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RESEARCH

Barriers and facilitators to implementation and sustainment of guideline-recommended depression screening for patients with breast cancer in medical oncology: a qualitative study

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Abstract

Objectives Implementation of guideline-recommended depression screening in oncology presents numerous challenges. Implementation strategies that are responsive to local context may be critical elements of adoption and sustainment. We evaluated barriers and facilitators to implementation of a depression screening program for breast cancer patients in a community medical oncology setting as part of a cluster randomized controlled trial.

Methods Guided by the Consolidated Framework for Implementation Research, we employed qualitative methods to evaluate clinician, administrator, and patient perceptions of the program using semi-structured interviews. We used a team-coding approach for the data; thematic development focused on barriers and facilitators to implementation using a grounded theory approach. The codebook was refined through open discussions of subjectivity and unintentional bias, coding, and memo applications (including emergent coding), and the hierarchical structure and relationships of themes.

Results We conducted 20 interviews with 11 clinicians/administrators and 9 patients. Five major themes emerged: (1) gradual acceptance and support of the intervention and workflow; (2) compatibility with system and personal norms and goals; (3) reinforcement of the value of and need for adaptability; (4) self-efficacy within the nursing team; and (5) importance of identifying accountable front-line staff beyond leadership "champions."

Conclusions Findings suggest a high degree of acceptability and feasibility due to the selection of appropriate implementation strategies, alignment of norms and goals, and a high degree of workflow adaptability. These findings will be uniquely helpful in generating actionable, real-world knowledge to inform the design, implementation, and sustainment of guideline-recommended depression screening programs in oncology.

Trial Registration ClinicalTrials.gov #NCT02941614

Keywords Implementation strategies · Qualitative research · Adaptation · Depression screening · Cancer

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Background

Effective implementation and sustainment of guideline-recommended depression screening in oncology present numerous challenges [1]. A rich body of evidence suggests that patients diagnosed with breast cancer have significant psychosocial health needs that are frequently unrecognized and/or unaddressed [2, 3]. Within the breast cancer patient population, the global prevalence of clinical depression is estimated to be 32% [4]; however, depressive symptoms remain under-detected and undertreated [2, 5]. Effective depression screening programs combined with referral to appropriate behavioral health services have been shown to have a positive impact on identification and referral of depressed breast cancer patients [6] and screening is now recommended by the American Society of Clinical Oncology and other oncology professional societies and accrediting bodies [7–9].

Depression screening programs can be considered a multilevel complex intervention requiring training, education, and behavior change at the patient, clinician, and system levels [10]. Unfortunately, implementation of depression screening programs has not been uniformly successful, with administrators and clinicians reporting issues with acceptability, usefulness, and sustainability [11], as well as lack of focus on local context and resources relevant to implementation of complex interventions [12]. Studies employing implementation science designs, frameworks, or strategies are lacking, and research is urgently needed to identify and address multilevel determinants associated with successful implementation of guideline-recommended depression screening programs in oncology [13]. Implementation strategies that are feasible and responsive to local context may be critical elements of program adoption and sustainment [10, 12].

The purpose of this study was to evaluate if a depression screening program for patients diagnosed with breast cancer in a community medical oncology setting using tailored implementation science-guided strategies resulted in a greater proportion of appropriate referrals to behavioral health compared to an education-only strategy. Here we report the qualitative research findings regarding perceived appropriateness, feasibility, and sustainability of the program.

Methods

We conducted a qualitative study nested within a larger cluster randomized clinical trial within Kaiser Permanente Southern California (KPSC), an integrated healthcare system providing comprehensive care to over 4.5 million members. All patients with a new diagnosis of breast cancer and a consultation in medical oncology between 10/1/2017 and 09/30/2018 at 6 participating sites were included in the main trial; sites were randomized to intervention or control condition according to the trial protocol. The main trial used an effectiveness-implementation type 2 hybrid study design [14] and a pragmatic approach guided by the Pragmatic-Explanatory Continuum Indicator Summary-2 [15, 16]. The depression screening program followed guideline recommendations [17], offering screening with a validated instrument, the Patient Health Questionnaire-9 item (PHQ-9), to all newly diagnosed patients with breast cancer [18, 19].

