



# Palliative care screening tools in the gynecologic oncology population: a narrative review

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**Background and Objective:** Patients with gynecologic malignancies experience high symptom burden associated with both their disease and sequelae of treatment, and are at risk for aggressive (and often futile) care at end-of-life. Early palliative care (PC) involvement is essential to improving quality of life in this population of patients through symptom management and advanced care planning discussions. The purpose of this review article is to discuss current PC screening tools used to trigger PC consultations for patients with gynecologic malignancies. PC screening tools are reviewed across both inpatient and outpatient clinical settings.

**Methods:** A literature search was conducted utilizing PubMed<sup>®</sup> and Excerpta Medica database (EMBASE<sup>®</sup>). Search terms included various combinations of palliative care, gynecologic oncology, gynecologic cancer, gynecologic malignancy, female genital tract cancer, trigger, consult, referral, and screen.

**Key Content and Findings:** A total of six PC referral methods for patients with gynecologic cancer were identified across 10 studies discovered in this literature search. PC referral tools reviewed included use of the surprise questions, presence of specific clinical triggers, Triggered Palliative Care Consultation (TPCC), Palliative Care Referral Protocol (PCRP), Patient Reported Outcomes Measurement Information System (PROMIS), and Symptom screening with Targeted Early Palliative care (STEP).

**Conclusions:** Despite increased interest in PC screening tools to prompt earlier referral for patients with gynecologic cancers, this topic has limited research with varying results of PC referral. While some screening tools reviewed appear promising, further research targeting patients with gynecologic cancer across treatments settings is warranted.

**Keywords:** Palliative care (PC); gynecologic oncology; screening

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## Introduction

Between 2012 and 2016, approximately 94,000 patients were diagnosed with a gynecologic malignancy annually (1). Primary gynecologic malignancies arise in the genital tract, most commonly in the uterus/endometrium, ovary, vulva, cervix, vagina, and peritoneum. Individuals with a diagnosis of gynecologic cancer experience high symptom burden

including pain, dyspnea, nausea, anorexia, fatigue, as well as psychological distress. Patients with advanced disease may develop ascites, malignant bowel obstruction(s), and pleural effusion(s) contributing to symptomatology. Aggressive medical interventions are not uncommon in the last weeks or months of life in patients with gynecologic cancer, with some literature noting up to 60% of patients receiving some

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type of aggressive care at end-of-life, including hospital admission and chemotherapy (2-6).

While aggressive care at end-of-life for patients with gynecologic cancer can be challenging, both for patients and their caregivers, studies have shown that palliative care (PC) involvement in these patients is associated with improvement in quality of care (7,8). Numerous studies have touted the benefit of early PC consultation in patients with advanced malignancy (9-11). The World Health Organization (WHO) noted improved cancer-associated pain when PC consultation was utilized early in disease course (12). Given benefits associated with early PC involvement, the American Society of Clinical Oncology (ASCO) 2016 guidelines recommend PC consultation within 8 weeks of initial diagnosis of metastatic cancer (13). The Society of Gynecologic Oncology (SGO) echoes this sentiment, noting that PC involvement in patients with a gynecologic malignancy is associated with improvement in quality of care (14). One study demonstrated that gynecologic oncologists find PC involvement particularly helpful when a patient (or family) has unclear or unrealistic expectations about disease trajectory or prognosis (15).

Despite recommendations put forth by ASCO and SGO for early PC involvement, referrals for patients with a primary gynecologic malignancy remain low and occur late in the disease course (15). A review of PC utilization across malignancy types between 2012 and 2014 revealed that only 12.7% of patients with gynecologic cancer received inpatient PC consultation (per National Inpatient Sample) (16). In addition to the low PC consultation rate, one study revealed that the median time to PC consultation for patients with ovarian cancer is 18 months, with only 5% of patients receiving PC consultation within 8 weeks of diagnosis (17). Further analysis of patients with ovarian cancer reveal that most patients are referred at the time of disease recurrence, highlighting the use of PC as reactive rather than proactive (17).

