailty, and more complicated issues can lead to episodes of syncope and ischemia. Other symptoms include nausea and vomiting, abdominal pain, lack of appetite, abdominal bloating, and other gastrointestinal symptoms leading to gastric ulceration, perforation, sepsis, and death.

The Rome IV criteria were established in 2016 and became the standard for diagnosing functional gastrointestinal disorders. The criteria for functional constipation have the following elements: difficult, infrequent, or incomplete defecation (Otani et al., 2021). These criteria dominated the sampling population of the QI project. The Rome IV criteria also describe functional constipation as meeting the requirements during the preceding three months with symptom onset at least six months before the diagnosis (i.e., the symptoms were chronic). Chronic constipation was defined in the QI initiative as symptoms experienced by the sampling population for more than three months and at least six months before the diagnosis.

Diagnoses and interventions for constipation have a considerable impact on economic burdens. According to Shahi and Cash (2015), diagnostic testing for constipation costs almost $7 billion a year. Daily management of constipation is essential given the severity of the consequences and the high prevalence of constipation in the elderly (in addition to worsening quality of life and a substantial economic burden on skilled nursing facilities) (Takaoka et al., 2020).

Problem Description

Constipation in the institutionalized elderly is a chronic problem affecting 60% of those aged 80 years and above. Constipation may have various etiologies, and for this reason, several treatment options and diagnostic methods are available. These treatment options and diagnostic methods range from simple lifestyle changes to surgical procedures. A review of bowel movement records in a 129-bed capacity nursing home with a post-acute care subspecialty hospital revealed no standard of care for identifying and managing chronic constipation, requiring frequent diagnostic testing and rescue laxative medications. This QI project attempted to provide a simple solution to help Advance Practice Registered Nurses make the best decisions for achieving good outcomes in patients who suffer from chronic constipation identified using Rome Criteria that persist for at least three months (Aziz et al., 2020). For this endeavor, a modified guideline was used as the algorithm for managing chronic constipation to meet the requirements for this QI project in a skilled nursing facility. The Rome IV criteria for functional constipation were used as the screening tool.

The QI project was performed in 129 skilled nursing long-term and acute care beds, including five-bed units for those requiring specialized care and extended stays in a hospital-like setting. Of 129 beds, 113 were occupied, and 70% of the residents were aged 80 years and

above. Morbidities associated with confinement included trauma, dementia, and other medical conditions related to moderate-to-severe cognitive decline, wound care, and other neurological deficits needing higher assistance with maintenance and rehabilitation. Comorbidities included hypertension, hypothyroidism, type 2 diabetes mellitus, dementia, and Alzheimer's disease.

Prolonged institutionalized care combined with frailty, medication use, lack of appetite associated with the diagnosis, and decreased activity leads to constipation. Current management ranges from the use of osmotic laxatives and rescue medications to radiologic testing, further exacerbating the economic burdens of the facility and physical symptoms experienced by patients that affect their daily routine activities.

The nursing department in this skilled facility also experienced staffing shortages due to Covid-19 exposure. The nursing administration had contracted with nursing agencies to fill vacant scheduling spots. On several occasions, administrative nursing staff performed bedside nursing to fill the shortage. Contracted nursing with minimal orientation needed to adapt variances in nursing documentation related to the facility's EHR, leading to missed reporting and documentation. These are but a few challenges faced at this skilled nursing facility.

Available Knowledge

The literature sources for this project were obtained from Google Scholar, EBSCO, PubMed, and the Cochrane Library. The search query included the keywords: "constipation," "chronic constipation," "functional constipation," "long-term care constipation," "skilled nursing care constipation," "nursing homes," "geriatric care," "Rome Criteria for functional constipation," "functional constipation," and "elderly." The search yielded 88 articles. Results were filtered to include articles published in English. Restrictions on date publication were applied.

