Screening for psychosocial factors in patients with irritable bowel syndrome

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RESUMEN

Los factores psicosociales desempeñan un papel prominente tanto en el inicio como en la expresión de los síntomas del síndrome del intestino irritable (SII), particularmente entre los individuos que consultan a los gastroenterólogos. Aunque muchos pacientes con SII responden al tratamiento médico o dietético convencional, los resultados son menos positivos en los pacientes con síntomas gastrointestinales severos y/o problemas psicosociales significativos. El cribado sistemático de los pacientes con SII que asisten a una clínica ambulatoria gastrointestinal puede ser útil para identificar a las personas que tienen menos probabilidades de responder a la terapia convencional. En este artículo se plantean recomendaciones prácticas para los procedimientos de cribado y referencias a profesionales de la salud mental. (NeuroGastroLatam Rev. 2017;1: 144-155)

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ABSTRACT

Psychosocial factors play a prominent role in both the onset and expression of irritable bowel syndrome (IBS) symptoms – particularly among those individuals who consult gastroenterologists. Although many patients with IBS respond to conventional medical or dietary treatment, outcomes are less positive for patients with severe gastrointestinal (GI) symptoms and/or significant psychosocial problems. Routine screening of IBS patients attending a GI outpatient clinic can be helpful for identifying those individuals who are less likely to respond to conventional therapy. Practical recommendations for screening procedures and referrals to mental health professionals are discussed.

Key words: Psychosocial factors. Risk assessment. Anxiety. Depression. Health-related quality of life.

INTRODUCTION

Irritable bowel syndrome (IBS) is a painful and often debilitating functional gastrointestinal disorder (FGID) with a worldwide prevalence of approximately 11%¹. IBS imposes significant personal and economic costs, which manifests in both lost productivity and high rates of healthcare utilization^{2,3}. Although IBS is a benign medical disorder, the quality of life (QOL) of patients is similar to that of patients with life-threatening medical diseases^{4,5}.

Lacking a reliable biomarker, IBS is best understood from a biopsychosocial perspective⁶. Whereas biomedical models explain symptoms solely in terms of physical pathology, the biopsychosocial model holds that biological processes (e.g., genetic predisposition and GI physiology), developmental factors (e.g., early life experiences), social environment (e.g., reinforcement contingencies and stress), cognitive processes (e.g., patient

beliefs about their symptoms), and behavior (e.g., maladaptive coping) interact to facilitate and maintain IBS symptoms⁷. There are at least four pathways by which psychosocial factors impact IBS. First, psychosocial factors such as trauma increase risk for the development of IBS⁸. Compared to healthy controls, IBS patients are more likely to report a history of physical or sexual abuse⁹. Furthermore, among individuals with IBS, abuse history is related to greater GI symptom severity, psychological distress, and life interference¹⁰⁻¹³.

Second, stress affects central nervous system processes that mediate gut sensation and function. Although stress also affects gut function in healthy individuals, patients with IBS demonstrate greater stress sensitivity with regard to gut motility, visceral perception, and hypothalamic-pituitary-adrenal axis hormone levels¹⁴. One central process is GI symptom-specific anxiety, which is regarded as a prominent endogenous stressor that can

perpetuate IBS symptoms even in the absence of external stress¹⁵.

A third pathway by which psychosocial factors impact IBS is through maladaptive behaviors that impact health outcomes. These behaviors are often adopted in response to idiosyncratic beliefs that patients have about their symptoms. Examples include overestimating the threat value of somatic symptoms (i.e., “catastrophizing”) and underestimating one’s ability to control or cope with these symptoms (i.e., low “self-efficacy”). Such beliefs often lead patients to avoid situations in which (1) GI symptoms are expected to occur (e.g., eating at a new restaurant) or (2) the consequences of symptoms are expected to be high (e.g., situations where it could be embarrassing or difficult to leave to use the restroom). Avoidance, in turn, serves to reinforce maladaptive cognitions and behaviors¹⁶. Similar cognitive-behavioral models of symptom responding have been developed in multiple conditions related to IBS, including panic disorder¹⁷ and chronic pain¹⁸, suggesting that avoidance maintains symptoms across multiple patient populations.