Although there are benefits associated with early PC involvement in patients with a gynecologic malignancy, there are barriers to referral to PC on the part of both the patients (and families) and oncologists. Qualitative research has illustrated poor understanding and unfavorable opinions about PC in some patients with gynecologic cancer (18). Patients may be hesitant to seek out or agree to PC referral due to the misconception that PC is equivalent to hospice or end-of-life care. Patients also identify concerns that further disease-directed treatments will no longer be available if they are under the care of a PC specialist (19). Hesitancy

for PC referral on the part of gynecologic oncologists stems from the fear that referral will result in the patient (and/or family) feeling abandoned or hopeless (20). Other barriers noted by gynecologic oncologists include patient/family resistance (including unrealistic expectations about prognosis), limited PC resources available, and concern that PC involvement will increase admission duration (20,21). In addition, some oncologists hesitate to initiate a PC consultation for fear of losing a valued physician-patient relationship (15). In the setting of low rates of referrals, as well as delayed timing of PC referral, there has been increasing research interest in the use of clinical screening tools to trigger PC referral for patients across diagnoses and sites of patient care. Research has illustrated that the use of checklists in a health care setting can improve patient outcomes and quality measures (22).

Patients with a primary gynecologic malignancy represent a unique sub-population of general oncology patients. Disease trajectory and prognosis at the time of diagnosis varies widely and are influenced by staging, histopathology, and site within the genital tract. Gynecologic cancers are unique in their symptom trajectory, with some studies indicating that this subset of patients reported moderate-severe symptoms earlier in the disease course than general oncology patients (23,24). Specifically, patients with gynecologic cancer are more likely to report high levels of fatigue, nausea, pain, anorexia, and bowel disturbance as compared with patients with breast cancer (24). Beyond physical symptoms, patients with a gynecologic malignancy are also more likely to experience progressive anxiety and depression, as compared with patient with other solid tumor cancers (25). This subset of patients also score lower on quality of life measures as compared with patients with a diagnosis of breast cancer (24). From a functional status perspective, patients with a gynecologic malignancy also differ from patients with other cancers. Gynecologic cancer patients nearing end-of-life were found to have a mean Palliative Performance Scale (PPS) range between 40-60 until the week before death, indicating that this prognostic measure may not be accurate for this patient population (23). Due to the uniqueness of patients with a primary gynecologic malignancy, screening tools for early PC referral specific to this population have been a growing area of interest.

This narrative review seeks to provide an overview on the effectiveness of current PC screening tools developed for patients with gynecologic malignancy, across both inpatient and outpatient settings. While literature exists

**Table 1** The search strategy summary

Items	Specification
Date of search	23/02/2022
Databases and other sources searched	PubMed® Excerpta Medica dataBASE (EMBASE®)
Search terms used	Palliative care AND [Gynecologic oncology OR Gynecologic cancer OR Gynecologic malignancy OR Female genital tract cancer] AND [Trigger OR Consult OR Referral OR Screen]
Timeframe	August 1 <sup>st</sup> , 1964–January 31 <sup>st</sup> , 2022
Inclusion criteria	Language: English Intervention: PC screening referral method Inclusion of patients with gynecologic malignancy in sample
Selection process	The author conducted the selection independently

PC, palliative care.

on the development and utilization of these PC trigger tools, this review seeks to summarize the various methods of screening and effectiveness in triggering PC referral for patients with gynecologic cancers. I present the following article in accordance with the Narrative Review reporting checklist (available at <https://apm.amegroups.com/article/view/10.21037/apm-22-728/rc>).

## Methods

A comprehensive literature search was conducted in February 2022 with the use of PubMed® and Excerpta Medica dataBASE (EMBASE®). Search terms included various combinations of palliative care, gynecologic oncology, gynecologic cancer, gynecologic malignancy, female genital tract cancer, trigger, consult, referral, and screen (*Table 1*). The screening of publications was conducted solely by the author; the title and abstract were reviewed to determine relevancy to the research question. Studies were eligible for inclusion if published in English, utilized a specialty PC referral screening methodology, included patients with gynecologic malignancy, and measured impact (or potential impact) on incidence and timing of PC referral.

## Results

A total of six distinct screening systems for patients with gynecologic malignancy were identified across the ten studies encountered in this literature search; the tools

include use of the surprise question, presence of specific clinical triggers, Triggered Palliative Care Consultation (TPCC), Palliative Care Referral Protocol (PCRP), Patient Reported Outcomes Measurement Information System (PROMIS), and Symptom screening with Targeted Early Palliative care (STEP). Screening methods reviewed within this article are discussed within the context of treatment site. A brief summary of the literature reviewed is presented within *Table 2*.