In addition to baseline education delivered to all sites, we employed three implementation strategies at sites randomized to intervention condition within the parent trial: tailored audit and feedback, implementation facilitation, and adaptable workflow: (1) *audit and feedback* (A&F)—A&F is often a necessary element for implementing practice change but may not be sufficient to sustain change alone [20]. Intervention sites received weekly emails with tailored anonymized audit and feedback reports of progress compared to the other sites in tabular and graph form, including proportion eligible for screening, proportion screened, score distribution, and proportion appropriately referred; (2) *implementation facilitation*—facilitation is a guided interactional process to aid implementation and sustainment of practice change [21]. A nurse researcher led the facilitation activities, consisting of monthly teleconference check-ins and quarterly in-person site visits to address issues. Facilitation data captured in spreadsheets collected information on site adaptations; (3) *adaptation*—clinical workflows at each site were adapted to address unique local context and resources; thus, unlike most clinical trials, the workflows and materials at each site were allowed to differ.

The primary and secondary outcomes of the parent trial related to screening, referral, and outpatient utilization have been previously reported [22]. Briefly, we found that tailored implementation strategies resulted in a greater number of patients screened and appropriately referred. Herein, our qualitative findings are reported using the criteria for reporting qualitative research (COREQ) (Supplemental Appendix 1). This study received approval from the KPSC Institutional Review Board (IRB #11103). We obtained verbal consent from all participants.

Qualitative data collection

The Consolidated Framework for Implementation Research (CFIR) was used to guide critical elements of the design, data collection, and analysis. This included selection of the screening instrument and workflow adaptability (CFIR domain: *intervention characteristics*), engagement of key clinical and administrative stakeholders during study development and planning (domain: *inner setting, process*), and building on clinician self-efficacy and knowledge regarding the program (domain: *individual characteristics*) [23, 24]. We also used the CFIR to guide single-occurrence semi-structured qualitative interviews with patient, clinician, and administrative stakeholders to assess the acceptability and feasibility of the program as well as the potential for a sustainment. Questions were mapped to relevant CFIR constructs (Supplemental Appendix 2). We created separate guides for patients, nurses/medical assistants, department administrators (DAs), physicians, and oncology-based licensed clinical social workers (LCSWs) to accommodate the varying roles with different relational perspectives on the central topic [25]. All clinician and physician guides contained questions focused on experience with the screening, perceived alignment with clinic goals, and suggestions. However, the nurse guide contained additional questions on the screening workflow; department administrators were specifically asked about team feedback, their views of the study design/quality, and stakeholder champions; physicians and social workers answered specific questions about their perceptions of patients' experiences. Patients were questioned about their intervention awareness; questionnaire experience; resources and referrals offered; and receptivity to screening.

We used criterion sampling strategy to identify and select participants based on their role in the implementation process. Criterion sampling is a type of purposeful sampling widely used in qualitative implementation research and is based on the underlying assumption that different stakeholder roles possess knowledge related to the overall implementation experience [26]. We recruited from all roles related to the implementation at the intervention sites—oncologists, nurses/medical assistants, LCSWs, DAs, and patients. Based on our experience conducting qualitative research with oncology clinicians and patients, we planned 20–25 interviews to attain theoretical data saturation. We identified all patients in the intervention arm and randomly sampled up to 50 patients per recruitment wave until interviews were complete. For clinicians/administrators, we invited everyone from the intervention arm to participate. Potential participants were contacted by email (clinicians, administrators) or by mixed-mode recruitment consisting of email and/or telephone (patients) on a rolling basis. Interviews lasted between 30 and 60 min and were conducted in-person or over the phone by a qualitative research scientist (CMP) with over 20 years of experience in the field, assisted by a research associate who received intensive training on interviewing techniques from the lead scientist prior to the conducting of interviews (LJL). No prior relationships existed between the interviewers and patient participants prior to study commencement; clinical and administrative participants may have interacted with interviewers during initial site study education and meetings. Interviews were audio-recorded and transcribed. We halted interviews once we reached thematic saturation, whereby we were no longer eliciting new pertinent information or themes [27, 28]; we followed the stopping criteria developed by Francis et al. whereby additional 2–3 interviews are to be conducted after saturation is identified [29]. We collected age, gender, race/ethnicity, and profession data from KPSC's electronic medical records and/or participant self-report. No remuneration was provided to participants.