A fourth mechanism by which psychosocial factors impact IBS is through social learning. Research conducted with both pediatric¹⁹⁻²³ and adult patient populations^{24,25} indicates that family members’ responses prospectively predict patient symptoms and illness behavior. Thus, well-intentioned family members can unintentionally reinforce the acquisition of maladaptive coping strategies – including excessive avoidance of situations associated with threat^{20,25}.

THE VALUE OF SCREENING

As others have argued¹⁴, early identification of patients whose symptoms are stress-sensitive or who exhibit maladaptive coping is key to providing more effective treatments. While some patients’ symptoms resolve subsequent a positive diagnosis and initiation of conventional medical treatment, those with significant psychosocial problems typically benefit from treatment that integrates medical management and behavioral support. Building on the concept of GI “red flags” (i.e., indicators of possible underlying organic pathology), researchers have coined the term “yellow flags”²⁶ to refer to psychosocial factors associated with poor response to standard treatment – namely: severe pain, clinically significant anxiety, clinically significant depression, trauma history, maladaptive coping, and symptom-induced activity interference. Yellow flags can be used to identify patients whose response to pure biomedical treatments is likely to be limited and who will benefit from a multimodal approach. Additional psychosocial factors associated with clinical outcomes include overall IBS symptom severity, coping self-efficacy, GI-specific anxiety (GSA), and QOL. Validated tools for assessing these factors are presented in Table 1.

OPTIMIZING SCREENING EFFORTS

Clinical gastroenterologist can minimize barriers to screening by integrating assessment into routine clinical practice. Brief, validated screening tools can be added to other clinic forms for completion before the initial consultation. Instructions should include a succinct and clear

TABLE 1. Screening tools for assessing psychosocial factors related to clinical outcomes in IBS

Yellow flags	Measure (# of items)
Abdominal pain	Numeric Rating Scale (1) Abdominal Pain Index (4)
Anxiety	PROMIS Anxiety SF (4) GAD Scale (7)
Depression	PROMIS Depression SF (4) CES-D (10) Patient Health Questionnaire (9)
Trauma	SPAN (if trauma history endorsed; 4)
Maladaptive coping	CSQ (abbreviated catastrophizing subscale; 2)
Activity interference	Healthy Days (4) PROMIS Pain Interference SF (4)
Additional psychosocial factors	
IBS symptom severity	IBS Severity Scoring System (5) Gastrointestinal Rating Scale (13) UCLA GI Symptom Severity Scale (1)
Coping self-efficacy	PROMIS - Managing Symptoms SF (4)
GI-specific anxiety	Visceral Sensitivity Index (15)
Quality of life	IBS - Quality of Life (34)

PROMIS: Patient-Reported Outcomes Measurement Information System;
SF: Short Form;

GAD: Generalized Anxiety Disorder;

CES-D: Center for Epidemiological Studies of Depression;

CSQ: Coping Strategies Questionnaire;

IBS: Irritable bowel syndrome;

GI: Gastrointestinal

rationale for why the requested information is important to patient care and describe each of the constructs being assessed in a non-stigmatizing way (e.g., “mood” as opposed to “depression”). Results should be scored, reviewed with the patient, and documented in the medical record. To optimize the value of screening measures, readministration at follow-up appointments is helpful.

PHYSICAL HEALTH FACTORS

Abdominal pain

Pain is a primary reason that patients seek medical care and can be assessed in a number

of ways. A systematic review of instruments to assess abdominal pain in IBS can be found elsewhere²⁷. Perhaps the simplest method is the 10-point Numeric Rating Scale (NRS), in which patients rate their abdominal pain severity from 1 (no pain) to 10 (the worst pain imaginable). The NRS can be used for repeated end of day or longer (past 24 h; 1 week) recall periods. The typical recall period used in clinical settings is 1 week. The NRS has good construct validity, discriminant validity, and clinical responsiveness²⁸. A sample of 277 adults with moderate-to-severe IBS was found to have a mean NRS score of 4.5 (standard deviation [SD] = 2.5)²⁸, suggesting that scores above 5 may indicate moderate-to-severe IBS. Research on other chronic pain populations

have suggested that NRS scores of ≤ 5 , 6-7, and ≥ 8 correspond to mild, moderate, and severe pain, respectively²⁹.

