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# Qualitative Investigation of a Brief Chronic Pain Screening Tool in HIV-Infected Patients

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**Abstract**

Chronic pain in HIV-infected patients is prevalent but understudied. A limitation of HIV/chronic pain research to date is the lack of a widely used chronic pain screening tool. A Brief Chronic Pain Screening tool (BCPS) has been described, but has not yet been tested in a clinical population. This study sought to evaluate how the BCPS is experienced by HIV-infected individuals, and adapt its questions if necessary. We conducted cognitive interviews using cognitive inquiry in participants from the UAB 1917 HIV Clinic Cohort. Data were analyzed using a process of inductive, iterative coding by three investigators. Results: Of 30 participants, most were male, African American, and less than 50 years old. Participants reported that the questions were understandable; however, feedback suggested concerns regarding lack of specificity in regard to the intensity and consistency of pain. An introductory statement aimed at improving clarity resulted in more divergent responses. This research team concluded that the version of the BCPS used in the first 30 interviews was optimum. Its inclusive language allows the respondent to decide what pain merits reporting. This study is the first investigation of the BCPS in a clinical population, and should lead to further quantitative validation studies of this tool.

## Introduction

Due to advances in antiretroviral therapy (ART), patients with HIV can live long, relatively healthy lives.[1] As a result, the field's focus has broadened from finding the best ART regimen to achieving the highest possible quality of life. Despite the increasingly patient-centered focus of HIV research, chronic pain in HIV remains understudied. Defined as pain lasting longer than 3–6 months,[2,3] chronic pain affects up to 20% of the US population,[4] and up to 85% of patients with HIV,[5–13] depending on the method of measurement used. Chronic pain in HIV-infected patients consists of the same pain types seen in the general population, including peripheral neuropathy, low back pain, and other regional musculoskeletal pain syndromes.[14]

An important first step in studying chronic pain in HIV-infected patients is identifying individuals who are likely to have chronic pain—that is, screening for it. A screening tool for chronic pain, as with any other screening tool, should be brief. However, it must also meet the challenge of identifying individuals with a heterogeneous condition. The types and patterns of pain experienced by individuals with chronic pain vary widely,[15] and accordingly, the consensus definition of chronic pain remains inclusive.[3,16] If continuous pain from fibromyalgia and intermittent pain from arthritis both qualify as chronic pain, then a useful screener may have to reach for breadth at the expense of specificity.

No widely used clinical screening tool for chronic pain has been developed in the general medical population, or in HIV-infected patients. Primary care settings may use a simple 0–10 numeric pain rating scale to measure pain. Such scales lack any measure of chronicity, and miss a third of clinically important pain.[17] Most studies of chronic pain prevalence in HIV-infected patients rely on queries pertaining to short time frames (1 day to 1 month),[5–13] or methods of screening for chronic pain that have not been validated in any clinical population.[13] Furthermore, well-validated pain questionnaires, such as the Brief Pain Inventory[18] and Multidimensional Pain Inventory,[19] have been used to study pain in patients with HIV,[5–13] but are not designed as screeners. As detailed questionnaires, they were designed to understand

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pain's impact on physical and emotional function in patients already known to have a pain condition, whether acute or chronic. However, the screening tool must advance a separate objective: offering preliminary identification of persons who may have the condition of interest and for whom follow-up and more detailed assessment is needed. This type of tool is important, as it allows for identification of individuals with chronic pain for epidemiologic studies, or for clinic or systems-based interventions. Screening tools are typically much shorter than even a brief measurement tool such as Brief Pain Inventory (less than 1 min versus 10–15 min to complete), allowing for integration into primary care settings. Additionally, screening tools are often used as a first step, and when positive, are followed by more detailed, time-consuming instruments. Therefore, despite the presence of numerous well-validated clinical instruments to understand the impact of chronic pain, development of screening tools is critical to advancing the study of chronic pain in general, and in HIV.

