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Development and validation of the Capacity to Treat Chronic Pain and Opioid Use Disorder (CAP-POD) questionnaire

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Abstract

Background: Patients with co-occurring chronic pain and opioid use disorder (OUD) have unique needs that may present challenges for clinicians and health care systems. Primary care providers' (PCPs) capacity to deliver high quality, research-informed care for this population is unknown. The objective of this study was to develop and test a questionnaire of factors influencing PCP capacity to treat co-occurring chronic pain and OUD.

Methods: Capacity to Treat Co-Occurring Chronic Pain and Opioid Use Disorder (CAP-POD) questionnaire items were developed over a 2-year process including literature review, semi-structured interviews, and expert panel review. In 2018, a national sample of 509 PCPs was recruited through email to complete a questionnaire including the initial 44-item draft CAP-POD questionnaire. CAP-POD items were analyzed for dimensionality, inter-item reliability, and construct validity.

Results: Principal component analysis resulted in a 22-item questionnaire. Twelve more items were removed for parsimony, resulting in a final 10-item questionnaire with the following 4 scales: (1) *Motivation to Treat* patients with chronic pain and OUD ($\alpha = .87$), (2) *Trust in Evidence* ($\alpha = .87$), (3) *Assessing Risk* ($\alpha = .82$), and (4) *Patient Access* to therapies ($\alpha = .79$). These scales were associated with evidence-based practice attitudes, knowledge of pain management, and self-reported behavioral adherence to best practice recommendations.

Conclusion: We developed a brief, 10-item questionnaire that assesses factors influencing the capacity of PCPs to implement best practice recommendations for the treatment of co-occurring chronic pain and OUD. The questionnaire demonstrated good reliability and initial evidence of validity, and may prove useful in future research as well as clinical settings.

Plain language abstract

Patients with co-occurring chronic pain and opioid use disorder (OUD) have unique needs that may present challenges for clinicians and health care systems. Primary care providers' (PCPs) ability to deliver high quality, research-informed care for this population is unknown. There are no validated instruments to assess factors influencing PCP capacity to implement best practices for treating these patients. The objective of this study was to develop and test a questionnaire

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of factors influencing PCP capacity to treat co-occurring chronic pain and OUD. We recruited 509 PCPs to participate in an online questionnaire that included 44 potential items that assess PCP capacity. Analyses resulted in a 10-item questionnaire that assesses factors influencing capacity to implement best practice recommendations for the treatment of co-occurring chronic pain and OUD. PCPs reported moderately high confidence in the strength and quality of evidence for best practices, and in their ability to identify patients at risk. However, PCPs reported low motivation to treat co-occurring chronic pain and OUD, and perceived patients' access to relevant services as suboptimal, highlighting two areas that should be targeted with tailored implementation strategies. The 10-item Capacity to Treat Chronic Pain and Opioid Use Disorder (CAP-POD) questionnaire can be used for two purposes: (1) to assess factors influencing PCP capacity before implementation and identify areas that may require improvement for implementation and (2) to evaluate implementation interventions aimed at increasing PCP capacity to treat this population.

Keywords
Capacity, primary care, chronic pain, opioid use disorder, questionnaire

Introduction

Promoting patient-centered, empirically supported practices for managing co-occurring chronic pain and opioid use disorder (OUD) in the primary care setting is a public health priority. Rates of chronic pain, opioid use, and OUD have risen over the past decade (Centers for Disease Control and Prevention, 2015; Institute of Medicine (US) Committee on Advancing Pain Research, Care, and Education, 2011; Piper et al., 2018; Pitcher et al., 2019). Much attention has been paid to primary care providers (PCPs), as they are the main prescribers of opioids for chronic pain (Levy et al., 2015). The relationship between opioid prescribing for chronic pain and the onset of OUD in patients receiving these prescriptions is subject to a measure of uncertainty, since not all persons develop diagnosable OUD (Cheatle et al., 2018; Volkow & McLellan, 2016). Thus, estimates of the prevalence of co-occurring chronic pain and OUD vary and range from 8% to 12% of patients with chronic pain (Vowles et al., 2015). Nevertheless, PCPs are potential change agents to help mitigate the current opioid crisis, but may be hesitant to adopt new chronic pain treatment practices due to inadequate time and resources, and lack of familiarity with current best practices (Interagency Pain Research Coordinating Committee, 2016; Krebs et al., 2014).