A limitation of the NRS is that it assesses only a single dimension of pain – that is, intensity. By contrast, the Abdominal Pain Index (API)³⁰ is a 4-item measure that assesses the frequency, duration, and intensity of abdominal pain. The API has been validated for use in children, adolescents, and adults^{30,31}. In pediatric samples, API score has been shown to significantly predict the presence of an FGID 9 years later³⁰. Scoring involves converting items to a 0-5 scale, calculating a mean, and then converting to a 0-4 scale³⁰. Among older adolescents with functional abdominal pain, the 90th percentile was 3.3 for males and 3.7 for females³⁰; these could make for conservative cut-offs indicating a high likelihood of severe and frequent abdominal pain. While the API is more complicated than the NRS, it has the advantage of assessing multiple dimensions of the pain experience.

The IBS Severity Scoring System (IBS-SSS)³² is a 5-item scale that assesses abdominal pain severity, abdominal pain frequency, abdominal distension severity, satisfaction with bowel habits, and life interference using a visual analog scale. Participants are instructed to respond based on how they “currently feel (i.e., over the last 10 days or so).” Each question generates a maximum score of 100; responses are summed for a total possible score of 500 indicating the greatest possible symptom severity. Scores above 300 indicate severe IBS symptoms³² that may not respond sufficiently to conventional medical treatments. The Gastrointestinal Rating Scale^{33,34} consists of 13 items that assess problems with satiety,

abdominal pain, diarrhea, constipation, and bloating. The response scale ranges from 1 (no discomfort at all) to 7 (very severe discomfort). Item responses are averaged to derive a total score. An intuitive approach to identifying patients with severe symptoms could be to consider total scores above 4 (labeled “moderate discomfort”) or 5 (“moderately severe discomfort”) as severe enough to warrant a multimodal approach. Alternatively, a very simple approach to assessing GI symptom severity is the single item 21-point UCLA GI Symptom Severity Scale³⁵ (UCLA SSS). The UCLA SSS asks patients to rate their symptoms during the past week on a scale from 0 (no symptoms) to 20 (most intense symptoms imaginable). In a sample of 234 adults with moderate-to-severe IBS, the mean UCLA SSS score was 11.1 with a SD of 3.9³⁶. Thus, scores above 11 may indicate IBS symptoms in the “severe” range.

PSYCHOSOCIAL FACTORS

Anxiety

Anxiety is the most common psychological complaint among patients with severe IBS³⁷. Anxiety can increase attention to somatic symptoms, lead to more frequent health-care utilization, and impact family and social relationships. Individuals with high levels of anxiety are predisposed to a number of unexplained medical symptoms, sometimes referred to as “somatization.” A number of brief measures for assessing anxiety are available. The Patient-Reported Outcomes Measurement Information System (PROMIS)^{*} Anxiety Short

* All PROMIS measures can be accessed via <http://www.healthmeasures.net/>

Form-4³⁸ assesses several dimensions of anxiety including fear, high focus on anxiety, intense worry, and uneasiness. Item responses range from 1 (never) to 5 (always). Responses are summed to create a total score. A total score of 11 or higher indicates a degree of anxiety greater than 84% of the general adult population³⁹. A child version is available, as are translations to at least nine other languages. The Generalized Anxiety Disorder (GAD)-7⁴⁰ scale is another option that is quick to administer, score, and interpret. GAD is the most common anxiety disorder among IBS patients seeking treatment³⁷, which is one advantage of using the GAD-7 in this population. Respondents indicate how often they have been bothered by 7 symptoms during the past 2 weeks on a scale from 0 (not at all) to 4 (nearly every day). Symptoms included are “feeling nervous, anxious or on edge”, “not being able to stop or control worrying”, “worrying too much about different things”, “trouble relaxing”, “being so restless that it’s hard to sit still”, “becoming easily annoyed or irritable” and “feeling afraid as if something might happen.” Responses are summed to create a total score. A cut point of 10 or greater has been shown to optimize sensitivity and specificity for identifying GAD. Roughly 89% of patients with GAD have scores of ≥ 10 , while 82% of patients without GAD have scores < 10 . Scores of 15 or greater indicate severe GAD symptoms⁴⁰.