### *Across inpatient/outpatient settings*

#### Surprise question

The surprise question (*‘Would you be surprised if this patient died within a year?’*) permeates much of the PC literature, particularly as it relates to prognostication and identification of patients that may benefit from PC or hospice referral (34). The surprise question was developed as a method for physicians to quickly identify patients who may be approaching end-of-life and would benefit from a discussion about goals of care (35). The surprise question has been of particular interest in the oncology population, in both inpatient and outpatient settings. Three separate studies included in this review evaluated the surprise question as a method of referral to PC for gynecologic cancer patients.

Singh *et al.* (26) investigated the use of the surprise question as part of daily multidisciplinary team rounds on an inpatient oncology service (including patients with a gynecologic malignancy) and the impact on PC utilization. PC use was defined as referral for inpatient PC consultation,

Table 2 Summary of literature

Screening tool	Authors	Year	Setting	Sample characteristics	Method	Outcomes
Surprise question	Singh <i>et al.</i> (26)	2018	Inpatient	Inpatients on a tertiary medical oncology unit	'Would you be surprised if this patient died within a year?'	No change in referral to PC, even for patients felt to have a poor prognosis
	Barton <i>et al.</i> (27)	2020	Outpatient	Patients with stage III or IV gynecologic malignancy or disease recurrence (any stage)		For patients whose oncologist answered 'no', there was increased likelihood of PC involvement and advance care planning documentation completion
Clinical triggers	Rauh <i>et al.</i> (28)	2020	Outpatient	Patients with a gynecologic malignancy receiving chemotherapy		The surprise question is an operative method of identifying gynecologic oncology patients with risk of 1-year mortality and may be beneficial in increasing PC referral
	Lefkowitz <i>et al.</i> (29)	2014	Inpatient	Admitted patients to gynecologic oncology unit	Admission for symptom management, stage IV disease, pelvic exenteration, malignant bowel obstruction	Creation of clinical triggers is a practical method to increase standardization of PC referral
TPCC	Lefkowitz <i>et al.</i> (30)	2014	Inpatient	Admitted patients to gynecologic oncology unit		No difference noted in PC consultations or timing of PC consultation with use of clinical triggers
	DiMartino <i>et al.</i> (31)	2019	Inpatient	Patients admitted to a medical oncology (solid tumors) or gynecologic oncology unit	Presence of metastatic disease and/or uncontrolled symptoms	Implementation of TPCC resulted in significant increase in PC consultation for patients with gynecologic cancer
PCRCP	Paiva <i>et al.</i> (19)	2020	Outpatient	Patients with advanced (non-curable) breast or gynecologic cancer diagnosis	16-item screening including uncontrolled physical or emotional or emotional symptoms, poor/declining functional status, increased lines of treatment, among other criteria	Use of the PCRCP may increase gynecologic and breast cancer patient referrals to PC earlier
STEP	Zimmermann <i>et al.</i> (32)	2021	Outpatient medical oncology clinics (for lung, gastrointestinal, genitourinary, breast, and gynecologic cancer patients)	Patients with lung, gastrointestinal, genitourinary, breast, or gynecologic cancers with advanced disease, ECOG-PS score of 0 to 2, and prognosis $\geq 6$ months	ESAS-r completed on computers or electronic tablets	The STEP method was able to identify patients that would benefit from early PC, as well as identify patients not requiring specialized PC services
	Gressel <i>et al.</i> (33)	2019	Outpatient gynecologic oncology clinic	Patients with a gynecologic oncology diagnosis (any stage)	PROMIS bank of ePROs related to symptom burden, including pain, functional status, fatigue, depression, anxiety, and sexual function	Use of ePROs is an effective method to identify patients that would benefit from PC (or other ancillary care) referral

PC, palliative care; TPCC, Triggered Palliative Care Consultation; PCRCP, Palliative Care Referral Protocol; STEP, Symptom screening with Targeted Early Palliative care; ECOG-PS, Eastern Cooperative Oncology Group Performance Status; ESAS-r, Edmonton Symptom Assessment System-revised; ePROs, electronic patient report outcome measures; PROMIS, Patient Reported Outcomes Measurement Information System.