A recently published screening tool, here termed the Brief Chronic Pain Screening tool (BCPS), represents a meaningful scientific advance.[15] It asks, ''How much bodily pain have you had during the last week?'' (none, very mild, mild, moderate, severe, very severe), and ''Do you have bodily pain that has lasted for more than 6 months?'' (no, yes). In a study of 3000 healthy Norwegians, stability analyses of pain severity over a 1 year period were used to establish a cutoff of at least moderate pain for more than 6 months. This instrument was used to categorize patients into two categories (chronic pain yes/no), and it achieved 80% sensitivity and 90% specificity compared to repeated measurements of pain every 3 months using the SF-8 bodily pain question as criterion measure.[20] While promising, the BCPS has not been investigated in the US, in medical care settings, or in HIV-infected patients. We used cognitive response interviews to evaluate how the BCPS questions are experienced by HIV-infected patients with chronic pain, and if necessary, to adapt the questions for this population.

## Materials and Methods

### *Study design*

Qualitative interviews were used to investigate how HIV-infected patients experienced the BCPS questions. Given the sensitive nature of chronic pain, frequency of psychiatric and substance abuse comorbidities,[21] and need for detailed individual feedback on the BCPS, we chose to conduct individual cognitive response interviews rather than focus groups or other forms of group discussion. In instrument development, cognitive response interviews typically ask respondents to ''think aloud'' when presented with draft items, and serve as a first-level check on whether the items generate reflections that align with designer expectations.[22,23]

Additionally, although the Diagnostic and Statistical Manual applies a 6-month cutoff to define chronic pain,[16] other definitions, including the International Association for the Study of Pain definition,[2] use a 3-month cutoff. For this developmental exercise focused on screening (where somewhat higher sensitivity may be desirable and follow-up assessments are relatively nonburdensome), the second item in the BCPS was adapted to incorporate a more inclusive standard of 3 months.

### *Research context*

This study was conducted within the University of Alabama at Birmingham 1917 Clinic Cohort, a prospective cohort of >2000 HIV-infected patients, part of the Center for AIDS Research Network of Integrated Clinical Systems (CNICS) national multisite cohort.[24,25] For Cohort participants who have enrolled in the CNICS protocol (>90%), Patient Reported Outcome (PRO) measures on a variety of topics are available including depression, anxiety, and substance use. These measures are collected at touch-screen computers every 6 months.

### *Inclusion criteria and sampling*

Inclusion criteria for this study were age ≥19 (Alabama's age of majority), reading and speaking English, and participation in the CNICS cohort. Participant selection was designed to ensure representation of patients who are likely to be the target of future chronic pain interventions, and who are vulnerable to worse pain-related outcomes.[26,27] Therefore, a purposive sample was developed to recruit individuals with *and* without various combinations of mood disorders, defined as depressive symptoms (PHQ-9≥10) or anxiety symptoms/panic (PHQ-Anxiety module),[28] and substance use. The latter was defined as use of illicit opiates, heroin, cocaine, or amphetamines, within the 6 months prior to enrollment, as reported on the Alcohol, Smoking, and Substance Involvement Screening test (ASSIST).[29] To assure inclusion of individuals with pain, we recruited participants who reported pain within the past 6 months on the EuroQOL pain question (a standard CNICS PRO measure), which asks about pain ''today.''[30] A study visit was arranged, typically on the same day as a participant's HIV primary care visit, and each participant gave consent prior to the interview. Patients who were members of the 1917 Clinic Chronic Pain Patient-Provider Advisory board were not eligible to participate in this study, as they assisted with pre-testing the interview guide (see Interview Design below). Participants were reimbursed $20. This protocol was approved by the Institutional Review Board of the University of Alabama at Birmingham.

### *Interview design*

Development of the interview guide drew on advice from a panel of experts in HIV, chronic pain, qualitative methods, cognitive interviewing, and screening tool development. We also developed a Chronic Pain Patient-Provider Advisory board for this project, including physicians, a psychiatric nurse practitioner, social workers, pharmacists, clinic director, and 1917 Clinic patients with HIV and chronic pain. Members of the advisory board pre-tested the guide and provided feedback.