Coding and thematic analysis

Three members of the research group created the codebook and performed the coding and data analysis, guided by the CFIR [30]. The thematic development focused on barriers and facilitators to implementation using a grounded theory approach [31–34] and the team met weekly over the course of 3 months to compare coding and annotated memo applications across four randomly selected and independently coded transcripts. During these meetings, the codebook was refined through open discussions of subjectivity and unintentional bias, coding, and memo applications (including emergent coding) and the hierarchical structure and relationship of primary and secondary themes. The coding process and codebook development steps were performed using Atlas.ti© qualitative analytical software. Transcripts and data analysis were not returned to participants. While brief notes were used in post-interview summaries shared with the study team, traditional field notes were not included as part of the formal analysis.

Results

Participant characteristics

A total of twenty interviews were conducted. Of 58 clinicians/administrations, 11 responded to study invitations and were interviewed. We identified and invited 136 patients, with 9 interview completions; participant characteristics are described in Table 1. The study team identified saturation by the seventeenth interview; we conducted an additional 3 interviews as per the stopping criteria.

Overview of thematic findings

Five major themes emerged from the analysis: (1) gradual acceptance and support of the intervention and workflow (CFIR constructs: Intervention Characteristics [complexity, relative advantage] and Characteristics of Individuals

Table 1 Participant characteristics

Clinician/administrator (*N*=11)			Patient (*N*=9)		
Age, mean (SD)	45.8 (7.12)		Age, mean (SD)	64.1 (13.87)	
Years with KP, mean (SD)	7.5 (5.28)				
Race/ethnicity	*N*	Percent	Race/ethnicity	*N*	Percent
Asian	6	55%	Asian	1	11%
Hispanic	3	27%	Hispanic	2	22%
White	2	18%	White	6	67%
Gender			Gender		
Female	10	91%	Female	9	100%
Male	1	9%	Breast cancer stage		
Role			0	1	11%
Administration	1	9%	I	1	11%
Medical Assistant	2	18%	II	5	56%
Physician (M.D.)	4	36%	III	1	11%
Registered Nurse	3	27%	Missing	1	11%
Technician	1	9%			

[knowledge and beliefs about the intervention]); (2) compatibility with system and personal norms and goals (CFIR construct: Inner setting [compatibility, culture, relative priority]); (3) reinforcement of the value of and need for adaptability of workflow and materials (CFIR construct: Intervention Characteristics [adaptability]); (4) self-efficacy within the nursing/medical assistant team (CFIR construct: Characteristics of Individuals [self-efficacy]); and (5) the importance of identifying accountable front-line staff beyond leadership "champions" (CFIR construct: Process [executing]). During reflection and evaluation, participants also highlighted recommendations for large-scale implementation and sustainment.

Gradual acceptance and support

Initial reactions to the screening intervention varied across clinical roles. During the pre-implementation planning and early implementation phases, some members of the clinical teams, particularly the front-line nurses/medical assistants (MAs), expressed concern about how the screening intervention would impact their workloads. As a DA explained, "I think in the beginning, [the screening] was slow" (Additional quotes in Table 2). A member of the nursing team responsible for the screening delivery stated, "Of course it's going to be more [difficult] because there's more work to do" but added that any concern she had about the demands were offset because she knew "…it's something we need to do for the patient…"

Patients generally viewed the screening intervention positively ("Yes, absolutely. I think it should be offered when someone has been diagnosed…") and expressed expectations that emotional health should be viewed as part of cancer treatment. One patient "… just thought it was probably part of the procedure that everybody has to go through in order to…tell their real feelings about what was happening." A few patients described feeling a bit hesitant about the screening at first because, "…I think initially we say wait a minute. I'm not depressed. Why are you giving me this?...I wasn't dramatically upset, but I think part of me was in denial [about cancer]."