Depression

The PROMIS Depression Short Form-4³⁸ assesses negative mood and cognitions. As with other PROMIS measures, responses are summed to create a total score. A score of 11

or greater indicates that the individual endorses a degree of depression $> 84\%$ of the general population. Another useful measure is the Center for Epidemiological Studies of Depression (CES-D)^{41,42}. The 10-item version of this scale assesses mood, feelings of guilt and worthlessness, helplessness and hopelessness, psychomotor retardation, appetite loss and sleep disturbance. Patients describe the frequency of symptoms over the past 7 days using a scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Items are summed to create a total score. A total score ≥ 10 indicates clinically significant depression. The Patient Health Questionnaire (PHQ-9)⁴³ consists of 9 items that correspond to the diagnostic criteria for a major depressive episode from the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000). The PHQ-9 is commonly used because of its simplicity and good psychometric properties. The recall period is the past 2 weeks, and response choices range from 0 (not at all) to 3 (nearly every day). Responses are summed to create a total score. Total scores ≥ 10 indicate moderate depression; scores ≥ 20 indicate severe depression. When administering the PHQ-9, it is important that the response to item 9 (which assesses suicidal ideation) is checked before the patient leaves the clinic. If any response other than 0 is given for that item, a risk assessment is indicated to confirm patient safety.

Trauma

Initial screening for trauma typically consists of a yes/no question⁴⁴ – for example, “Do you have a history of trauma or abuse, including

physical or sexual abuse?" When a history of trauma is endorsed, further assessment is indicated to determine the presence and severity of current trauma-related symptoms⁴⁴. One assessment tool appropriate for this purpose is the SPAN⁴⁵, a validated 4-item scale derived from the Davidson Trauma Scale⁴⁶. The measure's name is an acronym for the four symptoms it assesses (startle, physically upset by reminders, anger, and numbness). The SPAN has shown good sensitivity and specificity in a range of populations including adults with mixed trauma⁴⁷, U.S. veterans⁴⁸, women seeking routine gynecologic care⁴⁹, and women with chronic pelvic pain⁵⁰. Item responses range from 0 to 4 and are summed to create a total score. Total scores of 5 or greater indicate a positive screen for posttraumatic stress disorder and warrant a referral to mental health services.

Maladaptive coping

Coping is generally defined as an intrapsychic or action-oriented effort to manage a stressor⁵¹. In the context of chronic pain, coping refers to efforts to tolerate, adjust to, or reduce pain. Interest in pain coping comes from observations that for some individuals, chronic pain results in considerable disability, whereas others adjust fairly well. Research indicates that much of this variation can be attributed to cognitive and behavioral coping strategies⁵². Pain catastrophizing refers to exaggerated negative thinking about the meaning and consequences of pain. Catastrophizing has been linked to greater pain intensity, pain-related disability, emotional distress, and health-care utilization. Catastrophizing can be measured using a 2-item abbreviated

version⁵³ of the catastrophizing subscale of the Coping Strategies Questionnaire⁵⁴. Participants are asked to indicate how they typically think or feel during an episode of pain. Response choices range from 0 (never think or feel that) to 6 (always think or feel that). Scores are summed to create a total score. Items for the 2-item scale are: "It is terrible and I feel it is never going to get any better" and "I feel I can't stand it anymore." The 2-item scale has good psychometric properties, appears sensitive to treatment and is likely well-suited to busy clinical settings⁵³.

Coping self-efficacy

Coping self-efficacy is defined as one's belief in one's ability to cope with a specific stressor⁵⁵. In the context of chronic illness, relevant domains of coping self-efficacy include the patient's confidence in his/her ability to (1) control or reduce physical symptoms ("problem-focused" coping self-efficacy), (2) accept and adjust to symptoms ("emotion-focused" coping self-efficacy), and/or (3) engage in daily activities despite symptoms. Self-efficacy expectations determine whether coping will be attempted, the amount of effort that will be expended in the attempt, and how long the individual will persist in the face of obstacles and aversive experiences^{56,57}. Research confirms that coping self-efficacy improves outcomes in patients with chronic health conditions⁵⁸⁻⁶⁰ including IBS⁵⁷. However, the goodness-of-fit between the stressor and the type of coping is also important^{55,61-64}. While active (problem-focused) approaches are more effective for coping with controllable stressors, emotion-focused coping (e.g., acceptance) is more adaptive for adjusting to uncontrollable

stressors. Thus, patients with high self-efficacy for both problem- and emotion-focused coping and who are able to apply these strategies flexibly have the best outcomes⁶⁵. Adapted from the pediatric Pain Beliefs Questionnaire⁶⁶, example items for assessing problem- and emotion-focused coping self-efficacy (respectively) might be: “When I have bad pain or GI symptoms, there are ways I can get it to stop” and “I know I can handle it no matter how bad my symptoms are.” A validated tool for assessing self-efficacy for engaging in daily activities is the PROMIS-Managing Symptoms Short Form-4⁶⁷, which measures a patient’s confidence that he/she can manage symptoms and keep them from interfering with relationships and other aspects of daily life.