Expert groups, including the Centers for Disease Control and Prevention (CDC), underscore that appropriate care plans should involve weighing risks and benefits of treatment options, while taking into account the needs of the patient (Dowell et al., 2016; Merlin et al., 2018). However, both individual and organizational capacities are required to do so, and yet may not be in place (Damschroder & Hagedorn, 2011). Capacity, in this context, refers to PCPs' knowledge, commitment, and ability to carry out research-informed activities for the treatment of co-occurring chronic pain and OUD (Brownson et al., 2018; Kothari et al., 2009; Taylor et al., 2013). Improving capacity, or capacity building, can help improve the uptake of appropriate treatments when context is taken into consideration and strategies are tailored to overcome these contextual barriers (DeCorby-Watson et al., 2018).

Improving PCPs' capacity to treat co-occurring chronic pain and OUD is important for several reasons. First, chronic pain is most commonly treated in primary care, accounting for ~10% to 15% of patients (Levy et al., 2015; Mills et al., 2016). If a patient transitions from appropriate opioid use to inappropriate or problematic opioid use, a change in treatment plan typically originates with their prescribing clinician (Dowell et al., 2016; Liebschutz et al., 2014). Moreover, given the dynamic interaction of pain and opioid use, it is important to explore factors that might influence the treatment of pain and OUD together (McGovern et al., 2014; Speed et al., 2018; St Marie & Broglio, 2020; Wilson-Poe & Moron, 2018). Second, clinicians state that treatment of patients with complex chronic pain conditions can be challenging and that they require specialized knowledge, skills, and access to resources, including how to appropriately taper opioid medications, to overcome such challenges (Bergman et al., 2013; Chou et al., 2019; Manhapra et al., 2018; Upshur et al., 2006). Thus, improving capacity is likely to require targeted efforts to enhance knowledge, skills, and access to resources.

Clinicians' capacity to treat both chronic pain and OUD could influence their uptake of best practices, which evolve as new evidence, becomes available (Cheatle, 2018; Dowell et al., 2016; Vadivelu et al., 2018). It may even affect the willingness of new clinicians to take on roles of care for pain and OUD in primary care (Varley et al., 2019). As initiatives aimed at improving chronic pain management and addiction care emerge, it is increasingly important to understand what may be influencing PCP capacity. However, no measure exists that evaluates the factors influencing PCPs' capacity to treat co-occurring chronic pain and OUD. A validated measure is needed to assess factors influencing PCP capacity before implementation of new practices, so that strategies can be tailored to

address where capacity may be low (Powell et al., 2012). Moreover, a validated assessment will be necessary to evaluate the impact of such tailored strategies on PCP capacity.

The objective of this study was to develop and test the psychometric properties of a questionnaire aimed to assess factors influencing capacity for treating chronic pain and OUD in the primary care setting. This was accomplished by first developing draft items, then administering a draft version of the questionnaire to a large sample of PCPs, and finally, using quantitative methods to evaluate the questionnaire's psychometric properties. Dimensionality was assessed using principal component analysis and the Minimum Average Partial (MAP) procedure. Reliability was assessed by examining each scale's coefficient alpha. The capacity to treat both chronic pain and OUD is relatively unstudied and thus few relevant, overlapping measures exist. However, to assess construct validity, concurrent relationships with measures related to provider knowledge and behavior were utilized. We hypothesized that the questionnaire would demonstrate adequate reliability and construct validity. We had no a priori hypotheses on dimensionality of the questionnaire.

