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“That Pain Is Genuine to Them”: Provider Perspectives on Chronic Pain in University Student Populations

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Abstract

We explored provider attitudes about and experiences in chronic pain management for university student populations. Our central question was: “What do providers at a large university campus health care center experience in the process of offering pain management services?” We explored instrumental, behavioral, emotional, and attitudinal dimensions of our participants’ experiences using a qualitative case study approach. Data were gathered through semi-structured interviews with 10 health care providers at the student health center for a large research university in Florida. Interviews captured providers’ background and experiences in providing pain management to student patients with diverse needs. We used grounded theory techniques for data analysis (i.e., collaborative content analysis with open coding). Data reflect differences in perceptions of chronic pain prevalence and palliation best practices. We identified five themes: different perceptions of chronic pain prevalence, awareness of painful conditions, palliation as a contested process, importance of communication, and multidimensional perspectives. Responses varied by training, specialization, experience, and sociodemographics. Our findings mirror the broader literature on pain management. We outline priorities for further research in university health care settings, and suggest participatory strategies for translating associated findings into targeted plans for clinical care improvement.

Keywords

Pain Management, Adolescents, Young Adults, Health Care, University Clinics, Medical Providers, Case Study

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Chronic pain management remains a frequently studied topic in health services research, as well as a constant source of change and reform in clinical care practices. Yet these efforts are often restricted to health care settings that capture only specific portions of the total population that may experience persistent pain. University students represent one population whose pain management needs and outcomes are not yet documented in the literature. Gaps in the literature are particularly large for students who receive their health care on campus.

Understanding these dynamics requires gathering perspectives from both campus health service users and the clinical providers who care for them. Extant literature suggests that differences in provider perception of pain prevalence and severity as well as appropriate clinical responses may limit the number and scope of pain management services delivered in a given health care setting, especially if providers work one-on-one rather than in teams. These differences can stem from variation in academic and professional training (Duke et al., 2013), disparities in access to health care resources and technologies (McGreary, McGreary, & Gatchel, 2012), limited scientific understanding of different pain types and pathways (Smith, Torrance, & Johnson, 2012), unconscious bias about people from different social backgrounds

(Wandner et al., 2014), and/or diversity in how people from different cultures communicate about pain (Campbell & Edwards, 2012).

Students on university campuses are often a highly diverse population, especially at large schools enrolling learners from multiple countries and cultures. Studying chronic pain management services at the campus health center for a large research university thus offers opportunities both to understand overall successes and challenges in palliation for student populations, and to illuminate potential disparities in processes and outcomes for students with different backgrounds and circumstances. Conducting research with student users of health services also presents unique challenges for confidentiality and participant protection, in addition to the recruitment challenges implied previously. We thus saw value in beginning with providers to understand their perceptions of the magnitude and scope of chronic pain within their service population, and assessing their attitudes about how to manage these health challenges.

Our diverse team of sociomedical science and social psychology faculty, graduate students completing degrees in public health, and undergraduate students from a variety of health-related majors designed and implemented a qualitative case study to explore pain management in university settings. We conducted semi-structured interviews with 10 campus health services providers of different backgrounds and specializations, asking each participant questions about their pain management activities with students. Our interviews revealed striking differences in both perceptions of the prevalence of chronic pain in university populations, and beliefs about how to address chronic pain among student health service users.

Background

As person-centered medicine becomes more of a focus in health care, clinicians and researchers increasingly attend to characteristics that may impact the needs and preferences of patients. These may include both personal experiences and population-level trends relevant for the health and comfort of specific individuals (Lorentzenm, Hermansen, & Botti, 2012). Indeed, managing pain represents a key priority for practitioners of person-centered health care in a variety of settings and with a variety of social groups (Stanos, 2012). Treatment and research activities surrounding pain management with diverse populations have yielded a rich literature on palliation.

Although research on pain management is robust and wide-ranging, it is not yet comprehensive. Some important clinical populations and settings have yet to be studied with respect to a variety of aspects of person-centered medicine, including but not limited to pain management. Our literature search revealed a comparatively small body of work on pain management related to the specific experiences of university students and their health care providers at campus clinics.