GI-specific anxiety (GSA)

GSA refers to the fear of GI symptoms (e.g., abdominal pain or diarrhea)³⁶ due to anticipation of aversive physical, psychological, or social consequences. GSA is thought to heighten central nervous system responsivity toward potentially threatening visceral stimuli or their cues, cause excessive avoidance of activities or situations where GI symptoms are expected to occur, and ultimately increase symptom frequency and intensity³⁶. Regarded as a marker of over-responsiveness to visceral sensations, GSA is believed to aggravate symptoms through alterations in autonomic nervous system activity³⁶. In a study of 234 patients in which the impact of a variety of physical and psychological variables was investigated, GSA was the most robust predictor of QOL impairment³⁶. A validated tool for measuring GSA is the 15-item Visceral Sensitivity Index¹⁵, which assesses worry, hypervigilance, and

heightened focus on GI sensations. Items are rated on a scale from 0 (strongly disagree) to 5 (strongly agree). Responses to negatively worded items are reverse scored, then items are summed to create a total score. In a sample of 100 patients with IBS, the mean total score was 36.5 (SD = 18.5)¹⁵. Thus, a total score of 55 or higher may indicate a degree of GSA >84% of IBS patients.

Quality of life (QOL)

Health-related QOL is increasingly recognized as a critical health outcome, particularly for benign medical illnesses like IBS whose impact (and treatment response) is gauged by its daily burden. The IBS-QOL^{68,69} is a 34-item measure that assesses perceived impact of IBS on eight QOL domains (dysphoria, interference with activity, body image, health worry, food avoidance, social reaction, sexual dysfunction, and relationships). Each item is scored on a scale from 1 (not at all) to 5 (extremely/a great deal). Items are summed and transformed to a 0-100 scale in which 100 indicates the maximum QOL. The IBS-QOL demonstrates high internal consistency (Cronbach’s alpha = 0.95) and reproducibility (ICC = 0.86)⁶⁹. Mean IBS-QOL score in a sample of 156 adults with moderate-to-severe IBS was 65.84 (SD = 19.92)⁶⁸, suggesting that IBS-QOL scores ≤65 may indicate significant QOL impairment due to IBS symptoms.

Activity interference

A simple approach to assessing both QOL and symptom-related activity interference is the 4-item Healthy Days measure. Developed

by the Centers for Disease Control and Prevention⁷⁰, the Healthy Days measure asks respondents to indicate the number of days when their (1) physical health and (2) mental health was not good, using a 30-day recall period. Additional items ask respondents to rate their overall health from poor to excellent and to estimate the number of days in which poor physical or mental health kept them from doing their usual activities. The number of physically or mentally unhealthy days over the previous 30 appears less confounded by emotional distress compared to other QOL measures⁵. An alternative tool for brief assessment of activity interference is the PROMIS Pain Interference Short Form – 4, which has been validated in diverse clinical populations^{71,72}. If indicated, the word “pain” in this measure could be substituted with “abdominal pain or other GI symptoms” to more fully capture the range of potentially activity interfering symptoms experienced by individuals with IBS.