The American Gastroenterological Association classifies constipation into three groups based on colonic transit and anorectal function: normal transit, slow transit, pelvic floor dysfunction, or defecatory disorders (Bharucha et al., 2013). Normal transit constipation involves poor dietary intake of fiber and difficulty with stool passage related to hard stools. Slow transit constipation is due to the result of dysfunction of the smooth muscle or neural pathways, and pelvic floor dysfunction or defecatory disorder refers to incomplete rectal evacuation (Otani et al., 2021).

Constipation may lead to disabling conditions. It is more frequent in elderly patients residing in long-term care facilities or hospitals. The prevalence increases with age, with 50% of institutionalized patients reporting symptoms (Gandell et al., 2013). With many institutionalized patients complaining of constipation, it is not surprising that laxatives are often prescribed to 50%–75% of patients in a nursing home (Alsalimy et al., 2018). Comorbidities accompany the increased age; stroke, Parkinson's disease, colorectal carcinoma, and hypothyroidism can cause constipation in the elderly. In addition, medications are prescribed for these chronic conditions. Analgesics, cation-containing agents, and anticholinergics cause constipation as a side effect (Alsalimy et al., 2018). In addition, older people are frailer, less mobile, and have poor oral intake, leading to dehydration and constipation. Phillips et al. (2001) measured the prevalence of diagnosed constipation in long-term care patients and found that approximately 70% of the patients had at least one condition that causes constipation, and 75% or more patients had at least one medication that causes it.

Comorbidities and medications are significantly related to constipation (De Giorgio et al., 2015). Age, female sex, non-white race, low economic status, low educational level, medications, physical activities, dehydration, and depression are considered risk factors for

constipation (Fraser et al., 2019). Roque and Bouras (2015) further characterized the disease pathology with their "9 Ds" (Table 1).

Table 1

List of Clinical Factors in Constipation for Elderly Patients

Clinical Factors
● Drugs (side effects) ● Defecatory Dysfunction ● Degenerative Disease ● Decreased dietary intake ● Dementia ● Decreased mobility/activity ● Dehydration ● Depression ● Dependence on others for assistance

It has proved challenging to promulgate a universally applicable definition of constipation that would permit focused studies; clinicians and patients often differ in their definitions, which has led to problems comparing research studies (De Giorgio et al., 2015). These studies can vary by age, sex, culture, or the context of the study. Patients with constipation often have symptoms of infrequent stools (fewer than three bowel movements per week), the sensation of incomplete evacuation, straining during defecation, the need for manual assistance to evacuate stool, bloating, and hard lumpy stools (Bharucha & Lacy, 2020).

Rationale

The QI project is a practical intervention to improve the management of constipation in the elderly population living in an institutionalized setting. Prolonged institutionalized care combined with frailty, medication use, lack of appetite associated with their diagnosis, and decreased activity leads to constipation. Current management ranges from rescue medications to radiologic testing, exacerbating economic burdens on facilities and medical symptoms in patients affecting their normal daily activities. The high prevalence of constipation among the elderly in an institutionalized setting results in a decreased quality of life and increased financial costs for expensive medications, consultations, and radiographic studies, further compromising organizations' budgets.

Specific Aims

This QI project initiative aims to implement an evidence-based tool for screening chronic constipation and practical and straightforward management of patients with chronic constipation described using Rome IV criteria. We aim to decrease constipation in patients diagnosed with chronic constipation under Rome IV criteria within four weeks of its implementation.

Methods

Context

The QI project was performed in a 129-bed skilled nursing facility treating patients needing acute rehabilitative care and long-term care. The facility includes a 5-bed unit for those requiring higher specialized care in a hospital-like setting. Of the 129 beds, 113 were occupied, and 70% of these patients were aged 80 years and above. The morbidities associated with their confinement included trauma, wound care, prolonged antibiotic infusion, dementia, and other neurologic cases leading to moderate-to-severe cognitive decline needing higher assistance with

maintenance and rehabilitation. Extended institutionalized care combined with frailty, medication use, lack of appetite, and decreased activity leads to constipation. Current management of this condition ranges from osmotic laxatives and rescue medications to radiologic testing, increasing economic burdens on facilities and patients experiencing medical symptoms of constipation affecting their daily routine activities.