Literature Review Methods

We conducted this search through a collaborative process in which each of our undergraduate and graduate research assistants as well as the PI searched multiple library databases for key terms relevant to the study scope. Key terms included “pain management,” “palliation,” “pain,” “university,” “campus,” “clinic,” “health care,” “providers,” and “students.” We principally searched on OVID PubMed and JSTOR, but also used Google Scholar to help us find literature not indexed by either of those databases. Google Scholar also conferred the advantage of locating relevant books as well as journal articles. Throughout the literature review process, each student and the PI maintained a bibliography of all articles and

books they had found so far. Our study staff then shared their individual bibliography files, and a master list of relevant articles was compiled for further review.

Research on University Health Care

Reviewing relevant journal articles and books showed us that undergraduate and graduate students who use university health care services comprise a patient group whose experiences remain largely unexplored in the literature. We note two specific gaps in extant literature: (1) lack of attention to the pain management needs of university students in general, especially those receiving care at their universities' health centers; and (2) absence of health care provider perspectives on the process and outcomes of pain management for university students.

Little research currently exists on health care for university students delivered in campus settings. Similarly little scholarship is presently published on the experiences and perceptions of providers who care primarily for university students. This research is especially parsimonious with respect to pain management, an area of medical care with which providers frequently experience frustrations and concerns (Stockler & Wilcken, 2012). We could not find any studies matching a variety of search terms related to provider accounts of participation in pain management for university students, or indeed any studies of pain management at campus clinics.

However, we did find several studies addressing university health care in general. Characteristics of student clinic users were a key feature of this literature. Specifically, prior studies of university health services outline a number of factors contributing to unique care needs in students, as well as ways in which students may be similar to other patient populations. Most of this literature focuses on acute care for illness and injury, primary prevention of adverse outcomes, and general health promotion. Sexual health resources (Eisenberg et al., 2012), rape and assault education (Buchholz, 2015), mental health counseling (Conley, Durak, & Dickson, 2013), physical activity opportunities (Milroy et al., 2012), nutrition support programs (Lenders et al., 2013), and substance abuse prevention (Kilmer, Bailie, & White, 2012) are major emphases spanning these areas.

By contrast, we did not find literature describing either chronic care services at university clinics or the distribution of persistent conditions in student user populations. This may change in the future as interest in both university health care (Turner & Hurley, 2015) and young adults with chronic care needs (Pepper, Kirshner, & Ryglewicz, 2014) continues to grow.

Research on Pain Management

We also found several studies addressing provider accounts of pain management with other populations. Provider awareness of pain prevalence and palliation-related needs in different clinical populations is a frequent theme in the general literature on pain management. Specifically, the literature suggests that providers with different training and socialization may differ substantially in their perceptions of how different types of pain are represented in their patient populations (Sophie & Ford, 2012), as well as how pain should be managed (Manchikanti & Hirsch, 2012). Researchers have observed differences in perception among providers of diverse backgrounds and clinical specializations with respect to a variety of pain types. These include chronic (Hollingshead et al., 2015), acute (Hwang & Platts-Mills, 2013), neuropathic (Vranken, 2015), and nociceptive (Green, 2013) pain.

Chronic pain represents a particular emphasis in this research, and one that remains highly contested with respect to both treatment modalities (Mercadante & Giarratano, 2012)

and ethical considerations (Loeser, 2012). Both inconsistent awareness of chronic pain prevalence and discrepancies in beliefs about best practices for chronic pain management have been noted by scholars in a variety of provider populations and practice settings (Meghani et al., 2012). These include acute care hospitals (Kozlowski et al., 2014), outpatient pain clinics (Rabow et al., 2013), primary care offices (Spitz et al., 2011), and federally qualified health centers (Teevan, Zlateva, & Anderson, 2015). Sociodemographic characteristics of patients, such as sex and race, often contribute to disparities in provider beliefs about and responses to chronic pain (Dovidio & Fiske, 2012). Specifically, people of non-male sexes and non-white races appear to receive both less attention to and services for their reports of pain. Provider perceptions of likely health lifestyles can also impact how they address chronic pain reported by a patient (Schumacher et al., 2014). For example, believing that a patient is engaging in health-harming behavior can limit providers' willingness to prescribe pain medication. Substance use and abuse is a particular emphasis in this literature. Clinical treatment guidelines for opioid prescribing pay ample attention to concerns about drug-seeking behavior (Oliver et al., 2012). Widespread social myths about opioid use for pain management, such as the idea that everyone who gets prescribed painkillers for a prolonged period of time automatically develops addiction, also impact care practices (Pizzo & Clark, 2012).