The interview guide begins with the interviewer showing participants a paper and pencil version of the two BCPS questions in large print. It uses the cognitive response interviewing ''think aloud'' technique,[22,23] with concurrent verbal probing[31] to further understand participants' responses. This technique has been used to examine participants' cognitive processing strategies as they think through a question or problem. There is evidence that this process does not interfere with task completion, and as a result, is a good method of cognitive inquiry.[32,33] Our probing strategy was specifically

designed to assess the two items' acceptability, clarity, response variation, and content validity. In an effort to probe content validity, we asked participants whether they had any discomfort other than pain that influenced their response to the BCPS (Table 1).

### *Data collection and analysis*

Interviews lasted approximately 1 h. They were audio recorded and transcribed verbatim. This allowed for review and analysis of the qualitative interview data while interviews were still being conducted, typically within the week. Given the interest in uncovering how HIV-infected patients experienced and understood these questions, our coding approach was inductive. The transcripts were initially coded by IH, who developed the codebook while remaining blinded to the interview guide. Subsequently, three investigators (JSM, MW, IH) engaged in an iterative process of independent and group coding. Interviews were conducted until theme saturation was reached. Data were coded using NVivo V 10.0. Summary statistics were presented using the cutoff of at least moderate chronic pain for at least 3 months established in the original study of the BCPS.[15]

## Results

In order to successfully recruit 30 participants, the interviewer (MW) called 122 potential participants, of whom 69 could not be reached, 14 declined, 40 accepted, and 31 arrived and provided informed consent. One interview was terminated early due to a personal emergency, and sufficient data was not available for analysis.

Table 2 describes participant characteristics by their response to the BCPS. Among the 30 participants interviewed, most were male, and just over half were African American. Most were < 50 years old, and many had mood disorders or substance use.

Here, we present qualitative findings from the BCPS adaptation process. These are followed by findings based on efforts to test an introductory statement, the need for which emerged from the initial data as described here. We will present themes with corresponding brief explanations, followed by illustrative quotes.

### *Difficulty understanding the question*

All 30 participants stated that that the questions were easy to understand. Despite an extensive process of verbal probing, participants did not report difficulty with either question. For example, participants felt that the questions did not need any alteration:

*''They seem like two questions that are very to the point, very specific, um they seem like pretty simple questions, simple questions that would be easy to answer.''* 42-year-old African American male with pain

Two participants expressed concern about the questions being too ''obscure, wide-open…nothing specific about it''

Table 1. In-Depth Interview Guide

| | |
|---|---|
| Opening | I am going to show you two questions. If you have any trouble reading the questions, we would be happy to read it to you. As you respond to the questions, please try to think out loud about your experience as you go. Please describe your thoughts, feelings and choices about the questions. |
| Required ''think-aloud'' probes | What are you thinking about as you answer this question?<br>How do you feel about the wording of that question? Is it understandable? Do you think most people would understand it? Are there any words or phrases that could be misunderstood? |
| Optional ''think-aloud'' probes | How did you decide on your response choice?<br>What does the question mean to you, in your own words?<br>Is there anything else about this question that you'd like to tell me? |
| Discomfort other than pain | Going beyond these two questions, are there any kinds of discomfort, besides bodily pain, that are important to you? If yes:<br>What are they?<br>Did you have them in mind when answering the two questions I showed you? |