Compatibility with system and personal norms and goals

Stakeholders indicated that the high degree of perceived acceptability was grounded in its alignment with their team's values, goals, and beliefs in the importance of addressing psychosocial needs alongside their patients' physical needs. One oncologist wrapped up her interview with the comment, "…if we want to talk about comprehensively taking care of cancer patients, and one of my clinical interests is in survivorship care and all the other things that go into taking care of a cancer patient, then I think that being able to adequately address their psychosocial needs is really important."

Describing the potential value of communication about psychosocial needs with cancer patients in oncology, one patient said, "Because I feel if it can impact your overall well-being and health…I'm very much the type of person where it's mind over matter. If your mind isn't right…your body probably isn't going to be right, either…if you have support, even if it's from people that are not family…and they're to help in some way? I always think that that's beneficial." Stressing why it is important that the clinical team initiates communication about depression with patients, on patient explained, "I think if I was really, really depressed, I would hopefully say something. But I'm not necessarily the kind of person that's going to just bring it up every time, and

Table 2 Representative quotations illustrating major themes

Theme	Representative quotes
Acceptance and support	"…there's always a fear of the unknown and how much time it's going to take. And what it's going to involve…of course it's a little start up time and there's a little learning curve for the staff to kind of get this incorporated." "…as a physician, [seeing] patients for a new consultation, we have a lot of ground to cover. We're talking about their diagnosis, treatment options, we go over their pathology. So, for me, usually, at that first visit, I don't have time to…unless it's really obvious that they need assistance, I don't have time to screen or ask probing questions about how they're emotionally coping unless it kind of comes up naturally, as part of the consultation." "Well initially, [the nurses] thought it was another extra duty that was tacked on. But after starting the process, and realizing how easy it was, they took it on with no issues…they were hesitant because they thought it was a lot more work than it really was [to identify] these patients and [make] sure that they get the care that they need…we want to make sure that we're here for our patients, and this is something that I feel it's necessary." "Why is it just breast cancer? It's like we got people with prostate cancer who are suffering from depression. We've got all sorts of, you know, colon cancer, all of that. They're doing the – we have screenings for colonoscopies and so, if it comes up positive, I mean, they're probably surprised and depressed and having anxiety. So, why not help them while they're in that phase, until waiting after? I mean, they probably will need that support, but like, they'll be like, I go to my doctor's appointment, they did another biopsy, I'm really scared. You know? We don't want them to feel like that when we could support them through the process." "But you know, one of the nurses felt like, 'Well, why wouldn't we do this for everyone?' Which, I mean, I agree, it's not necessarily, it would probably be good for all of our patients, but I don't know if we have the resources, on our own, for example, to be able to identify. Because someone like you guys were screening, you know, we'd have to have someone screen all our consults and make sure that they're appropriate. So, I think that they also appreciated the idea of kind of identifying patients who needed more support, but I didn't logistically."
Compatibility with stakeholder norms and goals	"I one-hundred percent think it aligns with our clinic goals…if we don't take care or help manage those day to day things that our patients are struggling with it's just causing more chaos, more havoc in their lives…[we can at least help with] minimizing, so that we can focus on what's next." "This is a necessary part of cancer care…as important as which chemo we pick. I think you can mess up the care as much by not [addressing mental health needs] right as you can by choosing the wrong chemo. I feel like you need to intervene on this. This is part of healthcare." "I think it's important, in an ideal world, I really think every, single cancer patient should be getting this. Because the breast cancer patients were a great place to start, because there's a different nature of anxiety that's associated with the very long and multidisciplinary treatments that that group of patients get, and there are some other cancers that mimic that, but that's such a high volume cancer for that, that it's unique in many ways that they may be seeing five physicians, having multiple modes of therapy, you know, it's not a straightforward cancer to treat. And then their survivor capability is for many, many years, typically, it's a high survivor rate. So, you have these patients who have lived with this trauma now for many, many years, which is a different sort of depression and anxiety problem than somebody who knows that they're not going to live for more than a year or something like that."
Value of and need for adaptability	"And so, our…local depression go-to place pushed back right away. "We cannot handle your volume." Yeah, and it's disturbing, because…then you're thinking…I'm not really convinced that we have backup on the treatment end…And that's my big concern…[so in response we are] going to use our social workers."