Shaping Our Study Focus

University students as a population may have specific characteristics in both of these categories that impact providers' perceptions of their ability to experience chronic pain, as well as the appropriateness of particular care modalities for their needs. In addition to similar levels of educational attainment, these characteristics may include chronological age and social class, and health behaviors associated with all of these characteristics. Likewise, university health centers often employ providers with diverse training, suggesting the potential for variation in pain management attitudes and practices by provider attributes (Bartley et al., 2015). In reviewing our interview data from a general study of provider experiences in pain management at a large research university's student health center, we thus questioned whether similar patterns of perception and action to those in the general literature on chronic pain management would emerge for health care providers practicing on university campuses.

We took a specific interest in university health care populations because of our study team members' overall interest in calling attention to and advocating for populations that may be overlooked in health care. Our PI has specific interests in and experience with pain management research dating back to their time in the MPH program at Rutgers University, when they studied pain management practices in acute care hospitals throughout New Jersey for their fieldwork project. Like the current study, this project used qualitative key informant interviews to capture data.

The PI and several other members of the study team also live with painful chronic conditions, and in the case of the PI specifically, experienced exacerbation of painful symptoms during late adolescence. This experiential context heightened our interest in inquiry on university populations. Likewise, the PI had recently been asked by a colleague who did not do pain management research but was generally interested in studies of campus health services if any studies existed on pain management in university campus health centers specifically. These factors combined to point us in the direction of studying pain management in university settings.

When the PI approached the MPH program leadership at the school where the research was conducted about engaging some students in this project, three students who had internships at the university health center volunteered to help with data collection and analysis. This gave us a unique ability to engage providers at the clinic by working through interpersonal channels

to ensure widespread knowledge of and opportunities to participate in our study. It also gave us the opportunity to report our results through multiple channels, since providers who could not attend the formal presentation that we made after completing the study could follow up easily with the individual student employees with whom they had worked.

In conducting this study and reporting the results, our study team had three principal aims: to (1) improve the knowledge base about pain management in university campus health services by (2) amplifying the voices of providers serving undergraduate and graduate student populations, and in so doing (3) identify opportunities for improving pain management for student populations not receiving adequate services. These aims focused on both the specific campus health center with which we partnered in conducting the study and the general informational needs of university campus health centers around the globe. An overarching goal of the study was to stimulate further inquiry on the core topics for all three specific aims listed above.

Methods

Research Questions

To bridge identified gaps in the literature, we developed a qualitative study to assess the pain management experiences and perceptions of student health care providers at a large research university in Florida. We took an inductive, exploratory approach with our study. Consequently, we did not seek to test any specific hypotheses. Rather, we explored how providers experience the process of pain management in student health settings.

We asked questions about providers' history of pain management activities, challenges in the process of pain management, and any additional information providers might wish to share. We probed for in-depth information about frustrations and successes that providers have experienced in attempting to provide effective, sustainable pain management options for students with both lasting injuries and chronic diseases. We explored barriers that providers have encountered in providing specific treatments, as well as successes that they have achieved in overcoming these barriers.

Study Design

We conducted semi-structured interviews using a set of five questions with nested prompts. We chose this approach for two key reasons. First, we could not access any kind of large-scale qualitative or quantitative data on university-based pain management given the limited inquiry conducted on this topic to date. Second, the PI had experienced success with collecting rich data on hospital-based pain management via key informant interviews during their graduate fieldwork experience. This methodology offered the surprising benefit of encouraging providers to share their feelings about the pain management process as well as information about the specific activities they were involved in.

Research methods literature affirms key informant interviews as valuable tools for illuminating not only actions but also feelings about those actions (Gilchrist, 1992; Kleinman, 2007). In health care sectors specifically, information gleaned from key informant interviews with providers can facilitate both interprofessional education and collaborative practice (Barker, Bosco, & Oandasan, 2005). These outputs can ultimately improve quality of services by illuminating best practices in team-based care (Boon et al., 2009).