Table 2. Participant Characteristics by Brief Chronic Pain Screening Tool (BCPS) Results (N = 30)

| | *Brief Chronic Pain Screening tool result*[a] | | |
|---|---|---|---|
| *Characteristic* | *No pain, very mild or mild pain, or pain for less than 3 months (N = 12)* | *Moderate-very severe pain for at least 3 months (N = 18)* | *Total (column %)* |
| Female | 0 | 5 | 5 (17%) |
| Male | 12 | 13 | 25 (83%) |
| African American | 7 | 12 | 19 (63%) |
| Caucasian | 5 | 6 | 11 (37%) |
| Age ≥ 50 | 4 | 8 | 12 (40%) |
| Age < 50 | 8 | 10 | 18 (60%) |
| Pain[b] | 7 | 18 | 25 (80%) |
| Mood disorder[c] | 2 | 15 | 17 (57%) |
| Substance use[d] | 5 | 9 | 14 (47%) |

[a]This reflects the results of the BCPS administered at the beginning of the interview. BCPS results typically dichotomized as moderate–severe pain for at least 3 months (= chronic pain) and none, very mild, or mild pain, or any pain less than 3 months (= not chronic pain)

[b]Based on the EuroQOL pain measure indicating moderate or severe pain within the 6 months prior to enrollment.

[c]Based on a PHQ-9 ≥ 10 or a PHQ-Anxiety module consistent with anxiety symptoms/panic within the 6 months prior to enrollment.

[d]Based on an ASSIST reporting use of opiates, heroin, cocaine, or amphetamines within the 6 months prior to enrollment.

(49-year-old white male with a mood disorder) or ''vague'' (31-year-old white male without pain, mood, or substance use). However, both went on to say that they thought the questions were easy to understand (e.g., *''I can't see why anybody wouldn't [understand them]''*).

### *Perception of the term "bodily"*

The word ''bodily'' is embedded in both BCPS questions. Participants indicated that they did not experience difficulty with interpreting the word ''bodily.'' The following are two examples in which participants who emphasized that their interpretation of the word ''bodily'' was relatively straightforward and literally referred to pain in their bodies:

*''Uh, it means to me how much bodily pain I'm having. It means you're just asking me how much pain do I have in my body and where it is in my body.''* 34-year-old African American male with pain, a mood disorder, and substance use.

*''Body pain? Anywhere basically from, you know, your head to your toes, I guess.''* 53-year-old white male with pain and substance abuse.

Other participants understood the word bodily to refer to the pain's significance. For example, some participants explained bodily pain as pain that interferes with an individual's daily life:

*''Well for bodily pain—bodily pain for me is something that keeps you from doing your normal activities; whether it's getting up out of the bed, washing dishes, going to work, driving that type of thing that stop you from doing your day to day activities. That's what I think for bodily pain that can stop you from doing those things.''* 52-year-old African American male.

No participant seemed to confuse physical or bodily pain with other types of pain. For example, two participants drew a distinction between bodily and emotional pain, as intended. For example, one participant stated:

*''Well when I say bodily pain I think of physical, I mean like your arms, legs, back….You know, but I—but I guess for mental pain—I mean it could be emotional too. But I would think just more or less from—I mean like if you injured your back or legs something like that. I mean when you talk—I mean even though emotional deals with the whole body but I just think you know, this for me is more or less talking about the body, the arms, leg, neck, back, feet and that kind of thing.''* 52-year-old African American male.

### *Discomfort other than pain*

Participants were specifically asked whether they experienced discomfort other than pain, and whether they factored such discomfort into their response to the BCPS. Participants reported a wide variety of discomforts, including depression (5), stomach discomfort (3), anxiety (3), and a range of other somatic symptoms (nausea, constipation, shortness of breath, headache, and cramps, 1 each). However, when directly asked, only one participant reported that discomfort other than pain, in his case depression and anxiety, influenced the way in which he answered the BCPS:

Interviewer*: ''So in terms of your ment[al]—I'm tryin' to understand how your mental state, that discomfort, how it influence you answer in this question.''*

Participant: *''OK. Now some days there are days when I don't feel like doin' anything. But I know that I have to and uh it really—some—and it—it either makes me depressed or—or—or I have anxiety or—and some days I even have panic attacks. But uh I realize that the medication is important for me as far as controlling the pain.''*

Interviewer: *''Mm-hmm, OK. Uh so if you weren't thinkin' about that discomfort, how might have you answer with this question, question one?''*

Participant*: ''Well, it's kinda hard to not think about discomfort because like I said, it's always there.''* 48-year-old African American male with pain, a mood disorder, and substance use.