Table 2 (continued)

Theme	Representative quotes
Self-efficacy	"I would like to think our LVNs and MAs have a high level of confidence on it. I could be wrong, but I would really like to think, they've done so many they should have a high level of confidence." "I think those that had worked in internal medicine and family medicine where they did the Medicare wellness exams started with a higher level of confidence on that because it wasn't something new for them. You know, because they did PHQ stuff for the Medicare wellness…At the beginning, some of the staff kind of looked and said, 'Oh, you've done it before in internal medicine.' It was a relief to me to hear a couple of them saying, 'Well, I worked in internal medicine.'" "One hundred percent [confident with the screening now]. I don't have any problems…I think I'm feeling very confident…Because I think right now I do the questionnaire, I know how to do it, and I know how to refer it."
Accountability	"…as I recall, what happened is you guys sent out some kind of a report that was like, "X potential patients and X were done." It was something like that…And there were some misses…and at some point, it looked like, okay, we're kind of through the training phase, and why are we still missing this? And I think the managers got involved and did some extra reinforcement of the work flow. And it seemed like after that, I don't recall it being needed a lot…it just seemed to be smoother." "In the beginning…I think it was the accountability of who's going to take that [eligible patient] list and make sure we've gone through ….and it was a touch and go, trying to find out…who was [responsible]?"
Reflecting and evaluating: improve communication and workflow between oncology and behavioral health	"Once we know who's at risk, the part that I think would need to be backed up a little bit better, and I just feel like as a general need in our group, is that the psychological support and the psychiatry support would need to be upstaffed. I don't, you know, a lot of these folks don't necessarily need psychiatrists, and they're not all going to end up on medication, but I don't know that our organization values psychology, behavioral cognitive therapy, counseling, as much as people do externals for our medical group. And I feel like in the cancer world, that aspect of care is very important, and I honestly feel like the people who have access to really good counseling, really good behavioral cognitive work, people that may or may not know about mindfulness, and also people who can identify where mindfulness is not going to work for you and is going to backfire on you, which isn't even talked about much, I feel like those folks actually have a much better support system for their cancer survivorship." "[The nurses doing the screening] felt that the escalation point was a bit difficult because…the department that we refer to did not have a process in place where they would take these patients. So, because of that we have to change the process and escalate it to our [oncology-based] social worker instead. So, we made it happen, but I wish that it was smoother - in the beginning, they said they were on board, and I don't know why in the middle of the process they changed their mind…[but once we adapted] I think it went much better, because [our social worker] was able to escalate it with no issues, because of her title and also she was able to interview and also give feedback to the department that initially did not want to take in these patients."
Reflecting and evaluating: technological improvement	"In the way that we're doing it now, where we're mining for these charts or these names, it would be nice if just like a POE [alert], they popped up. " "And I think we could probably streamline it to a point where…if we had an iPad for example where the PHQ-9 is there, and we can kind of modify the form where [the patients] can just check, check, check, check it and save it."

so being asked and given the space to talk about that stuff, I think is important. Because I'm not sure that I would take the initiative, if it was not asked of me."