outpatient PC clinic, community PC services, and/or hospice (26). Data on PC use was collected in the 3 months preceding the study period, during the study period, and 3 months post-study period (26). Response to the surprise question was elicited by the hospital medicine physician or advance practice provider (APP), PC provider, inpatient oncologist, primary oncologist, and the patient's bedside nurse; the answer was categorized as either 'yes' or 'no' (26). For respondents that answered 'no', the question was then further refined to a shorter time frame (6 months, then 1 month) (26). Results indicated that there was no change in referral for PC services during or after the study period across any PC site (26). The authors note that low referral for PC was notable even in patients that providers felt had a poor prognosis, and hypothesize that this is secondary to hesitancy to refer to PC without the approval of the patient's primary oncologist (26). Other potential factors impacting the low PC referral rate were the short duration of hospital admission and reluctance to offer PC referral if the oncologist is still offering disease-directed therapy (26).

A prospective cohort study was conducted to evaluate the use of surprise question in patients with advanced (stage III or IV) gynecologic malignancy with receipt of PC services and having advance care planning documents completed (27). For patients whose provider responded 'no' to the surprise question, results showed a statistically significant increased likelihood of PC involvement, potentially indicating the use of the surprise question as a means to identify patients that should be referred for PC services (27).

Lastly, Rauh *et al.* (28) investigated the surprise question in the gynecologic oncology population to determine the accuracy of this screening tool as a predictor of one-year mortality. Various provider roles, including physicians, APPs, and registered nurses were asked the surprise question for patients for whom they had provided care. All admitted patients with gynecologic cancer were eligible for inclusion, as the sample was not limited to patients with advanced disease (28). Results revealed that for patients who received a response of 'no' to the surprise question, there was approximately a fourfold increase in one-year mortality as compared with patients whose provider responded 'yes' (28). The sensitivity of the surprise question in mortality prediction ranged from 71–83%, with specificity ranging from 61–79% (28). The authors posit that the use of this simple screen would be effective in referring more people for PC services and improving rates of early discussion surrounding goals of care (28).

### *Inpatient setting*

#### **Clinical triggers**

In contrast to the use of a one-question screening tool, Lefkowitz *et al.* (29,30) sought to identify specific clinical symptoms or scenarios in hospitalized patients with gynecologic cancer to improve timeliness and rates of PC consultation. This research was conducted as a needs assessment followed by a pilot study at their institution. The researchers identified the following criteria to prompt an inpatient PC consultation: (I) stage IV disease, (II) admission for uncontrolled symptom(s), (III) malignant bowel obstruction, and (IV) patients undergoing pelvic exenteration (29,30). The authors noted that while the use of specific clinical triggers is feasible in this setting, it did not result in more PC referrals, with close to 40% of patients meeting at least one trigger not being referred for a PC consultation (29,30). The authors concluded that improvement in the implementation for referral for PC consultation in patients screening positive is necessary.

#### **TPCC**

DiMartino *et al.* (31) studied the use of TPCC in gynecologic cancer patients admitted to the hospital. For this study, a single strategy consisting of a printed guideline to prompt PC referral was placed in a patient's chart. In contrast, their research also investigated the use of a multiple strategy TPCC consisting of written guidelines as well as additional education for clinicians on the use of PC; this was used on the general oncology floors (31). The triggers utilized for this study were the presence of metastatic disease and/or uncontrolled symptom burden. Samples were compared before and after implementation of TPCC, with the primary outcome of whether PC consultation occurred and secondary outcome of timing to consultation from admission (31). In patients with gynecologic cancer, the authors report a statistically significant increase in PC consultation after TPCC was implemented (15.3%) as compared with pre-TPCC (9.3%), although no difference was found in the timing of consultation between the two groups (31).

### *Outpatient setting*

#### **PCRP**

A two-phase longitudinal study was conducted to develop and study the implementation of a PC screening tool in

patients with breast or gynecologic malignancy presenting to an outpatient clinic (19). The development of the PCRCP was to aid in not only identifying patients in need of PC but also to triage for the timing of PC appointments (19). Phase I involved the employment of the PCRCP and revision as deemed necessary, with four different versions tested. A consensus panel opted to utilize the 4th version of the PCRCP in Phase II of the study. The PCRCP was constructed of 16-items measuring constructs such as intractable physical or emotional symptoms, suicidality, existential crisis, delirium, and indecisiveness regarding limits on care, amongst other criteria (19). A screen was deemed positive if one or more criteria were met. The Eastern Cooperative Oncology Group Performance Status (ECOG-PS) was then utilized to determine the urgency of appointment, with patients deemed as 'red' recommended for an appointment within 2 weeks, 'yellow' within 45 days, and 'green' within 90 days (19). This allowed for more timely access to outpatient PC for patients with poor functional status and shorter prognoses (19).