Interventions

Plan. The project's *Plan phase* involves the initial coordination with the Nursing Home Administration to consent for a QI project at the facility. The initial review of the EHR and brainstorming meetings with nursing staff were directed to results demonstrating a commonality in patients having periods of no bowel movements for 72 hours or longer, necessitating rescue laxatives and diagnostic testing. Identifying gaps in care provided the project team with a clear direction for the QI project. We presented the focus for the QI project to the Nursing Home Administrator and procured an agreement.

An informal situational analysis was completed to determine the organization's strengths, weaknesses, opportunities, and threats. This situational analysis was conducted with the nursing staff during the initial meeting. They identified their strengths as having a supportive and qualified administrative staff, engaged and motivated nurse leaders and nursing staff, effective communication among staff through huddles and e-mails, and a strong relationship between nursing, administration, and medical providers. Weaknesses were identified as no standard of care management for constipation, nurse staffing shortage, inconsistencies with charting due to temporary staff, and high workload. The opportunities presented were using the EHR for more accessible documentation, nursing support of new projects, the team being receptive to change, and nursing staff being more conscious of a change in their practice. Identified threats were a

high rate of contract nursing use, contract nurses not adequately trained with the policies of the company and the effective use of the EHR, and a high level of care of new patients admitted recently requiring additional nursing hours. Knowledge of the elements in the situational analysis assisted in making adjustments t provide better opportunities for success.

Figure 1

Situational Analysis of the Gap Assessment

After creating the PICOT question and the aim of the QI project, the formal request and approval were directed to the institutional review board (IRB). A literature review was performed to compare current standards of care for constipation versus the current clinical practice of the facility. The *Plan* phase included inviting healthcare members of the facility (nursing assistants and licensed nurses) to prepare for the change, participate in the actual change, and maintain and sustain the change.

The *Plan* phase also included providing nursing staff with knowledge of Rome IV criteria for functional constipation and its accompanying checklist, the Bristol stool chart criteria, and the expectations for proper documentation in the EHR. A project folder was supplied to the nursing staff as a reference that included QI process information and QI forms. Frequent narrative follow-up with nursing staff to ensure a thorough understanding of the project was completed. Any additional questions and guidance or follow-up were provided on a one-to-one basis because of the heterogeneity of available nursing staff. The target date of implementation was January 17.

The project manager assembled two support teams composed of charge nurses and lead nursing assistants. The support team ensured that staff completed documentation on bowel movements and handled management concerns during their shift. Teams followed up with the staff documentation and function as the shift resource. A bi-weekly meeting attended by either the Director of Nursing or her representative, project leaders, and the project manager was scheduled to discuss issues. At this meeting, the team determined any improvements attributable to the change in the management of chronic constipation.

Do. The *Do* phase was the implementation of the project, which was started on week 2 with a huddle meeting amongst the nursing staff. The project manager coordinated with the nursing staff and administration by informing the QI project's stakeholders (including patients). The sampling population was those who qualified for chronic constipation under Rome IV criteria and were able to respond to questions during follow-up. During the huddle, the nursing staff was informed about the needs gap identified at the facility, the literature review findings for constipation in long-term care, and the facility's current standard of practice. We compared our current practice versus best practices according to a literature search. We all felt that we could do