Methods

This study is the second strand of a mixed methods questionnaire development project. The results of the first strand, focused on elucidation of barriers and facilitators through qualitative interviews, have been detailed elsewhere University of Alabama at Birmingham's. This report describes questionnaire development, which entailed proposing draft items, refining items based on guidance of an expert panel, administering items to a national sample of PCPs recruited from across the United States, and psychometric analysis to finalize the questionnaire. All study activities were overseen and approved by the University of Alabama at Birmingham's Institutional Review Board.

Item development

Draft items were developed in two steps. First, items were proposed based on a review of the literature and evidence-based recommendations (Barry, 2016; Liebschutz et al., 2014). We reviewed studies, reviews, and consensus-based guidelines that focused on the treatment of co-occurring chronic pain and OUD. When a barrier or practice was highlighted in the literature, we extracted and adapted it for the questionnaire. For example, the CDC Guideline for Prescribing Opioids for Chronic Pain emphasizes weighing risks and benefits when choosing a treatment plan, and therefore, one proposed item read, "When choosing a treatment for chronic pain, I weigh the risks and benefits"(Dowell et al., 2016). Second, semi-structured interviews, guided by the Consolidated Framework for Implementation Research (CFIR), were conducted with 11 PCPs in the Birmingham, Alabama area (Damschroder et al., 2009). These interviews served to elucidate factors that influenced the uptake of best practices for treating co-occurring chronic pain and OUD. We used the CFIR interview guide so that all CFIR domains were covered in the interview. We created items to reflect any barrier or facilitator listed at any of the domains (CFIR, 2016; Varley et al., 2019). The initially proposed items were then reviewed by an expert panel and amended for both content and clarity. The expert panel included two PCPs (one of whom participated in the first phase of qualitative interviews), a pain psychologist, a clinical psychologist with expertise in addiction and psychometrics, and two additional social scientists with expertise in substance use and pain. Individuals on the panel were sent a draft of the items through email and were asked to make changes to improve clarity. Experts were also asked to make suggestions for additional items to improve content validity. This process resulted in an initial 44 draft items (see Supplement I for the complete list of these initial draft items) related to the capacity to treat chronic pain and OUD.

Participants

From March 2018 to August 2018, PCPs were invited to complete the online battery of candidate items. PCPs were recruited through email invitation, social media, and through organizations that were willing to share the recruitment invitation when requested (e.g., Area Health Education Centers). Email addresses were identified through LISTSERVS and organization websites. To obtain a large national sample, emails were sent to academic, community, and government providers and organizations in each state. Respondents were included if they practiced in the United States, considered themselves a PCP, and had an advanced clinical degree (MD, DO, nurse practitioner, or PA). Respondents that did not meet these criteria were excluded from the study.

Procedures

Within the email and social media invitations were a link to a SurveyMonkey page containing the questionnaire battery. The launch page consisted of an informed consent document. Individuals that affirmed consent were then taken to a new page with the questionnaire. Responses were anonymous and IP addresses were not collected. Our goal was to recruit at least 500 participants. This target sample size was chosen based on guidelines for performing principal components analysis (PCA), which recommend at least 5–10 observations per item (Goldberg & Velicer, 2006; MacCallum et al., 2001; Yong & Pearce, 2013). Responses were then exported into a database for analysis.

Measures

Measures in the online questionnaire included the initial 44-item draft Capacity to Treat Chronic Pain and Opioid Use Disorder (CAP-POD). We included four additional questionnaires designed to describe the sample and provide an initial test of construct validity related to knowledge, attitudes, and provider behavior, which are important constructs related to capacity. The online questionnaire included the following:

1. (*CAP-POD*). The 44-item draft questionnaire consisted of questions related to barriers and facilitators that might influence a PCPs' ability to carry out research-informed activities for the treatment of co-occurring chronic pain and OUD. We asked providers to rate the extent to which they agreed with statements related to their capacity to treat both chronic pain and OUD. Respondents were given a 7-point Likert-type scale that ranged from *strongly disagree* (1) to *neither agree nor disagree* (4) to *strongly agree* (7).
2. *Provider demographic and practice information*. Age, gender, and region of the country currently practicing were collected from each respondent. In addition, ethnicity, title (type of provider), board certifications, and years practicing were collected. These data were collected for descriptive purposes.
3. *Evidence-Based Practice Attitudes Scale* (*EBPAS*). Attitudes influence a provider's decision to try a new practice or adopt a new innovation. The EBPAS is a 15-item validated scale that assesses providers' attitudes toward the use of evidence-based practices, with greater scores indicating increased positive attitudes toward adopting evidence-based practices (Aarons, 2004). It has four scales: Requirements, Appeal, Openness, and Divergence. Respondents were asked to indicate the extent to which they agreed with statements related to adopting new interventions, with response options ranging from *not at all* (0) to *a very great extent* (4). The EBPAS demonstrated adequate to good reliability in this sample (Requirement $\alpha = .87$; Appeal $\alpha = .81$; Openness $\alpha = .83$; Divergence $\alpha = .62$).
4. *KNOWPAIN-12*. The KNOWPAIN-12 is a validated measure of provider knowledge of pain management (Gordon et al., 2014). It asks respondents to rate how strongly they agree with a series of 12 items related to pain management. Response options range from *strongly disagree* (0) to *strongly agree* (6), with higher scores indicating greater knowledge of pain management. The coefficient alpha for the measure in this sample was .47.
5. *Behavioral Adherence to Evidence-Based Recommendations*. The use of vignettes to measure provider adherence to guidelines has been validated (Carlson et al., 2018; Converse et al., 2015; Peabody et al., 2000, 2004). Adherence to evidence-based recommendations was based on respondents offering correct responses to questions regarding six vignettes from a module produced by the National Institute for Drug Abuse (NIDA, 2012). The module titled "Managing Pain in Patients Who Abuse Prescription Drugs" is intended for health care professionals and includes a case description with questions about treatment choices. Modeling previous research on vignettes, respondents earned 1 point for each correct response, with a total of 6 points possible (Jeffries & Maeder, 2006; Kitamura & Kitamura, 2000).

Statistical analyses

Analyses were conducted using SAS 9.4. A PCA using promax rotation was conducted to evaluate the dimensionality of the CAP-POD and the MAP procedure was used to determine how many factors to retain (Goldberg & Velicer, 2006). To examine the robustness of the CAP-POD's factor structure to procedural variation, exploratory factor analysis also was employed and produced equivalent results. Items with factor loadings of at least .50 and no cross loadings were retained for rotation. Observations with missing data were excluded from the PCA. Several of the items that were removed contributed to this initial missingness, and thus, some of the observations ($n = 16$) that were not included in the PCA were included in the rest of the analyses. Reliability of each factor was then determined using coefficient alpha. Because we aimed to have a brief, pragmatic questionnaire, we removed items that did not reduce coefficient alpha (Streiner & Norman, 2008). Scales were constructed by computing the mean of the remaining items that loaded on each factor. Construct validity was tested by taking the total mean score of each scale and examining its correlation with the EBPAS, KNOWPAIN-12, and vignette scores.

Results

In total, 509 PCPs completed the questionnaire. Approximately, 7,000 emails were sent out, resulting in a 7% response rate. PCPs with incomplete data were removed from the PCA, resulting in the inclusion of 493 total respondents.

Table 1 describes the demographic and practice characteristics of the sample. The respondents were predominantly White, physicians (MD), and practicing in academic settings. Family and internal medicine were the primary certifications reported. Only 1.8% of the sample reported

Table 1. PCP characteristics.