Our interview instrument asked providers to describe pain management activities with which they have been involved while working at campus health services, describe their role in these activities, and discuss positive and negative feelings they have experienced while

participating. Specifically, we asked campus health services providers about frustrations and triumphs they have experienced in providing pain management services. We asked participants to reflect on any unique challenges they may experience in providing pain management to student populations. The five questions and sub-prompts we used with participating providers are outlined below:

1. *Let's start by reviewing the pain management services you have provided to students during your time with the clinic.*
 - a. *What specific pain management modalities have you used with students?*
 - b. *Are there any modalities you would not feel comfortable using with students?*
2. *Now let's talk about logistical challenges have you experienced in providing pain management services to students. Logistical challenges would be things like trouble getting insurance reimbursement for a specific therapy, or mechanical problems with a pain relief device.*
 - a. *What specific logistical challenges have you experienced?*
 - b. *How have you dealt with these challenges?*
3. *We're also interested in learning about emotional challenges have you experienced in providing pain management services to students. Emotional challenges would be things like feeling frustrated because your patient continued to have pain after trying several options, or feeling helpless to meet a specific patient's needs.*
 - a. *What specific emotional challenges have you experienced?*
 - b. *How have you dealt with these challenges?*
4. *Now let's talk about social challenges have you experienced in providing pain management services to students. Social challenges would be things like having a difference of opinion with your supervisor about how to manage someone's pain, or having trouble communicating with a patient about their care needs.*
 - a. *What specific emotional challenges have you experienced?*
 - b. *How have you dealt with these challenges?*
5. *Thank you for all of your responses so far! We're almost finished. Before we wrap up the interview, I want to give you the opportunity to share anything else you think might be relevant for our study.*
 - a. *Is there anything else you would like to share about your experiences providing pain management to students at the clinic?*

Interviews lasted between 15 and 45 minutes with each provider. Graduate student interviewers collected audio recordings of each interview session, which were then transcribed by undergraduate research assistants for review and analysis.

Recruitment and Participation

The campus health center we studied offers a variety of different primary and specialty care services for undergraduate and graduate students who use the school's health insurance. Because of this and substantially larger enrollment of undergraduate versus graduate students at the university, most people who use the campus health center are undergraduates.

We focused on providers licensed to practice independently, including office consults and prescription orders. This limited potential skewing of data from inconsistencies in scope of possible activities related to pain management by ensuring that providers would be commenting only on their own activities rather than the activities of their supervisors. We

identified 25 providers (as of February 2015) who met our inclusion criteria by reviewing the campus health services website. Our inclusion criteria were very simple: any independently practicing provider at the clinic who offered any type of pain management services to students could participate. We then reached out via email to the medical directors of the campus health center to begin recruitment. Because our three graduate research assistants held either paid or volunteer staff positions with the campus health center, we were able to follow up in person with senior administration.

Health center leadership expressed support for our study and encouraged eligible providers (those with degrees in allopathic medicine, osteopathic medicine, or advanced practice nursing) to participate. Graduate students enrolled interested providers and scheduled interviews, all of which were conducted in March 2015. We reached out to providers about participating in the study by working with the chief administrators and medical directors at the campus health center where we conducted our research. They helped us spread the word about our study and encouraged providers to participate, while also making clear that there would be no penalty for not participating.

A total of 10 providers participated in our study, representing all three eligible professional fields. Given the small size of our sample, protecting confidentiality involved strictly separating any record of a specific provider's participation from their interview transcript. We accomplished this through three avenues: (1) collecting no written documentation of informed consent but rather obtaining consent within the interview audibly without any identification of the subject, (2) instructing participants not to mention their names or any other identifying information during the course of each interview, and (3) storing interview audio files and transcripts with no identifying information in the filenames. We also did not maintain a central record of which providers had been interviewed on which days and at which times. Interviews were scheduled verbally by graduate students following up with interested providers, so scheduling information was not stored in the folders containing the audio files and transcripts.

Providers gave informed consent to participate twice: first upon accepting the invitation to schedule an interview, and again immediately before beginning their interviews. This study was approved by the Florida State University Human Subjects Committee. Initial approval was granted on June 23, 2014. Updates to the protocol were later made to add graduate interviewers and undergraduate transcribers; these were approved on March 9, 2015. Approval for the project was renewed effective March 24, 2015.