### *Suggestions for improvement*

Participants were specifically asked for suggestions on how to improve the BCPS. Several commented on aspects of pain that a brief screening tool does not readily assess. For example, some participants pointed out that the psychological aspects of pain are not captured by the BCPS:

*''The mental thing side of pain is a whole lot more bigger ball [stammer] ballpark than the bodily pain, okay? Okay. Because I believe most people would just…You know, I, I've seen it, you know, that people have, have a little physical body prob, problem with, with the body the, that's a big issue. But I think even a bigger issue is, is the problems with the mental pain of how you deal with it.''* 64-year-old white male with pain and a mood disorder.

One participant pointed out that pain is subjective, and that individual variations in tolerance and emotional responses to pain influenced his assessment of the BCPS questions:

*''Well like I said, to kind of ask exactly what I said. Are you, can you stand pain? Are you like used to pain or do you just freak out about every little pain? So that would be a good question for me. I mean, I would think so. To see how a person react to pain. Is they like, I don't want to say a pain freak, not a pain freak but you know somebody like me that can take pain or they just can't take it at all. So that way you can understand the level of what they trying to explain to you.''* 49-year-old African American male with pain.

Participants also pointed out that the BCPS is not specific regarding the type of pain:

*''I will say this about both those questions when it comes to pain. There's more than just one kind of pain, okay?''* 64-year-old white male with pain and a mood disorder.

*''You might need to be a little bit more specific about the type [of pain].''* 53-year-old African American male with pain and substance use.

One participant noted its lack of specificity in regard to location, and which location is most important:

*''Uh, again, I would say, you know what—be more specific about what parts of the body you mean, where—you know, where—where you know, where—where's the pain the worst? Is—is it your shoulder or—or you know how much body pain have you had during the last week in—in your neck, your shoulder, your—your back, your knee, your leg, kind of thing.''* 53-year-old white male with pain and substance use.

Other participants pointed out that the BCPS does not allow a participant to indicate the temporal pattern of their pain:

*''Um, okay. Yes. I mean I make—I make it two questions out of one. I'd ask how much body pain have you had during the last week? And then I'd turn around and say, 'Also in the last twenty-four to seventy-two hours.' And um, it should ask*

*have the—the pain got better or worse. Because that's something they should know, if the pain have got better or worse.''* 49-year-old African American male with pain, a mood disorder, and substance use.

Similarly, some participants expressed concern that the BCPS does not specify whether pain of interest would have to be constant, or could have a more intermittent pattern. This introduced uncertainty as to whether an affirmative response would be appropriate for both situations. The following three quotes are illustrative:

*''It was a little confusing about the pain. I guess it's because of my particular pain. Mine is not a constant pain. The only pain that I can relate as far as this study is the occasional stomach discomfort…I'm not sure, but I think I may add the word constant in there or something. For some reason I'm getting the impression that this question is in relation to some type of constant bodily pain. Which I do not experience''*. 53-year-old African American male with pain and substance use.

*''I would like there to be a second part to the question, to say is your pain consistent every day for three months.''* 37-year-old white male with pain and substance use.

''*I would change the duration, which they give in the past week. You know? Sometimes conditions don't bother us on a daily basis or weekly basis. It just happens from time to time, periodically. I have answered questions before similar, where they said in the past week or in the past 6 months. And I have not experienced it, but if I go back past that time that they are asking I have experienced it. But I'm out of the time frame now, that the question is asking.*'' 37-year-old African American male with substance use.

### *Response to participants' concerns/suggestions*

For the most part, participants identified the BCPS items themselves as acceptable and clear. Feedback included concerns about how to factor in perceptions of capacity to endure pain, the importance of emotional suffering in individuals with chronic pain, chronicity of pain, pain location, pain type, and pain consistency.

