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Implementation of Routine Screening with Patient Health Questionnaire 9 (PHQ-9) of Adults with Crohn's Disease

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Executive Summary

Introduction of the Problem

Inflammatory Bowel Disease (IBD) is the categorical name for the two conditions that are characterized by chronic inflammation of the gastrointestinal system; Crohn's disease (CD) and Ulcerative Colitis (UC) are the two conditions classified as IBD. There is no cure for CD; physical symptoms of CD may include, but are not limited to, abdominal pain, diarrhea, hematochezia, weight loss, fatigue, anemia, or vitamin deficiencies. The goals of CD treatment are preventing disease progression and achieving both clinical and endoscopic/histologic remission. Evaluation of medical comorbid conditions in CD is routine and considered standard of care; however routine depression screening has not been widely adopted as part of the total IBD care paradigm.

The CD disease process and the symptoms associated can range from mild to debilitating, but regardless of severity, the impact on the individual can be significant. The psychological impact of CD on the individual's quality of life (QOL), the disease process and the relationship between these psychological factors have been studied from varying perspectives over the past 20 years. Recommendations for the integration of psychological care/screening have been made, yet the adoption of routine screening as an evidence-based standard of care for CD patients has not become standard practice.

My clinical experience as an Advanced Practice Registered Nurse (APRN) working in an outpatient gastroenterology setting made clear to me the impact of psychological comorbidities on chronic conditions such as CD. I observed that depression and anxiety were consistently present in patients with CD. I spoke with other local gastroenterology physicians and advanced

practice providers, and it became apparent that CD patients were rarely, if ever, screened for depression.

My proposed recommendation for practice change was the integration of routine depression screening of adult CD patients in the outpatient gastroenterology clinic setting utilizing Patient Health Questionnaire 9 (PHQ-9). The goals of the project were to increase screening of adult CD patients with PHQ-9 during a predetermined six-week timeframe and to evaluate the provider perspectives regarding PHQ-9, comorbid depression and CD, and potential integration for practice change.

A review of literature clearly demonstrated the increased frequency and impact of depression in the CD population has been associated with alterations in disease activity, measures related to quality of life (QOL), disability, and the potential self-care deficits (Kochar, Martin, et al., 2018; Chang et al., 2017). Routine screening would assist in the identification and proper referral/treatment for addressing the depression in the adult CD population. Screening and treating/referring as appropriate may improve the clinical course of patients and have the potential to improve domains of the individuals' lives not directly measurable endoscopically, serologically, or histologically.

Conceptual Framework

The Johns Hopkins Nursing Evidence Based Practice (JHNEBP) Model was selected as the conceptual framework to guide this Doctoral project. The JHNEBP Model is rooted in evidence-based practice (EBP), which is a pillar, driver, and a core competency in today's healthcare. Inquiry, practice, and learning are the three interconnected components which comprise the JHNEBP Model. The selection of the JHNEBP was driven by the utility and foundations of the model with well-structured tools that could be implemented through the Doctoral project from

beginning to end. The conceptual model was developed for use and implementation by nurses at all levels of practice. It employs a 19-step JHNEBP process of practice question, evidence, and translation (PET). The PET process is a systematic methodology by which a practice question is solved through the identification of best evidence and translation of that best evidence into best practice (Dang & Dearholt, 2018). The JHNEBP Model and PET process were referred to at all points of this Doctoral project development to ensure standardized structured continuity was maintained throughout the project.

Literature Review

Current research demonstrates a consistent presence and prevalence of depression as a comorbidity with CD. Symptoms of depression have been identified to occur at a frequency higher in the IBD population (49%) in contrast to the non-IBD population (23%). The same study with these findings utilized items 2 and 9 from the PHQ-9 to screen for depressive symptoms and identified that 8% of CD patients screened positively for depressive symptoms (Bhandari et al., 2017). There is potential for clinically active disease to serve as the only independent risk factor for major depression when comparing clinical remission versus clinically active disease; the overall risk of major depression with active CD has been documented to be as high as 42.4% and that 33.0% suffer with mild depression (Geiss et al., 2018).

The increased prevalence of depression in not only the IBD population, but more specifically the CD population, has repeatedly been documented. This supports the implementation of a well validated depression screening tool to be utilized as part the paradigm of CD patient care. There has been no significant research reported to date about the percentage of IBD patients screened for depression routinely, but one study found that only 36% of individuals with IBD and symptoms of depression had seen a mental health professional the year preceding survey

completion (Bhandari et al., 2017). It has been reported that over 80% of providers disclosed never having asked about the impact of IBD on patient sexual life, and approximately 60% never inquired about the impact of disease on emotional state or in the workplace (Marín-Jiménez et al., 2017).