Data Generation

Before proceeding to our data analysis, it is important to note the processes that created the data set as well as the nature of the data in use for this article. Data collection for this study began with the consent given by practitioners before each interview noted above. Following receipt of such consent, each practitioner was interviewed by a member of the research team utilizing the interview script shown above. Following elements of grounded theory data collection strategies (Charmaz, 2006), interviews were specific to the outlined interview guide, and then reviewed automatically by a member of the team upon completion. In this way, the interviews were collected while the team constantly monitored the incoming data for any possible adjustments that would be necessary to bolster the existing interview guide (Berg & Lune, 2011). In this way, data collection and initial review were accomplished simultaneously throughout the study, though such efforts did not reveal any need to change the original interview guide along the way (Charmaz, 2006).

Throughout this article, data refers to the contents of the interview with each practitioner. Practitioners were given latitude to discuss their opinions and expertise in detail

as part of the above noted interview guide, and only these responses taken directly from the transcripts are used for the current case study analysis (Berg & Lune, 2011). Throughout the analysis, this interview data is compared to existing literature concerning pain management in order to tease out both what happens on the ground in the lives of these practitioners (Kleinman, 2007) and how practitioners themselves make sense of existing struggles, protocols, experiences, and needs within health care settings (Cragun & Sumerau, 2015). As such, the interview data in this case study arose in a step by step manner (Berg & Lune, 2011) wherein (1) consent was obtained from the practitioner, (2) an interview was conducted utilizing the guide by a member of the team, (3) the interview contents were reviewed by another member of the team, (4) feedback was delivered concerning the first interview, and (5) the next interview took place in the same sequence of events. Throughout the process, regular conversation occurred within the team concerning emerging interviews (Charmaz, 2006), and interviews were transcribed in full for use in further analysis as soon as possible following each interview session (Berg & Lune, 2011). The combination of these processes generated the data set utilized in this article.

Data Analysis

As noted above, we approached this study utilizing grounded theory methods of analysis (Charmaz, 2003). Following the collection of the data and considering initial reflections on each interview during the generation of the data set, each member of the team open coded the data set for recurring themes and ideas that emerged across the interviews. Specifically, each member sorted the data into themes by exploring each interview in combination with the others without concern for other literatures, but rather with an eye toward opening up patterns we may expect as well as those we might not. These processes of open coded revealed a series of shared themes witnessed by each member of the team, which the first author collected and disseminated to the rest of the team for consideration (Berg & Lune, 2011). With these themes in mind, half the team members began comparing and contrasting these themes to existing literature while the other half of the team coded the interviews again in their entirety focused on examples of the shared themes noted by the team. This process revealed the salience and saturation of the broader themes utilized in the literature review and analysis in this article (Charmaz, 2006).

Once a specific set of themes were sorted with multiple examples of each theme drawn from the data and questions in the existing literature related to our data, we sorted the data out and began comparing each category in a back and forth manner to refine and define the categories (Kleinman, 2007). In so doing, we were able to utilize content analysis of the existing themes, the existing literature, and the broader data set to establish key patterns recurring throughout the responses and speaking to questions in the literature (see, e.g., Corbin & Strauss, 2014; Charmaz & Belgrave, 2002; Cragun & Sumerau, 2015). Utilizing detailed notes from each team members' analysis of the transcripts as well as the results from these more focused analyses of the data set, the recurring themes, and the literature, we generated the analysis that follows concerning "What providers involved in pain management at university campus health centers experience."

Results

In reviewing our results we revisited our central research question (i.e., "What do providers involved in pain management at university campus health centers experience?"). We identified five key themes related to chronic pain occurrence and management in our interview transcripts that spoke directly to this core question. First, we observed substantial variations

in providers' perception of the prevalence of chronic pain in university students. Second, most providers showed detailed awareness of conditions that might cause chronic pain in university students. Third, providers viewed chronic pain as a contested issue with multiple competing viewpoints on clinical best practices, but also a very important one. Fourth, providers noted the importance of communication in understanding students' experiences with and needs related to chronic pain.

Fifth, most providers articulated multidimensional perspectives on possible determinants of and responses to chronic pain.

Theme 1: Inconsistent Perceptions of Chronic Pain Prevalence

Some providers perceived only limited prevalence of chronic pain in their patients, whereas others believed it to be a common problem. These perceptions varied substantially by providers' professional backgrounds and sociodemographic attributes. Providers with advanced practice nursing or osteopathic medicine degrees tended to articulate a broad view of pain experiences and needs in student clinic users. One such respondent noted that "you have to look at pain management as a spectrum." Providers with allopathic medicine degrees were somewhat more likely to perceive low levels of chronic pain in student patients. One such respondent estimated that chronic pain affects "maybe one or two students" using the campus health center. Another stated that they "have a very limited number that are on chronic pain management as opposed to acute pain management." Within both groups, providers who appeared female were more likely to perceive greater chronic pain prevalence and need for active management.