Gender	% (*n*)
Male	38 (193)
Female	61.8 (314)
Other	0.2 (1)
Mean age (*SD*)	48.1 (11.7)
Region	% (*n*)
New England	14.6 (74)
Middle Atlantic	13.8 (70)
East North Central	15.6 (79)
West North Central	9.1 (46)
South Atlantic	11.7 (59)
East South Central	10.1 (51)
West South Central	6.1 (31)
Mountain	7.3 (37)
Pacific	9.5 (48)
Midwest	2.2 (11)
Ethnicity	% (*n*)
White or Caucasian	82.3 (419)
American Indian or Alaskan Native	1.0 (5)
Asian or Pacific Islander	6.7 (34)
Black/African American	2.8 (14)
Hispanic/Latino	3.7 (19)
Multiple ethnicities	1.0 (5)
Prefer not to answer	2.6 (13)
Degree	% (*n*)
MD	65 (330)
NP	23.6 (120)
PA	2.4 (12)
DO	9.0 (46)
Organization type	% (*n*)
Community	36.0 (183)
Hospital	8.1 (41)
Government (including Veteran's Administration)	0.8 (4)
Academic	54.0 (275)
Other (including direct primary care)	1.2 (6)
Certifications/Licenses	% (*n*)
Family medicine	34.8 (177)
Internal medicine	10.4 (53)
Gerontology	1.6 (8)
Sports medicine	1.4 (7)
Nurse practitioner (non-specific)	5.3 (27)
Palliative care	1.6 (8)
Addiction medicine (only)	1.2 (6)
Physician assistant	0.4 (2)
Other	3.1 (16)
No specialized licenses or board certifications self-reported	40.3 (205)
Addiction Certification	% (*n*)
Primary or secondary certification/license	1.8 (9)
None	98.2 (500)
Mean years Of practice (*SD*)	16.7 (11.4)
Proportion (%) of patients with chronic pain (*SD*)	15.1 (15.5)

DO: doctor of osteopathic medicine; MD: doctor of medicine; NP: nurse practitioner; PA: physician assistant; PCP: Primary care provider.

Table 2. CAP-POD items, factor loadings, and coefficient alphas.

Scale (coefficient alpha reliability)	Loading
Desire to treat (.87)	
My team wants to work with patients with opioid use disorders	.89
My team wants to work with patients with chronic pain	.85
I want to work with patients who have opioid use disorders	.80
I want to work with patients who have chronic pain	.79
Assessing risk (.82)	
I have the ability to assess risk for opioid use disorder in my chronic pain patients	.90
I assess risk for opioid use disorder in my chronic pain patients	.89
Trust in evidence (.87)	
I trust research evidence related to chronic pain	.94
I trust research evidence related to opioid use disorder	.93
Patient access (.79)	
My patients can afford the recommended therapies for chronic pain	.91
My patients can afford the recommended treatments for opioid use disorder	.90

CAP-POD: Capacity to Treat Chronic Pain and Opioid Use Disorder.

certification or licensure in addiction medicine. This sample is representative of the US primary care work force in the ratio of physicians to nurse practitioners and physician assistants. The sample is different from the general population of US PCPs in that we recruited more family medicine providers than internal medicine providers, more women than men, and a greater proportion of clinicians practicing in the academic setting (Agency for Health care Research and Quality, 2017).

Initially, 22 items were removed from the draft questionnaire, resulting in a 22-item, 4-factor solution that accounted for 49% of the variance. An additional 12 items were then removed based on their effect on coefficient alphas. Items were removed from scales when removal did not decrease coefficient alpha. This resulted in the final 10-item version of the questionnaire, which accounted for 80% of the variance.