A majority of patients reported that they feel it is important for their provider to inquire during regular visits about the impact of IBD on personal relationships and psychological wellness. Patients reported that treatment for psychological conditions should be part of their care, and that inclusion of a clinical psychologist as part of their treatment team was appropriate (Marín-Jiménez et al., 2017). Qualitatively, themes and subthemes related to symptoms of anxiety and depression have been consistent; while patients have additionally expressed the desire for psychological care from a specialist familiar with the IBD disease process (Jordan et al., 2017). Participant lived experience supports the integration of routine depression screening during care through both qualitative findings and participant reported desire for psychological care from a professional with specialized IBD knowledge.

The PHQ-9 would be an ideal tool for practice integration because of patient self-administration, ease in rapid scoring, and high specificity. It is a simple rapid tool with clear criteria for depression severity. PHQ-9 focuses on the Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) for criteria for Major Depressive Disorder (MDD) (Kroenke et al., 2001). The composition and content of PHQ-9 inclusive of criteria for MDD is vital due to individuals with CD being considered at increased risk for major depression when compared with individuals with UC (Geiss et al., 2018). The use of a self-administered symptom scale, such as PHQ-9, has the benefits of time saved for patient and clinic, benefit of standardized scoring, and continuity of symptom severity monitoring (Bernstein et al., 2018).

IBD patients that screened positive with PHQ-9 were evaluated, 90% had a depression diagnosis confirmed by a psychiatrist (Byrne et al., 2017).

PHQ-9 has shown 100% sensitivity and 92.2% specificity for identification of suicidal ideation (SI) in the IBD population; substantial agreement between the SI questions in the Structured Clinical Interview for DSM-IV (SCID) and PHQ-9 has been observed (Litster et al., 2018). The presence of depression was also found to have a positive correlation with reported SI with both SCID and PHQ-9 (Litster et al., 2018). A Swedish nation-wide matched population cohort study, with an 11-year average follow up, found that individuals with IBD, CD and UC, had an increased frequency of suicide attempts, but that only the CD population had a statistically significant increase for completed suicide (Ludvigsson et al., 2021). The routine screening for depression would assist in the identification and proper referral/treatment addressing depression in this population of interest. Screening and treating/referring, as appropriate may improve the clinical course of CD patients as well as have the potential to improve domains of the individuals' lives not directly measurable endoscopically, serologically, or histologically.

Project Methods

The goals of the project were to increase depression screening of the adult CD population in the outpatient gastroenterology clinic setting using PHQ-9, and to evaluate the provider perspective related to perceptions of depression and CD, as well as PHQ-9 utility. The tools for both project goals were pretest and posttest online surveys via Qualtrics, which measured the provider's perspective on utility/integration of the PHQ-9 and provider report of total PHQ-9 screenings completed. Both pre and posttest surveys were completed anonymously via an online Qualtrics survey link. Each survey was composed of five questions scored on a five-point Likert

Scale. Pretest and posttest each had two additional open-ended questions for editorial response. A single descriptive question regarding professional designation as either MD, DO, APRN, or PA completed the survey. Identifying provider designation may allow for future research to identify potential opportunities or obstacles to practice change in specific provider categories.

The primary methods to evaluate the practice change implementation were determined to provide a mix of quantitative and qualitative data for interpretation. Quantitative data in the form of total number of PHQ-9 screening tools completed. Pre and posttest survey scores were evaluated and compared for any changes in perceptions identified through changes in weight on the Likert scale. Qualitative data was obtained from provider responses to open ended questions. Descriptive data obtained was only related to provider designation as a physician or advanced practice provider.

Evaluation

This evidence-based practice change project implementing depression screening with Patient Health Questionnaire 9 (PHQ-9) of adults with Crohn's disease (CD) took place in an outpatient gastroenterology clinic located in a small city in Central Illinois, approximately 155 miles northeast of St. Louis and 125 miles southwest of Chicago. The implementation of the project took place from July 12, 2021, to August 20, 2021.

The location of the project was an outpatient gastroenterology clinic with a total of five providers at the time of implementation: two APRNs and three physicians. One of the APRNs at the practice served as the external stakeholder for this project. Providers were recruited for participation through secure emails sent four, two, and one weeks prior to implementation. Educational materials related to the project were disseminated via email. Pre and posttest survey links were provided in emails. The providers were offered an option to meet via online platform

during all phases of implementation, but no meetings were requested. All email communications provided an “opt out” opportunity from future emails; no “opt out” emails were received at any time during this project.

The evidence-based practice project gathered information through provider pretest and posttest surveys to measure provider perspective and report the number of PHQ-9 completed. The project received classification as a “Not Human Research” Quality Improvement Project (QIP) from Southern Illinois University Edwardsville Internal Review Board (IRB) on June 3, 2021.