Value of and need for adaptability

Clinicians and administrators shared their views of what drove the need to adapt the workflow and offered their reflections on the value of the adaptation, with an emphasis on adapting to accommodate the needs of the local behavioral health teams who received the referrals from the screening program. Initially, the program was designed to incorporate the local depression care team at all sites; however, some depression teams were unable to receive the influx of patients.

During adaptation phases, which incorporated findings from the implementation facilitation check-ins, the research team worked with the DAs to train their oncology-based LCSWs on the adapted screening and referral workflows. Referencing her own experience with this adaptation phase, a social worker noted that "…initially, it was a little bit confusing, naturally…But afterwards, when we got our flow [worked out], it was pretty easy."

Stakeholders also perceived value in the study team's ability to adapt the material resources offered to the intervention sites in real time as the implementation progressed; for example, the development of a scoring and referral pocket card for the nurses/MAs. A department administrator acknowledged that her busy nursing team was hesitant to take on more work prior to implementation but added "I think as we went in [to implement it got] better …you touched base…you wanted to know any of the barriers…or what we were asking for. And we asked for the pocket card, and you delivered." A MA echoed this sentiment when she identified the pocket card (a material adaptation) as the most useful material provided to the team during the implementation.

Screening adaptability is also important from the patient perspective, as they shared recommendations for improving the approach if scaled up. One patient suggested building in more support during and after the completion of the questionnaire because, "I don't remember anybody asking me if I needed help with the questionnaire. I just turned it in as best as I could. But, if somebody was there to ask that question, 'Do you need help with this questionnaire, can I clarify anything on it…give you more information about the questions,' that would be very, very helpful." Another patient had a similar perspective and suggested making "…the terminology understandable instead of using medical language. Make it more down to earth…In fact, maybe somebody should go over the questionnaire with the person after they've filled it out instead of just filling it out and handing it in."

Self-efficacy

Across our intervention sites, nurses and MAs with prior experience conducting depression screening in other departments (e.g., internal medicine, OB-GYN) exhibited better screening efficacy. Several of these nurses worked with the study team's clinical research associate to help facilitate training of the other members of the nursing team at their respective sites. Calling out the contributions of these individuals at her clinic, a DA explained, "[those nurses] had done it before in a different department…So, I think it was just a familiarity."

Accountability: beyond identifying champions

An important theme emerged on the importance of accountability. This concept seemed to extend beyond identifying champion(s) and focused more directly on executing tasks (defined within CFIR as "Carrying out or accomplishing the implementation according to plan") referencing the identification of staff members who were accountable for conducting depression screening activities. For instance, one of the clinical teams was initially failing to screen eligible patients. We determined that the team was unclear on accountability and each team member thought others were handling the screening, and ultimately no one was being held accountable on the execution of the intervention activities. To rectify this, two team leads were identified and agreed to take on the responsibility of facilitating screening expectations among the team at the point of care, which improved the team's future performance.

Several DAs noted the audit-and-feedback helped identify nurse team members who were missing screenings early in the implementation and decide "…who's going to take that list and make sure we've gone through?" Ultimately, they were able to use the information as a tool to improve accountability with nurses who were failing to screen. In addition, a DA recalled how the audit and feedback reports which highlighted patient successes motivated the team:

> [a report]…shared that we had helped somebody, and I think that rallied the team from that point up…look, this was this person, had this score, they got [assistance]…and I think that helped…it was a good reminder for doing the work they were being asked to do.

Reflecting and evaluating: recommendations for implementation and sustainment

Improve communication and workflow between oncology and behavioral health

Given the need to make early adaptations to the screening workflows to ensure proper referral to behavioral health services for patients with high scores, stakeholders suggested a need to strengthen the relationship between oncology and behavioral health with the goal of improving communication ("I think would be to get the [behavioral health] department to come onboard and help us with taking on these patients when they're identified"—Assistant DA).

Supportive technology

A common suggestion to improve the intervention was to improve screening efficiency through enhanced technological supports. Participants would like to see technology options for completing the screening that include handheld tablets or patient kiosks and automated scoring and referral options. Participants also suggested creating an automated alert in the electronic medical record to signal to the oncology team that depression screening is due. This type of automated notification was perceived as a way to limit the burden on staff to identify patients who are due for screening.