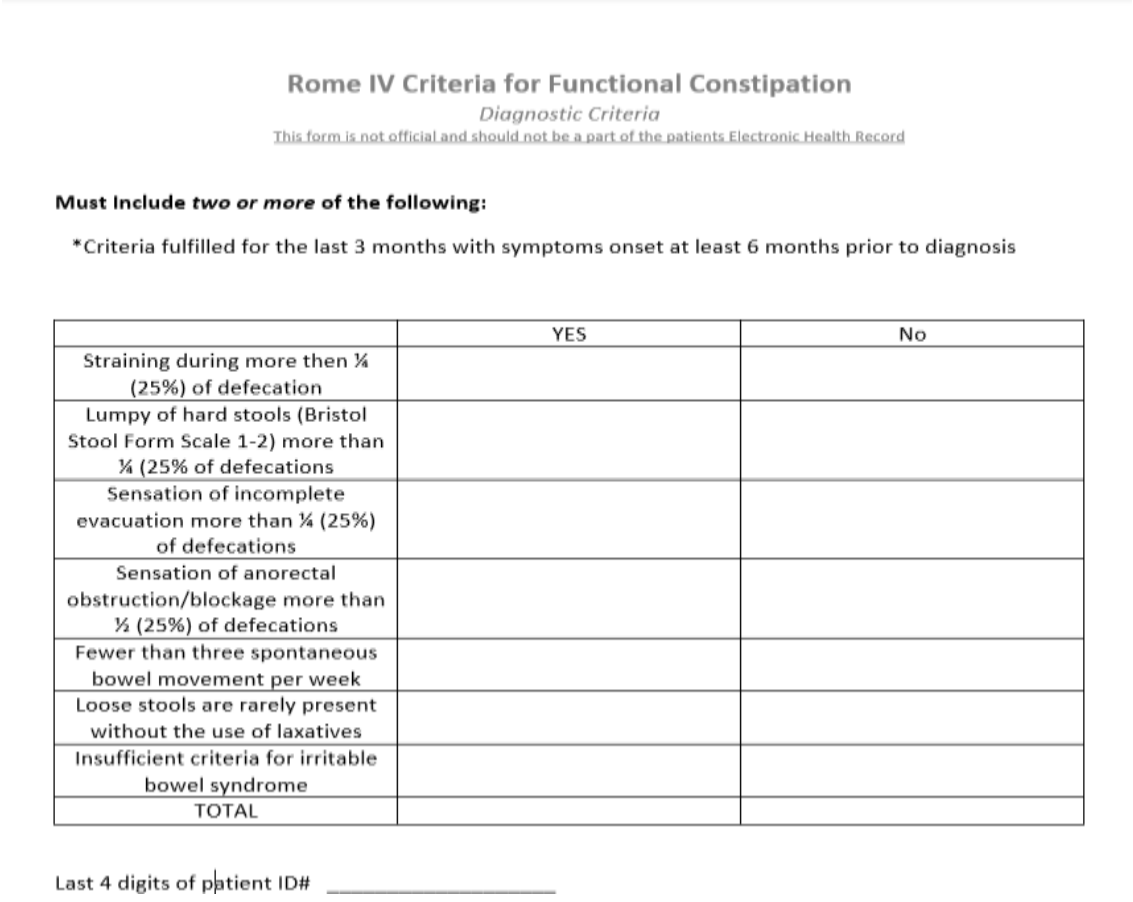
more to provide a higher quality of care for our patients. The team sent out flyers regarding the implementation date of the QI project.

A memorandum was displayed in the nursing lounge to rally nursing staff and other stakeholders. To eliminate confusion among the nursing staff, additional one-on-one instructions were available to nursing and were available on-call for any concerns or questions, eliminating miscommunication in the process of the QI project. The project managers ensured that all shifts were covered in this training. From the start date (January 24), five patients were selected to receive MiraLAX 17 grams daily and an increase of water intake of 200 ccs every 8 hours. Nursing staff documented each shift for their assessment, including subjective symptoms of constipation, any rescue medications and diagnostic testing provided, and subsequent follow-up assessment for constipation, if any.