We found more consistent awareness across provider backgrounds and training types with respect to specific conditions that may require chronic pain management, as well as comorbid issues that may intersect with and shape pain experiences and treatment responses. Providers mentioned sickle cell disease, migraine headaches, arthritic conditions, and athletic injuries as conditions that could cause chronic pain in university students. Commonly mentioned comorbidities included depression, anxiety, attentional processing conditions, and substance abuse. Although these responses varied somewhat by practice specialization, they did not vary substantially by either training type or apparent sex. One provider also noted that comorbid issues may not be readily apparent during early clinical encounters. They felt it was their responsibility "to look outside of that box" of stereotypical or common complaints for issues a person might be experiencing.

Theme 2: Broader Health Care Contexts

Although participants differed in their perceptions of the incidence and prevalence of chronic pain among student patients, they showed relatively consistent knowledge of conditions that could theoretically cause chronic pain in university health care recipients. These conditions principally included athletic injuries, autoimmune diseases, endocrine disorders, neurological conditions, and sequelae of vehicular accidents. They also demonstrated knowledge of potential interactions between palliative medications and use of other controlled substances commonly used on university campuses, including pharmaceuticals and street drugs. Most providers mentioned some awareness of issues related to drug use. Several noted that students might be using substances such as marijuana or alcohol to self-medicate for underlying physical and mental health conditions. Providers also noted specific concerns about alcohol use, especially its overlap with accidental injuries and its potential interaction with prescription pain medications. Perceptions of health-harming lifestyles in students were somewhat more common among providers with allopathic degrees.

Concerns about potential iatrogenic harm from pain management, either independently or in concert with other exposures, appeared in several providers' responses to interview questions. In discussing potential issues with pain medication side effects and interactions, providers specializing in mental and behavioral health focused strongly on students' desire to succeed in classes, and their need to study constantly to keep their grades up. "Anything that involves something that might mess with their head a bit will be more difficult for them to take," one provider explained in discussing why students have sometimes not wanted to use narcotic medication. Another provider noted that students have a lot of "pressure looming over them," and expressed concerns that some students might be taking attentional processing medication without a prescription to improve their performance. Conversely, providers across specializations did not appear to view use of over-the-counter medications, street drugs, and illegally obtained prescription pills as a significant factor in producing or exacerbating chronic pain in their patients.

Theme 3: Chronic Pain Is a Contested but Important Condition

Respondents overwhelmingly viewed chronic pain as a heavily contested issue in clinical care as a whole, and even more so in services for university student populations. As a group, participating providers voiced awareness of ongoing debates surrounding chronic pain management and the specific dynamics of this issue for student patients. Providers varied, however, in their perceptions of how old their student patients actually were. One respondent noted specifically that they have seen a couple of middle-aged and elderly patients currently enrolled in classes. Another referenced knowing that not all student patients are in their early adult years, but did not mention interacting with older patients of specific age ranges. Others focused mostly on the concept of "college age" populations, which possibly led them to leave out patients in graduate school as well as undergraduates who did not proceed directly to college from high school.

Perceptions of personal responsibility also varied across providers. Some viewed failures of chronic pain management as owing mostly to lack of adherence. One respondent articulated the sense that some of their student patients had behaved in a flighty or inconsistent manner with medication, saying that "they just blew it off" instead of taking prescriptions as directed. Other providers placed less emphasis on student behavior and more on judgment, focusing on students' level of attunement to their own bodies and their capability to assess when a treatment was not working. Variation likewise appeared in the related concept of expectations and disappointment, with some providers placing more responsibility on students for cases when expectations from pain management were not met, and others looking first to disconnects between students' core needs and their current treatment plans.

Despite the contested nature of chronic pain and associated management services, most providers stressed that responding to reports of chronic pain from student patients was extremely important. For some providers, this process began with affirming student perceptions and experiences of pain. One respondent noted that if a student reports pain, "that pain is genuine to them" and that "we always validate the feelings" before progressing to other care activities. Some providers preferred to focus on reassuring students that if a first attempt at pain management did not produce good results, there would be other options to try. Managing expectations was again a key theme in these responses, along with a general focus on giving comfort. However, several providers indicated not having the opportunity to engage in these types of interactions because students had not mentioned chronic pain during clinical encounters.