The definition of chronic pain is explicitly broad and inclusive with regard to these issues (e.g., includes individuals with any capacity to endure pain, pain in any location, and of any type). Additionally, the BCPS specifies a duration of pain (3 months) that is widely accepted. Therefore, these concerns did not suggest a problem with the questions themselves. However, we sought to explore whether participants would benefit from more explicit clarity regarding the inclusive definition of chronic pain. Without such clarity, different participants might respond with different definitions in mind, producing results reflective more of their perception of the question than their experience of pain. Therefore, we attempted to adapt the BCPS to produce a uniform expectation among participants about the types of pain that should invite an affirmative response.

As the questions themselves were mostly seen as clear, we tried to craft an introductory statement. The proposed introduction focused on issues of pain type and consistency. The language was designed to clarify an interest in pain that exceeds what a typical person might experience in the course of daily life. Simultaneously, the language sought to underscore that pain need not be constant to qualify as chronic. To advance both objectives, we used the introductory statement from one of the most commonly used pain questionnaires, the Brief Pain Inventory-Short Form, as a starting point.[34] This statement reads: ''Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). Have you had pain other than these everyday kinds of pain today?'' Based on our qualitative analyses, we developed three different modifications of this statement, which were reviewed by four of the authors (JSM, MW, EC, and SK) with both content and methodological expertise. Based on group consensus, we tested the following two-sentence introduction: ''Throughout our lives, most of us have had pain from time to time (such as minor headaches, sprains, and toothaches). We would like to know about pain you have had other than these everyday kinds of pain, even if you haven't had it all the time.'' This statement required only a 7$^{th}$ grade reading level.[35]

### *Pilot test of introductory statement*

We tested the two-sentence introduction in additional individuals drawn from the same general population. As the first 30 individuals provided sufficient information as to the performance of the two BCPS questions, the purpose of this additional testing was solely to investigate the usefulness of the introductory statement.

Among four respondents, the introductory statement quickly drew strikingly divergent responses, including confusion as to what was being asked.

For example, the word ''everyday'' lent itself to subjective interpretation resulting in participants making decisions about what types of pain counted. When asked what the term ''everyday pain'' meant, one participant replied:

*''Um, that would mean, um, pain that had, to me, it would be pain that had a, uh, a catalyst, if you will…Um, it wasn't just, I mean, uh, yes, uh, a, a sprain and a toothache has a catalyst, I mean, but, it's something uncontrollable.''* 42-year-old white male with pain, a mood disorder, and substance use.

This participant seemed to assign meaning to the underlying pain mechanism (''catalyst'') and to the manageability of the pain.

Two participants also reported that the two-sentence introduction left them unsure if arthritis pain and substantial headaches should be included when responding to the BCPS:

Interviewer: *''Would you have answered the question a different way if the [introductory] statement weren't there?''*

Participant*: ''Probably. Probably. Um, I probably would have expanded my recollection some, you know to include um, to include things like—like substantial headaches um, just because I'm wrestling with that right now. That's one of the things that I deal with is headaches that I can't treat, because I can't take any NSAID's. Um, so it—it did in some way. Yeah.''* 48-year-old white male with pain and substance use.

One participant struggled with the second sentence. While he believed he understood it and felt it provided additional ''clarity,'' he was concerned that others might not have the same experience:

*''I think if you're trying to drive—if you're trying to drive a particular type of—of um, introspection from your—from your client about pain, that that second [part] might be a little clearer…Well, remembering that in this region the average health literacy is fifth grade um, I think—I think it*

*might—it might be a shorter sentence and more specific, maybe bulleted.''* 48-year-old white male with pain and substance use.