The QI initiative used the evidence-based tool Rome IV criteria for constipation in screening patients. The screening was completed by nursing staff from January 17 to January 21. Table 2 of the Rome IV criteria screening tool in identifying our population for the QI project includes the following:

Figure 3

Rome IV Criteria for Functional Constipation



Rome IV Criteria for Functional Constipation

Diagnostic Criteria

This form is not official and should not be a part of the patients Electronic Health Record

Must Include *two or more* of the following:

*Criteria fulfilled for the last 3 months with symptoms onset at least 6 months prior to diagnosis

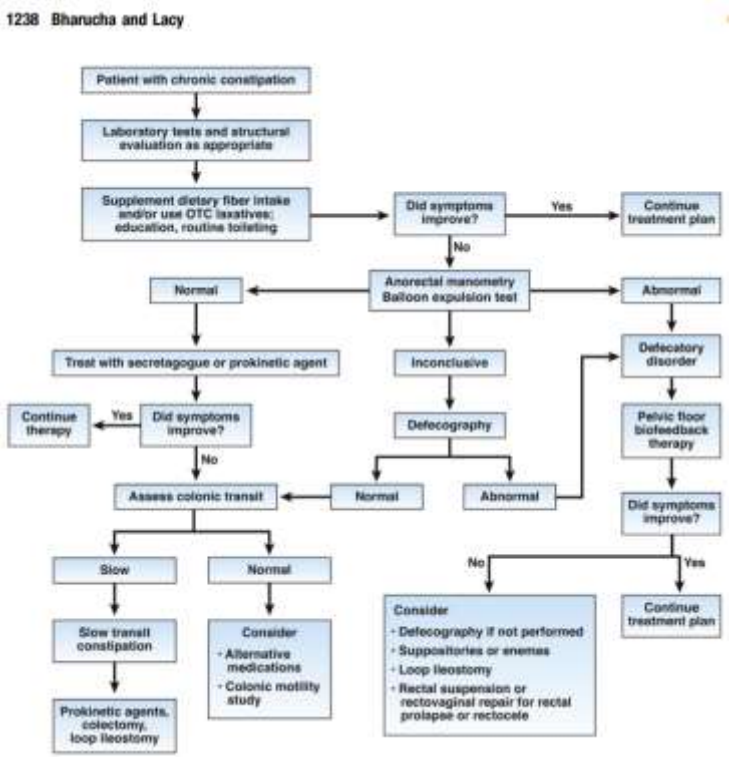
	YES	No
Straining during more then ¼ (25%) of defecation		
Lumpy of hard stools (Bristol Stool Form Scale 1-2) more than ¼ (25% of defecations		
Sensation of incomplete evacuation more than ¼ (25%) of defecations		
Sensation of anorectal obstruction/blockage more than ½ (25%) of defecations		
Fewer than three spontaneous bowel movement per week		
Loose stools are rarely present without the use of laxatives		
Insufficient criteria for irritable bowel syndrome		
TOTAL		

Last 4 digits of patient ID# _____

Table 3 displays the second tool for the QI project. The modified treatment algorithm for our unique skilled nursing population identified chronic constipation. Laboratory testing was limited to a complete blood count and comprehensive metabolic profile to eliminate medical conditions that may be causing constipation. Because this was a QI project, no invasive testing, and invasive assessments were performed.