During Phase II, the PCRCP identified close to 39% of patients with a positive PCRCP screen, not currently receiving PC (19). Notably, more than 75% of the sample was comprised of patients with breast cancer; with close to 20% of participants diagnosed with cervical cancer, and relatively low rates of participants with uterine or ovarian cancer included (19). Certain criteria were observed to be more commonly met in this patient population, including multiple lines of chemotherapy and poor functional status. In contrast, other criteria such as suicidality, existential crisis, and delirium were rarely identified as positive. The authors conclude that the use of PCRCP in the outpatient setting may improve PC referral, as well as assist with scheduling priorities (19).

### STEP

STEP is a screening method using the Edmonton Symptom Assessment System-revised (ESAS-r) to identify patients with moderate-severe scores for more than one symptom in an outpatient oncology setting (32). Participants included patients with lung, gastrointestinal, genitourinary, breast, and gynecologic cancers. Participants were screened via computer or electronic tablet in the waiting room in the oncology clinic. Participants were considered to screen positive if they scored  $\geq 4$  (scale ranged from zero, indicating absence of symptom to 10, indicating worst possible severity of symptom) on any symptom scale; this subset of patients received a telephone call from a PC triage nurse to offer

outpatient PC appointment (32). The authors noted that while patients that declined PC appointment had less symptom burden compared with patients that accepted PC appointment, there was better mood and symptom management in those that received PC services (32). Perhaps even more notable, was that researchers were able to identify patients with mild physical and emotional symptom burden, as well as good quality of life who may not require specialized PC services, thus allowing for in-demand PC services to be directed to those patients who will benefit from a specialty PC referral (32).

### PROMIS®

The PROMIS is a set of "person-centered measures that evaluates and monitors physical, mental, and social health in adults and children" (36). The PROMIS network has created a bank of electronic patient report outcome measures (ePROs) related to symptom burden in patients with cancer. Gressel *et al.* (33) investigated the use of PROMIS ePROs in gynecologic oncology patients to improve ancillary support service referral (including PC) in the outpatient setting. The ePRO assessment employed was composed of the computer adaptive tests completed on electronic tablets by patients waiting for their oncology appointment (33). The authors selected "PROMIS-CA Bank v1.1—Physical Function", "PROMIS-CA Bank v1.1—Pain Interference", "PROMIS-CA Bank v1.1—Fatigue", "PROMIS-CA Bank v1.1—Depression", and "PROMIS-CA Bank v1.1—Anxiety" to be utilized in their study. The "PROMIS Female Sexual Function Profile v1.1" was also part of the screening, but is not a computer adaptive test (33). Of the 339 participants screened, 59 were found to be symptomatic in at least one domain (33). Patients identified through screening were contacted by the office to offer referral to appropriate sub-specialty; for this sample 28 of the 59 were referred to PC (36). The authors note that none of the patients identified through this screening process were offered outside referral by their oncology provider (33).

### Discussion

The methodologies of screening gynecologic oncology patients for PC referral included in this narrative review appear feasible for implementation in both inpatient and outpatient settings and range from the use of a single question to more comprehensive assessments. Interestingly, all screening methods center on provider assessment, except for the PROMIS ePRO and STEP methods, which the

patients complete.

The surprise question appears to be the simplest to utilize and implement into a daily routine, but may be hindered by bias, as it relies on a provider's judgment. Singh *et al.* (26) noted oncologists were significantly more likely to answer 'yes' to the surprise question as compared with hospital providers (27% to 17%,  $P=0.03$ ), revealing a more optimistic view of prognosis. A provider's answer to the surprise question was also impacted by years of clinical experience, with the answer of 'no' increasing with the number of years in practice (26). In addition, while the surprise question was developed to refer patients who might benefit from PC, a meta-analysis has revealed limited sensitivity and poor specificity in identification of patients with prognosis of less than one year (34). This may result in missing patients that would benefit from PC services, as well as referral of patients to PC that may not be in need of limited PC services (34).