Some patients also identified technological supports as a way to improve the screening process. One woman suggested mailing the PHQ9 to patients prior to their visits ("I think perhaps it should even be mailed to the patient. I don't know if it would be intrusive for some, but it should be addressed at one point or another I should say. Let's just leave it at that"), while another patient believing patients may feel overwhelmed if offered the screening at their initial oncology visit suggested that sending the screener via the patient portal as "…a push notification would be great." By having the screener sent out prior to the visit, one patient pointed out "…the patient has a little bit more time to fill it out and think it through to make additional comments…I think it would be a good idea."

Expand screening across all cancer types

Participants not only stated their desire to see depression screening continue for their patients after the intervention period but recommended that all patients newly diagnosed with cancer receive screening ("I think we should continue it, because…even if we can identify one or two out of a hundred, that's two lives that could potentially be saved. Because depression is a very serious illness"—Assistant DA). A DA also suggested this would make it easier for clinical teams to identify patients who should be offered the screening at the time of their visit because, "…if it was all cancers…[I would be]…a lot more confident. Because you're not just trying to decipher 'Oh, not this person, but this person [is due for screening].' So, if it was all new consults? Done." A breast cancer patient acknowledged, "I mean I think anyone who's diagnosed with cancer, potentially dealing with these issues… I think it would be okay if they explained that it was something that they gave to everyone", while another stated "…it's reasonable to assume that a person might be experiencing some depression when they're diagnosed with cancer."

Discussion

Guideline-recommended depression screening in medical oncology is an important element of high-quality cancer care [9], and patients with cancer deserve evidence-based integrated care for both mental and physical health needs. This qualitative study described barriers and facilitators to a pragmatic, adaptive implementation of depression screening in oncology within an integrated healthcare system. Guided by CFIR, we explored the appropriateness, feasibility, and sustainability of the program. Key initial barriers to implementation included reluctance to engage in the clinical workflow due to perceived time constraints and burden, confusion regarding who would be accountable for screening-related tasks, poor communication between oncology and behavioral health teams, and health IT constraints. In contrast, facilitators to implementation and future sustainment included strong alignment with systemic and personal norms and goals around quality of care for patients and clinical/administrative teams. In addition, allowing for adaptation of the intervention forms (e.g., timing of clinical workflow, mode of screening delivery, referral to depression care management or social work team) suited local context and resources while maintaining the core functions of the screening and score-based referral, and staff self-efficacy with the screening and referral tools. Over time, nurses and medical assistants responsible for delivering the screening, scoring, and recommending referral found the program to be highly rewarding and felt strongly that the program provided an important element of care. Patients also perceived that the program had significant benefit and was an important element of the cancer care journey.

Our findings are in line with other studies. A recent report from a 2-year training program designed to assist development of depression screening programs as mandated by the American College of Surgeons Commission on Cancer accreditation program found that common barriers included multiple clinician-level barriers: lack of staff/resources, staff turnover, competing demands, and resistance to change [35]. Other recent studies report similar barriers. Staff turnover, perceived burden, limited time, and the need for ongoing training have been shown to be associated with organizational capacity to deliver quality behavioral health care in oncology, and to vary little by organizational and clinician type [36]. These barriers have not altered much over time; a 2012 study found challenges to implementation were inadequate time/resources and resistance to change [1]. Organizations may be underestimating the resources and oversight required to implement a successful program, and potentially overlooking the importance of the local clinic-level context and resources—including addressing the perceived burden of the program [37]. In terms of alleviating perceived burden, we found that self-efficacy was an important facilitator for clinical staff, motivating an acceptance of the practice change and a willingness to fully engage with the program and become accountable for its success. Adaptation of the intervention forms and clinical workflow to suit changing staff availability and clinic priorities also may have contributed to reduction of perceived burden, as the program was designed *a priori* to be flexible and responsive to staff and patient needs. Patients also identified areas in need of potential adaptation and additional resources in this study; in particular, the need for review with a clinician at the start to understand any clinical language used in the screener, and a preference for multiple modes of delivery (tablet, paper).