REFERRING PATIENTS TO A MENTAL HEALTH PROFESSIONAL

When a yellow flag or other relevant psychosocial problem is identified, the clinician may help to normalize the patient’s experience by explaining that such issues are common in individuals with IBS. Next, brief education on the relationship between stress and GI symptoms can be useful. As in any doctor-patient discussion, a motivational interviewing approach⁷³ is recommended to determine the patient’s openness to learning about the biopsychosocial model. The clinician may also take this opportunity to acknowledge the difficulty that IBS symptoms

may be having on the patient’s daily life. If the patient expresses interest, a referral to a mental health professional with expertise in chronic pain or FGIDs is warranted. Patients who do not endorse yellow flags but report unresolved GI symptoms may also benefit from such a referral to help them better self-manage symptoms^{74,75}. Patients often interpret a mental health referral as an indication that the gastroenterologist believes they are “crazy,” malingering, or that the symptoms are “all in their head.” Thus, the clinician should explicitly state that she/he believes that the patient’s symptoms are real and that a growing body of rigorous scientific evidence supports the efficacy of behavioral treatments for improving GI symptoms, emotional well-being, and daily functioning in IBS⁷⁶⁻⁷⁹. If appropriate, the physician may emphasize that while behavioral treatment may not eliminate GI symptoms, psychotherapy is useful for learning strategies to cope with stress – including the stress of a chronic illness such as IBS. Thus, therapies such as cognitive behavior therapy (CBT) are highly effective for helping patients reduce the negative impact of symptoms on their lives⁷⁹. Skeptical patients may be more likely to engage when behavioral treatment is presented as a complementary form of chronic disease management that has been applied successfully to multiple other “real” medical problems with no simple cure (e.g., hypertension, diabetes, and arthritis). Characteristics of patients who are likely versus unlikely to benefit from a mental health referral are presented in Table 2.

A variety of psychological therapies have been developed for IBS, and multiple meta-analyses support their efficacy⁷⁷⁻⁷⁹. The

majority of research has been conducted on CBT, which aims to teach patients practical cognitive and behavioral techniques for managing IBS symptoms and related distress. A recent meta-analysis found no significant difference in the efficacy of three major therapeutic modalities (CBT, hypnosis, and relaxation) for reducing GI symptoms⁷⁸. However, CBT appears more effective than other psychological modalities at improving daily functioning⁷⁹. The largest improvements in both GI symptoms and functioning were observed for a CBT intervention that emphasized systematic exposure to IBS symptoms⁸⁰. It is important for gastroenterologists to identify experienced local mental health professionals and to develop relationships with these professionals to facilitate an integrated treatment approach that optimizes outcomes.

BARRIERS TO SCREENING

Several barriers to routine screening for psychosocial factors in IBS may present themselves. Clinicians may lack familiarity with screening tools, believe that screening is overly time-consuming or expensive, be uncertain of how to treat someone with high

scores, or lack confidence that screening will positively inform treatment. The latter may stem from difficulty in broaching psychologically sensitive topics or from not knowing where to send patients when a referral is indicated. Furthermore, clinicians may fear that personal questions or a mental health referral would be necessarily offensive, embarrassing, or open a “can of worms” that they are ill prepared to address. Some clinicians may lack confidence that the patient will comply with a recommendation based on screening. These factors should be weighed against the potential benefits of screening to improve efficiency and efficacy of patient care. In our experience, patients typically appreciate the opportunity to share psychosocial aspects of their illness experience, provided the clinician conveys confidence that their symptoms are “real” and actionable. Acknowledgment of the frustration and daily burden of IBS can go a long way in strengthening therapeutic alliance, treatment compliance, and outcomes.

CONCLUSION

Psychosocial issues play an important role in the expression of IBS – particularly among those patients who seek treatment in tertiary care settings. Gastroenterologists can improve efficiency and quality of care through routine screening for psychosocial factors that predict clinical outcomes. Psychosocial “yellow flags” can identify patients who are likely to need a multimodal approach, thereby decreasing the disappointment that arises when medical treatments fall short of therapeutic objectives. Once such individuals are identified, appropriate referrals can be made

TABLE 2. Positive and negative indicators for a mental health referral

Referral advised if the patient	Referral not advised if the patient
Recognizes a relationship between stress and GI symptoms	Has strong disease conviction and commitment to finding a medical “fix”
Has a preference for non-drug treatment	Does not believe in the therapeutic potential of behavioral treatments
Is motivated to assume an active role in treatment	Is not motivated to assume an active role in treatment

GI: Gastrointestinal

to professionals with expertise in behavioral treatment for chronic pain or FGIDs. Even in cases where a referral is not indicated, such routine screening can facilitate discussion of sensitive subjects, provide valuable insight into the complexity of a patient's symptom profile, and inform clinical decision-making to ultimately improve outcomes.

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