Figure 4

Treatment Algorithm for Chronic Constipation

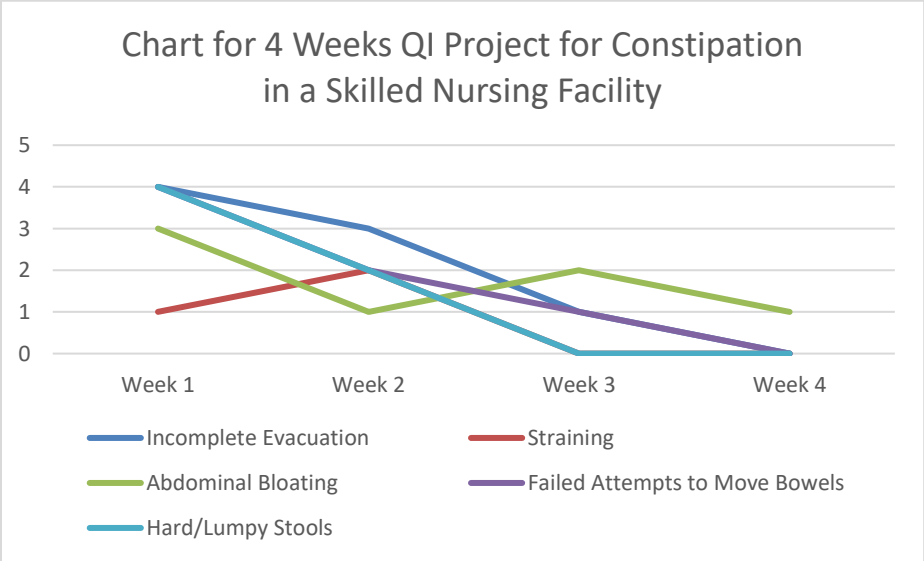


Study. The *Study* phase included collecting data, including follow-up of patients through documentation in the EHR, verbal report from caregivers, subjective assessments, and observation of the patients. Occurrence of bowel movements and subjective symptoms verbalized by patients, objective symptoms observed such as abdominal distention, decreased bowel sounds, nausea, and vomiting documented by nursing staff were collected from the EHR. A review of EHR and data collection was completed weekly to follow-up with QI outcomes. These data are then plotted in a graph each week to document the course of the QI project. The project manager performed clinical rounding three times a week to determine the short-term effect of the QI initiative.

Four weeks following the study and use of Rome IV criteria for chronic constipation and daily use of fiber and increased fluid intake, the data were collected using the same elements in the Rome IV criteria. These criteria include a combination of subjective symptoms to define constipation: the sensation of incomplete evacuation, straining, abdominal bloating, prolonged or failed attempts to move bowels, and hard stools were plotted in a run graph. The results were 0% documentation with the abovementioned criteria. We excluded the "episode of manual disimpaction" criterion due to the facility protocol against manually disimpacting stool. There was an unintended positive result from this QI project: The nursing staff noted a 100% improvement in the documentation upon reviewing the EHR. The nursing staff verbalized their satisfaction and feeling of ownership for the project.

Table 2

Run graph for the outcomes of the intervention for chronic constipation



Act. The *Act* phase determined that in Week 2, there was a need for reeducation regarding proper documentation in the EHR. A one-to-one approach for retraining was provided to nursing staff. After implementation, coaching on appropriate documentation was used with reminders of communication availability when issues arose.

Overall, the nursing staff determined that the QI initiative was a success. The nurses hoped to share the outcome of the QI project and standardize the process by collaborating with other physicians and advanced nurse practitioners from other physician groups practicing in the facility to maintain and sustain the new strategy for chronic constipation management.

Study of the Interventions

To measure the effectiveness of the QI initiative in decreasing the number of episodes of constipation at the skilled nursing facility, a review of the patient's EHR was completed before the start of the project, and a weekly data review during the intervention period was completed. The study included documentation of any symptoms of constipation as stated in the Rome IV criteria. A weekly patient observation and feedback to determine any subjective symptoms were also completed. Narrative assessments from nursing staff were also included regarding the usefulness of the project binder and their professional opinion of the modified algorithm for chronic constipation. During the intervention period, the project manager elicited nursing staff feedback regarding any challenges and issues. The charts showed 100% non-use of rescue laxatives and 0% complaints of constipation for the previous six weeks.

The Plan-Do-Study-Act for the QI project use was shown to be effective. Planning, doing what was planned, studying, and acting on what was learned provided the team focused on the project's aim. The methodology guided our thinking process and provided an action-focused intervention for any issues and challenges during the change process.

The situational analysis in identifying the strength, weaknesses, opportunities, and threats for project planning and management provided an opportunity for the staff to look at their organization. It offered an opportunity to see a different dimension of their workplace. We hope that nursing staff will better appreciate the value of their knowledge, their importance as professionals, and the difference they unknowingly provided through their care to the patients.

Furthermore, communication and collaboration with stakeholders were shown to be the most substantial factor in this QI project. Huddles and spontaneous meetings between the project manager, project team leaders, and management encouraged the nursing staff to participate. These meetings encouraged the staff to "own" the project and realize professional satisfaction.