Availability of referrals to behavioral health must be considered a core component of depression screening programs and a critical element for inclusion in the multilevel implementation blueprint. Our data supports the need for clear communication with behavioral health clinicians/teams as well as accountability for appropriate referrals. Similarly, a recent study of a Veterans Affairs oncology clinic, which found only mixed success of a depression screening program, reported that “available supportive care referrals were critical for program implementation.” [38] Fear of inadequate response to patient distress and inadequate ability to provide a clear path to behavioral health services have been reported as critical barriers to program implementation and sustainment, [37] and an Australian survey of oncology-based screening programs reported that 74% of respondents reported the lack of ability to take action on screening results as a barrier [39]. A strong relationship with behavioral health clinicians and an integrated, comprehensive screening protocol emphasizing referral and treatment—whether working within a system or with external clinicians in the community—is essential; without this, there is little point in screening [40].

Other important facilitators reported in the literature include institutional support, recognition of participant expertise, meeting patient needs, and consistent reporting of performance data [1, 35]. Meeting patient needs was recognized as a critical facilitator by both patients and clinical staff in this study. Patients noted that emotional and mental health are important elements of the cancer journey. The audit and feedback data was particularly helpful to department administrators to determine accountability and reinforcement; of note, the successes included in the reports were highly motivating to the nursing staff. An important facilitator found in our data and reported elsewhere is the perception of improved patient-clinician communication and providing comprehensive care [41]; as shown in our data, the theme of alignment of system and personal norms and goals and providing high-value care was a strong facilitator to acceptability and sustainment of the program. The organizational context of KPSC may also be an implementation facilitator—although a non-academic setting, there is a strong emphasis on providing high-quality, guideline-concordant care throughout KP with organizational support for quality improvement and implementation of evidence-based practices.

Study limitations

Our study has several limitations. First, the focus on patients with breast cancer may limit generalizability to other cancer types. Second, the integrated nature of KPSC may limit generalizability to other clinical settings, such as academic centers or stand-alone oncology centers. In particular, establishing strong relationships with behavioral health may be facilitated by the integrated nature of the system, where the majority of behavioral health care is delivered by KP clinicians with access to a shared electronic record. Finally, the study team is an embedded research team which has worked with oncology clinicians and administrators for several years; this relationship could influence the interview data (e.g., social desirability).

Conclusions

Our findings suggest a high degree of acceptability and feasibility of depression screening in oncology practices, due in large part to the selection of appropriate and sustainable implementation strategies, alignment of norms and goals for patients and clinical/administrative teams, and a high degree of workflow adaptability while maintaining the core functions of the program. These findings will be uniquely helpful in generating actionable, real-world knowledge to inform the design, implementation, and sustainment of guideline-recommended depression screening programs in oncology.

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Author contribution EEH, CMP, and MKG generated the idea for the study and designed the study. CMP and EEH led the drafting of the manuscript. CMP, DP, and LJL prepared approval applications, provided project management, contributed to the interview guide, and coordinated recruitment. DP and JSL identified eligible patients, administrators, and clinicians for recruitment. SLC, FMB, LND, KWK, DBB, and AF contributed clinical expertise to the interview guide. CMP and EEH oversaw development of the interview guide, and CMP and LJL conducted interviews. CMP, EEH, and LJL conducted the analyses. All authors contributed to the drafting of the manuscript and read and approved the final manuscript. We would like to acknowledge our interview participants for giving of their time for our study.

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Declarations

Ethics approval and consent to participate This study was performed in line with the principles of the Declaration of Helsinki and all study activities were approved by the Kaiser Permanente Southern California Institutional Review Board (IRB) #11103. Verbal consent was obtained for all participants.

Competing interests The authors declare no competing interests.

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