The use of specific clinical triggers is also a straightforward method to screen patients by the presence of various physical/clinical scenarios. Across the studies reviewed, implementation of clinical triggers was the most widespread practice to identify patients with gynecologic cancer that may benefit from PC consultation. The number of triggers varied across studies, as did the actual theme(s) of criteria. DiMartino *et al.* (31) used two general criteria (presence of metastatic disease, admission for symptoms) while Lefkowitz *et al.* (29,30) used four criteria (stage IV disease, bowel obstruction, pelvic exenteration, admission for symptoms) to screen this population of patients. Interestingly, while use of this type of criteria seems to be at minimal risk for error or bias, Lefkowitz *et al.* (30) noticed issues with false-negative screens. Alternatively, Paiva *et al.* (19) developed a screening tool with 16 criteria, ranging from intractable symptoms and presence of existential angst, to severe emotional symptoms and poor functional status. Of note, patients requiring PC referral were triaged by functional status as measured by ECOG-PS, with a worse functional status indicating the need for a more urgent referral. However, ECOG-PS may carry its own bias, with providers more likely to assign a lower functional status score to patients who are depressed or with a lower level of education (37). There was no consensus on whether the use of clinical triggers impacted PC referral for patients with gynecologic malignancy. This is due to the differences between screening tools and samples studied.

Use of symptom assessment screening (STEP) to prompt early referral to PC has shown promise in an outpatient setting for patients with solid tumors with advanced disease

status (32). This screening method used a self-report tool (ESAS-r) as a means to identify patients that may benefit from specialized PC services versus patients whose needs can be met with primary PC provided by their oncologist. The authors' choice of the ESAS-r was sensible as this instrument is considered psychometrically sound and applicable in the clinical setting (38). The ESAS-r has been found to be easier understood by patients as compared with the original ESAS, as it contains brief descriptions of the symptoms being assessed (38). Limitations in use of the ESAS-r include literacy and the difficulty some patients experience with assigning a number to describe severity of a particular symptom (38).

The PROMIS ePROs is a PC screening tool also completed by patients. This screening method identified patients with high symptom burden that would benefit from PC referral, yet; they were not referred by the provider (33). Given the prevalence of technology in the healthcare setting, it is practical that future PC screening tools may be administered via an electronic tablet. However, patient literacy and level of education have been shown to impact the accuracy of response on written screening tools, which may affect the ability to be used as a stand-alone PC screening method (39).

There are limitations to this narrative review. Although the review identified six distinct screening tools, only a few studies have been published for each of these six screening methods. In addition, study populations varied widely across each study, with some of the literature including patients with other solid tumor diagnoses as well as gynecologic malignancy. Lastly, the studies reviewed also were conducted across both inpatient and outpatient settings, making it difficult to compare the strengths and weaknesses of each method of screening.

## Conclusions

Currently, research on screening tools for PC consultations is scarce. This is even more the case for studies focusing on patients with gynecologic malignancies. The results from the publications reviewed showed the use of PC screening tools in the gynecologic oncology population to have varying efficacy in both rates of referral and timing of consultation. The study samples and the outcomes measured across studies were different, making direct comparison of results difficult.

While no definitive preferred screening tool emerged in either setting for this population of patients, many of the

screening methods are worthy of further evaluation. Recent updates in gynecologic oncology patients have also revealed that presence of hypercalcemia, shorter period of remission before disease recurrence, and recurrent hospitalizations for either pleural effusion(s) or ascites portend poorer prognosis; therefore, addition of these criteria to clinical trigger tools may be fruitful in identification of patients who would benefit from specialty PC consultation (40). Future research should aim to further refine screening tools across treatment settings, with another potential area of exploration being the development of a dual-pronged assessment (completed by provider and patient) to identify patients that would benefit from PC involvement. In addition, further research on implementation of PC consults, once potential patients identified, will be necessary. Lastly, careful consideration of how bias may impact a patient's or provider's interpretation and completion of PC screening tools is warranted and would also benefit from future research.

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*Ethical Statement:* The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are

appropriately investigated and resolved.

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