Measures

Outcome measures were documented weekly; these included patient self-reports and observations by the nursing staff to assess the management of chronic constipation using a modified algorithm. These measures demonstrated improvement in clinical outcomes. Any documented subjective symptoms of constipation such as abdominal bloating, the sensation of incomplete evacuation, straining, prolonged or failed attempts to move bowels or hard stools were collected. We also retrieved data using the EHR to trace the use of rescue medications and diagnostic testing for complaints of constipation during the study period.

Pre-intervention data were collected from January 17 to January 21, 2022, and post-intervention data were collected throughout the six weeks that ended on March 4. Reviewing documentation and comparing pre-and post-intervention determined whether there were improvements in the patients' experiences by asking about the following symptoms during rounding three times a week: "Did you have any episode of difficulty with bowel movements the last two to three days? and "Did you have any episode of straining, feeling of incomplete bowel

movement, abdominal bloating, or longer period or failed attempt to move bowels or hard stools the last two days?" The responses were documented in the EHR.

Analysis

Initially, we used a quantitative analytical method. This method demonstrates improvements or outcomes of care in a skilled nursing facility using a modified algorithm for chronic constipation. The dependent variable (chronic constipation) relationship with the independent variables (MiraLAX 17 gm daily and increase in fluid intake) was evaluated using patient outcomes as documented in the EHR. Four weeks following the study, 0% documented incomplete evacuation, abdominal bloating, hard/lumpy stools, straining, or failed attempts to move bowels. Unintended positive results were the 100% improvement in documentation upon review of the EHR and the satisfaction and feeling of ownership of nursing staff.

For the short duration of the QI project, quantitative data were analyzed using a run graph to visualize results. The run graph analysis showed a significant decrease in complaints of constipation from the sample population. These complaints included incomplete evacuation, abdominal bloating, hard/lumpy stools, straining, and failed attempts to move bowels. Manual disimpaction was not included in the criteria of symptoms due to facility guidelines. In gathering data for documentation, the nursing staff used a quantified method of structured questions. These questions were 1) "When was the last time you had a bowel movement?" 2) "Do you have any abdominal bloating?" 3) "Did you have trouble in passing stool?" 4) "Did you experience hard, lumpy stools recently?" and 5) "Do you feel like you have to strain when you need to move your bowels?" These questions were answerable as “yes” or “no.” Responses were compiled in the QI project binder or forwarded to the project manager.

The qualitative study result was the human experience as reflected by the narrative statement from nursing staff (n = 21), i.e., a sense of ownership and satisfaction with the QI initiative to manage chronic constipation at their workplace.

Ethical Considerations

The University of Texas-El Paso Institutional Review Board reviewed this non-research project for approval to proceed and ethical appropriateness. The IRB recognizes that the project was designed to improve the management of constipation and implement an evidence-based screening tool for constipation and a modified algorithm for managing chronic constipation. Consent from patients and caregivers was not deemed necessary.

Results

The constipation response and treatment methods were reviewed and analyzed using the EHR report for the previous 6 weeks of the project timeline. Other answers to questions were reviewed weekly: 1) "When was the last time you had a bowel movement?" 2) "Do you have any abdominal bloating?" 3) "Did you have trouble in passing stool?" 4) "Did you experience hard, lumpy stools recently?" and 5) "Do you feel like you have to strain when you need to move your bowels?" An EHR review was conducted to evaluate the documentation of selected patients. Among those who were reviewed were documentation of bowel movements, routine assessment, and reassessment of complaints of constipation after the use of any rescue laxatives (if any), complaints of decreased number of episodes of bowel movements per week alone, or a combination of other symptoms such as the sensation of incomplete evacuation, straining, abdominal bloating, prolonged or failed attempts to move bowels, and hard stools. There was a significant reduction in the complaints after four weeks into the project following the study, the use of Rome IV criteria, and the implementation of the modified algorithm.

Documentation of bowel movements improved to 100% at three weeks. Documentation of routine assessment and reassessment increased from 50% to 100%; 0% documented incomplete evacuation, abdominal bloating, straining, hard/lumpy stools, or failed attempts to move the bowels.