Table 2 displays the questionnaire items, factor loadings, and coefficient alphas. The first scale, labeled, *Desire to Treat* ($M=3.5$, $SD=1.5$, $R=1–7$) had its greatest loading on items that addressed both the provider's and their team's motivation to treat patients with both chronic pain and OUD. The second scale, labeled *Assessing Risk* ($M=5.5$, $SD=1.2$, $R=1–7$), had its greatest loadings on two items that addressed the provider's ability to screen for OUD in their chronic pain patients. The third scale, labeled *Trust in Evidence* ($M=5.7$, $SD=1.0$, $R=1–7$), had its greatest

loadings on two items that measure the degree to which the provider trusts research evidence related to chronic pain and OUD. The fourth and final scale, labeled *Patient Access* ($M=3.1$, $SD=1.5$, $R=1–7$), had its greatest loadings on two items that address the provider's perception of their patients' ability to afford the recommended treatments for chronic pain and OUD. Table 3 displays the zero-order correlations among the scales of the questionnaire.

Tests of construct validity

Table 4 lists correlations of the questionnaire scales and the EBPAS, KNOWPAIN-10, and NIDA vignette scores with significant correlations in bold. The respondents excluded from the PCA were included in these analyses, as removal of 22 items resulted in complete data for these 16 PCPs.

There was a modest positive relationship between the *Desire to Treat* scale score and the KNOWPAIN-12 total and a moderate positive relationship between *Desire to Treat* scale score and the NIDA vignette score. The *Assessing Risk* scale score had and a moderate positive relationship with the KNOWPAIN-12 total score and a modest positive relationship with the NIDA vignette score. The *Trust in Evidence* scale score had a modest to moderate positive relationships with all subscales of the EBPAS and a modest positive relationship with the KNOWPAIN-12 total score. The *Patient Access* scale score was not significantly associated with the EBPAS, KNOWPAIN-12, or vignette scores.

Table 3. Zero-order correlations of the CAP-POD scales.

Subscales	Desire to treat	Assessing risk	Trust in evidence
Desire to treat			
Assessing risk	.339**		
Trust in evidence	.082	.092*	
Patient access	.113*	.108*	.103*

CAP-POD: Capacity to Treat Chronic Pain and Opioid Use Disorder.
*Correlation is significant at the .05 level (two-tailed). **Correlation is significant at the .01 level (two-tailed).

Discussion

The primary objective of this study was to develop and test the psychometric properties of a questionnaire to assess factors influencing PCP capacity to implement best practices for co-occurring chronic pain and OUD. To our knowledge, this research offers the first attempt to develop such a questionnaire. Analyses revealed four factors influencing capacity to treat co-occurring chronic pain and OUD, from which four scales were constructed: *Desire to Treat, Assessing Risk, Trust in Evidence*, and *Patient Access*. See Supplement II for the final 10-item CAP-POD questionnaire and scoring instructions.

All CAP-POD scales were correlated with at least one of the measures used in tests of construct validity, with the exception of *Patient Access*, for which the lack of correlation may itself be meaningful. *Patient Access* assesses patients' capacity to access and afford a range of treatments. This sits outside of a PCPs' locus of control and seems, in retrospect, unlikely to be highly correlated with providers' knowledge of pain or attitude toward evidence-based practices. While this questionnaire was intended to explore individual provider capacity, questionnaire items were heavily influenced by interviews with providers, where they identified multi-level factors that influenced their knowledge, commitment, and ability to provide appropriate care for this population. Organizational and "outer setting" aspects like team buy-in and patient needs influence individual capacity, which is why some of the items reflect factors outside of the individual (Damschroder et al., 2009). The CAP-POD scales' relationships with attitudes toward evidence-based practices, knowledge of pain management, and behavioral adherence to evidence-based practices (vignettes) were modest to moderate. While it

Table 4. CAP-POD scale correlations with other related measures.