Results/Interpretation of Findings

A total of three of the five providers participated in the project: two physicians and one APRN. All participants completed the pretest and posttest surveys. A specific question on the pretest inquired about the estimated number of CD patients screened each month for depression. The results indicated that prior to this project no CD patients were screened for depression by the participating providers (“none”, “0”, “We do not routinely screen...”). The posttest survey inquired specifically about the number of adult CD patients screened with PHQ-9 during the 6-week practice change implementation; the combined total for all three providers was five. The goal to increase depression screening was met for this project with a total of five adult CD patients screened with PHQ-9.

The secondary goal, evaluation of provider perspectives regarding comorbid depression and CD, and the PHQ-9 with respect to ease of use, scoring, and plans for continued use were evaluated through pretest and posttest surveys. Surveys were created and administered via Qualtrics links included in email communications. Each survey was composed of five questions scored on a five-point Likert Scale. Pretest and posttest each had two additional open-ended

questions for editorial response. A single descriptive question regarding professional designation as either MD, DO, APRN, or PA began the surveys. The questions that remained the same on both surveys were:

1. Depression occurs at an increased frequency in the adult Crohn's disease population compared with the general population.
2. Routine screening for depression is the responsibility of all healthcare providers regardless of specialty.
3. I feel comfortable with identifying symptoms/diagnostic criteria of depression.
4. Routine depression screening could be integrated into my current practice without significant increase in resources or significant increased office visit time.
5. Pre: I am open to adding routine depression screening into my routine care of my adult patients with Crohn's disease.

Post: I plan to add routine depression screening into my routine care of my adult patients with Crohn's disease.

The lowest score on any of the Likert formatted questions was neutral. Review of changes in provider perspective from pretest to posttest revealed a one-point positive shift of one provider in the answers for question one, two, and four; there was a one-point positive shift of two providers for question three. The results of the surveys indicated that the gastroenterology providers did believe that depression occurred at an increased frequency in adults with CD, routine depression screening is the responsibility of all healthcare providers, and positivity related to integration of routine depression screening into current practice. The most significant positive shift was seen in the provider level of comfort for identifying symptoms/diagnostic criteria for depression with two providers increasing their reported level of comfort by one point on the Likert scale. Two

providers provided editorial responses reporting an increased familiarity with PHQ-9 because of participation in the project. PHQ-9 was identified by two providers as the tool they plan to use for any future depression screening, with one provider noting that electronic PHQ-9 is available through the electronic medical record and will be directly added to the patient's chart. These results indicate that a positive impact on practice occurred for the participating providers.

Limitations

At the time of recruitment and implementation all in-person meetings were suspended per the organization due to the SARS-CoV-2 Pandemic with limited in-person clinic visits only related to direct patient care. Routine care visits via a virtual platform had been widely adopted by the time of implementation at this clinic per stakeholder report. The opportunity to provide patients with a self-administered PHQ-9 was absent from virtual encounters and this may have potentially decreased the encounters where the practice change was implemented.

The population of focus for this project was extremely specific and could be considered a sub-population of an already limited population of adults with IBD; it is estimated that 1.2% of adults in the Midwestern United States (U.S.) have a diagnosis of IBD (Dahlhamer et al., 2016) and the CD population represents only a segment of that estimate. This could be considered a limiting factor which was amplified by the limitation of a single clinic setting. The timeframe limitation to six weeks for implementation additionally contributed to the impact of the evidence-based practice. As noted above, the population of adults with CD is a fraction of the subspecialty practice; the brief timeframe was a limiting factor that directly impacted the volume of the population of interest that could be touched by this practice implementation. The implementation also occurred in late summer and there was increased potential for providers to be off work for vacation during that period. Although 50% (three) of the providers in the practice participated, it

could be postulated that the ability to meet and educate about the project in person prior to implementation could have increased the number of providers willing to participate.

Highlighting the limitations of this project elucidates potential opportunities for future research. Each of the limiting factors could be addressed effectively and increase data in a manner which could potentially be statistically significant for those factors which were limited by the volume of data. Support for expanded future research is underscored by current literature identifying increasing IBD prevalence (Luther & Dave, 2019) observed by prevalence estimates of 0.9% of U.S. adults in 1999 (Nguyen et al., 2014) increasing to 1.3% in 2015 (Dahlhamer et al., 2016), and figures from 2007-2016 Population-Based National Databases estimating that 170-219 per 100,000 adults in the U.S. have a diagnosis of CD identified by International Classification of Diseases, Ninth Revision (ICD-9) codes (Ye et al., 2018).