Only one of the four participants seemed to clearly understand the introductory statement:

*''Well, I interpret it that he would, he or she was asking about the pain, and saying that, you know, or asking what different type of pains that we have, and is going to precise, um, wording that, you know, if we, you know, like right here it says, 'We all would like to know about pain you have and had through, um, everyday kinds of pain.' They are saying that, you know, they want to know what other kind, you know, if it's just small, whereas, um, minor, you know…what other kind of pain it is. They would like for us to, you know, explain what kind of pain we have…You know, so it's like I said, it was, I wouldn't reword it any other way, because, you know, it's, usually just, it just comes right off the top that you can just, you could just explain to, put it like, I understood where he was, or she was saying when I read it, you know.''* 44-year-old African American male with pain and a mood disorder.

The confused and divergent response patterns, evident among four participants, were seen as a convincing indication that the proposed alternative introduction did not merit continued use.

## Discussion

This research represents the first investigation in a clinical setting of a recently described screening tool for chronic pain.[15] Based on the results of a systematic process of qualitative cognitive interviewing in HIV-infected patients, including persons with mood disorders and substance use, we assert that the BCPS may be used without modification or adaptation to screen for chronic pain in this population. This tool should enable further research on the clinical epidemiology and management of chronic pain in HIV-infected patients using the BCPS.

Our qualitative investigations suggested that the BCPS questions themselves were understandable and straightforward. BCPS Question 1, which asks about pain severity, was taken directly from the SF-8, which has been widely used and has well-described psychometric properties.[36] However, the second question was developed by the authors of the original BCPS paper.[15] Notably prior to this investigation, neither has been specifically tested in HIV-infected patients, or in patients with psychiatric complexity.

Participant feedback indicated that the BCPS is not specific with regard to pain type or consistency over time. However, when we attempted to resolve this problem by providing a clarifying introductory statement, the statement was interpreted very differently by different participants. Revised introductory language drew highly divergent responses based only on the interpretation of the questions, not on the participant's pain. As a result, we opted to return to the version of the BCPS used during the first 30 interviews. In so doing, we knowingly sacrificed efforts to attain additional specificity in order to retain both sensitivity and a more uniform understanding of questions' wording. This approach allows the individual to decide what pain merits reporting, a stance that seems consistent with the highly subjective nature of chronic pain.

The introductory statement we adapted was based on the introductory text from the Brief Pain Inventory. We found wide misinterpretation of the term ''everyday,'' which is part of the standard version of the Brief Pain Inventory. The Brief Pain Inventory is very widely used, and notably, that introductory statement has never undergone qualitative assessment.[34]

Screening for pain is required in many health care settings.[37] Currently, many settings screen for pain by asking patients to rate their pain on a 0–10 scale. However, such a scale has never been investigated as a screening tool for chronic pain, and there is evidence that this scale misses a third of clinically relevant pain.[17] Given the relatively straightforward performance of the BCPS in this study, and lack of evidence for currently used screening methods, the two-question screening approach for chronic pain in HIV primary care settings warrants consideration. Regardless of the screening tool used, positive screens should be followed by a more detailed evaluation that captures pain's impact on physical and emotional function (e.g., Brief Pain Inventory,[18] Multidimensional Pain Inventory[19]).

The research presented here has limitations. First, the findings cannot be assumed to apply outside of HIV-infected individuals. Second, our finding that an introductory statement created confusion may not apply in all settings. Our decision to omit an introductory statement reflects a willingness to accept that individuals screening positive for chronic pain on the BCPS will reflect very diverse range of pain experiences that must be explored with follow-up testing. This intentionally broad and inclusive approach is both a strength and a limitation of the BCPS.

Additionally, we have not yet completed quantitative validation studies of the BCPS in HIV-infected patients. Such studies will include comparison of BCPS results with results of instruments that assess symptoms common in individuals with chronic pain, such as depression and impaired quality of life. These qualitative investigations are an essential next step, and a critical part of understanding the BCPS' performance as a screening tool.

In summary, the BCPS is the first published chronic pain screening tool and our study represents the first investigation of this tool in a clinical population: HIV-infected patients. Going forward, we believe that the BCPS merits consideration as a screener in clinical and research settings.

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## Author Disclosure Statement

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