Scales and subscales	CAP-POD scales			
	Desire to treat	Assessing risk	Trust in evidence	Patient access
EBPAS (Requirements)	−.021	−.080	.164**	.016
EBPAS (Appeal)	.038	−.011	.207**	.005
EBPAS (Openness)	.089	.034	.172**	−.038
EBPAS (Divergence)	−.006	.032	.257**	.029
EBPAS Total	.036	−.004	.314**	.027
KNOWPAIN-10	.330**	.354**	.139**	.065
Vignette score	.130**	.133**	.061	.065

CAP-POD: Capacity to Treat Chronic Pain and Opioid Use Disorder; EBPAS: Evidence-Based Practice Attitudes Scale; KNOWPAIN-10: Knowledge of Pain.
*Correlation is significant at the .05 level (two-tailed). **Correlation is significant at the .01 level (two-tailed).

was hypothesized that the questionnaire would demonstrate construct validity, it is not surprising the correlations were not robust, as little research exists in this field. No measures specific to treating both chronic pain and OUD exist. Future work should look to further explore the relationships of the CAP-POD with other indices more closely related to provider capacity to treat this population, including actual behavior. For example, future research could test the CAP-POD's ability to predict implementation outcomes, like adoption of cognitive behavior therapy for chronic pain or replacement medications (e.g., buprenorphine) for OUD.

The CAP-POD can be used in two ways. First, it could be used to identify influences on likely success or failure of implementation of new practices; for example, where a large hospital or health system seeks to enact a major change to care involving OUD or opioid prescribing for pain, clinicians' responses on the CAP-POD could, a priori, help to identify areas that will require greater focus (Hagedorn et al., 2018; Minegishi et al., 2018). Second, it may be used to evaluate interventions aimed at changing PCP ability to carry out research-informed activities for the treatment of co-occurring chronic pain and OUD, that is, as a preliminary target. As demonstrated by mean CAP-POD scale scores, PCPs reported moderately high confidence in empirically supported interventions for treating co-occurring chronic pain and OUD, and in their ability to identify patients at risk. Conversely, they had low desire to treat these patients, a finding also supported previous research (Barry et al., 2010; Bishop et al., 2007; Guerrero et al., 2020). Furthermore, they perceive their patients' access to relevant services as suboptimum, a matter that has not been well-studied, but needs to be. Transforming care is likely to require renewed attention to optimizing not just desire on the part of PCPs to treat patients where chronic pain and opioids are both involved, but accessibility of services for patients. These data imply a service shortfall that will likely require fixing with additional training, service design, and incentives.

Limitations

While great effort was taken to ensure a representative sample, more than half of the respondents were both physicians and academic practitioners and results may not be as generalizable to other types of providers. It is unknown how generalizable the results are to other providers that treat pain, like emergency medicine, hospitalists, anesthesiologists, or pediatric practitioners. Because we only included PCPs practicing in the United States, the generalizability to non-US PCPs may be limited. Validation of the questionnaire in a population of non-US clinicians will be necessary. Great effort also was made when developing the initial pool of questionnaire items. However, the final factor structure and scales are products of the items and sample used. The response rate for the questionnaire was lower than expected, as other studies have had rates up to 35% (Cunningham et al., 2015). This may be due to the length of the questionnaire and absence of compensation (Kellerman & Herold, 2001).

Conclusion

Results from this study enhance the current understanding of factors influencing PCPs' capacity to implement new practices for co-occurring chronic pain and OUD by producing a reliable 10-item tool with preliminary evidence of validity to assess these domains. The four-questionnaire domains reflect contextual factors (attitudes/knowledge, availability of resources, and patient access) frequently described as influencers of capacity in the capacity building literature (DeCorby-Watson et al., 2018; Jones et al., 2015; Kothari et al., 2009; Taylor et al., 2013; Varley et al., 2020). This study represents the first attempt to create such a tool and the results require further inquiry. Recent reports suggest significant local, state, and federal funds will be allocated toward fighting the opioid crisis, with a large proportion going toward provider interventions and training (Collins et al., 2018; McCarthy, 2016; Schuchat et al., 2017). Information collected from the CAP-POD has potential to inform such efforts by identifying contextual factors influencing capacity and then evaluating programs aimed at increasing capacity to treat co-occurring chronic pain and OUD.

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Supplemental material

Supplemental material for this article is available online.

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