Staff Satisfaction

A nurse satisfaction survey was conducted six weeks after the initial project implementation to assess the perception of the new bowel management algorithm. Nineteen nurses received the survey. We found that 100% of nurses reported satisfaction with the algorithm. Narrative feedback included 100% positive responses that included the nurses saying, "it is a good intervention and makes common sense to have a practical management of constipation."

Discussion

Summary

Objective data collected from the EHR record indicated that patients who had met the criteria for Rome IV functional constipation had a decrease in the symptoms of constipation after implementing the constipation management algorithm. There was a significant improvement in the management of constipation and discomfort due to constipation, and there were no uses for rescue medications. These findings concur with Bharucha and Lacy (2020) regarding the therapeutic possibility of using dietary fiber either as a standardized supplement or as the initial step for patients with chronic constipation. Nevertheless, these results should be received cautiously because of the low number of participants and the short duration of the project.

The post-implementation narrative survey on nurse satisfaction indicated that nursing staff felt satisfied with their role in preventing constipation in the skilled nursing unit. Narrative feedback indicated positive responses and appreciation of the project.

Interpretation

This project demonstrated that a nursing intervention using an evidence-based screening tool for constipation and a constipation algorithm caused patients to be less likely to experience constipation. Identifying the symptoms and application of the algorithm is essential. When reasonable, medications causing constipation (especially narcotics) should be discontinued. The improvement in the management of constipation, no episodes of rescue medications, and decreased discomfort by itself were most satisfying. This project concurs with Bharucha and Lacy (2020) regarding the therapeutic possibility of using dietary fiber as a standardized supplement or as the initial step for patients with chronic constipation. Patients and nursing staff must be educated regarding fiber use (Wlodarczyk et al., 2021) as a first-line approach for constipation, and if proven ineffective, pharmacology approaches can be initiated. Shahi and Cash (2015) supported a study of initial fiber use and reviewed chronic constipation.

The improvement in care prevents the necessity of rescue medications, radiologic testing, or specialty consultations unless clinically indicated. The protocol improved nursing satisfaction and provided a positive experience for patients.

Limitations

This QI project occurred in a busy skilled nursing unit and involved a relatively low number of participants; for these reasons, the results have limited generalizability. A better result can be achieved with replication with a longer duration and more participants.

Conclusions

Constipation affects 60% of those in an institution, meaning constipation is significant in healthcare. The Rome IV criteria for constipation use in this QI project for this setting and sampling population demonstrated that there is no organic etiology and is not a result of any structural or biochemical anomaly as the medical indications for their chronic constipation. Patients in a skilled nursing unit who had decreased fluid intake due to variability of reasons, increased use of opioids, lack of activities, immobility, or illness are at risk for constipation. Patients with constipation may suffer from nausea and vomiting, abdominal pain, lack of appetite, abdominal bloating, and other gastrointestinal symptoms that lead to gastric ulceration, perforation, sepsis, and death. Given the severity of the consequence, and the prevalence of constipation in the elderly population other than worsening quality of life, this QI project is essential for advance care practitioners and physicians managing aged populations in an institution. Our practice is often too busy to focus on a common complaint that affects a considerable percentage of this population. We tend to provide a temporary fix using rescue medications and other pharmaceutical interventions needed to treat constipation. The nursing staff had relied on this thinking pattern. This QI project will help improve the recognition of chronic constipation and provide practical management that is far less costly, provides more satisfaction for patients and nursing staff, and imposes fewer financial burdens on healthcare organizations.

Identification and implementation of the modified algorithm for constipation improved constipation documentation and improved participants' bowel movements. Although an opportunity for improvement was identified in some areas (i.e., documentation of other

symptoms associated with complaints of constipation), optimal nursing practice overcame these obstacles via communication, hard work, dedication, and compassion.

Other Information

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Conflicts of Interest

The project manager has no conflicts of interest to disclose.

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