Theme 4: Communication Matters for Pain Management

Several providers noted the importance of clear and thorough communication between clinicians and patients. They pointed out that effective communication both increases providers' awareness of student experiences of chronic pain, and better equips them to respond to these experiences clinically and interpersonally. Many providers specifically mentioned language differences as a potential barrier to detailed communication about chronic pain. Attitudes about negotiating these challenges varied across respondents, often according to the apparent race and language background of providers themselves.

Some providers gave detailed accounts of their own experiences in working with international students to navigate these barriers, whereas others noted never experiencing a language challenge during a clinical encounter related to pain or any other condition. One respondent who was fluent in another language themselves discussed using videoconferencing tools to make interpretation services accessible for students who wanted assistance communicating about pain management issues. This provider expressed feeling responsible to do whatever they could to facilitate culturally affirming and coherent discussion of pain management options and outcomes. Other providers mentioned language challenges that they had likewise addressed successfully, but noted that they did so by working with interpreter services available through the university rather than by bringing in an outside party via Web or telephone. Finally, one provider brought up language barriers but framed them as being beyond the scope of what could reasonably be addressed at the campus health clinic. In cases where language issues impacted this provider's ability to understand student experiences of chronic pain, they referred them to an outside provider proficient in the student's native language.

Theme 5: Chronic Pain Is a Multidimensional Issue

Although providers' specific experiences in assessing and treating chronic pain varied across clinical background, training, and specialization as well as sociodemographic characteristics, nearly all expressed at least some support for integrative perspectives on pain. Several participants called attention to specific biological, psychological, social, and environmental factors relevant for both the etiology and management of chronic pain, and stressed the importance of incorporating integrative frameworks into clinical care. Some explicitly mentioned believing that a biopsychosocial approach to pain management was best. One provider noted that looking beyond traditional clinical indicators played a key role in their ability to understand students' experiences of chronic pain, as well as their outcomes from treatment. They specifically pointed out that socialization and culture can shape how people report and discuss pain in clinical settings, and also how they evaluate the effectiveness of different management strategies.

Several providers used language related to motivation in discussing both students' behavior and their own. One person noted that although pain management can be a challenging and often contentious activity for clinicians, often their motivations for providing these services overlap strongly with students' motivations for seeking them. Their assertion that "you want them to get better; they want to get better" suggested shared interests in promoting health and quality of life, and a substantial focus on outcomes as opposed to controversy surrounding associated processes. Likewise, the idea of transitioning out of a state of illness and returning to wellness reflected the penetrance of the classic functionalist "sick role" model of health (see Parsons, 1951). While no participants mentioned this concept by name, nearly all respondents mentioned frustrations related to not being able to "fix" someone's pain at some point during their interviews. In some cases, these challenges played a strong role in dissuading student health care providers from practicing chronic pain management altogether.

Discussion

Interviewing 10 campus health care providers who differed from each other in training, specialization, and practice experience as well as a variety of sociodemographic characteristics allowed us to observe substantial variation in pain management knowledge, attitudes, and behaviors. Specifically, we captured striking differences in both perceptions of chronic pain prevalence and beliefs about optimal strategies for managing chronic pain among student patients. Our findings mirror the broader literature on pain management by reflecting differences in both perceptions of how many people might live with chronic pain, and beliefs about how to help these individuals achieve better comfort.

Findings from our study reflect a number of trends from prior research on the epidemiology of chronic pain. Prior research suggests that clinical care providers often differ in their perceptions of the prevalence of chronic pain as a general construct and within specific populations. We identified several issues commonly noted in the broader literature, including skepticism about the veracity of patient reports of chronic pain, with some variation across provider background and training. We also observed strong awareness of intersections between chronic pain and controlled substance use, and more limited awareness of intersections with culture and language. Providers were also generally aware of the contested nature of chronic pain itself, as well as management thereof.

Our results likewise mirror several key patterns from extant literature on the clinical management of chronic pain. Although allopathic providers were generally more skeptical about reports of chronic pain, they also generally felt more positive about using narcotic medications to manage it. Likewise, providers with training in nursing and osteopathy were more likely to pursue integrated programs of treatment including both pharmaceutical and complementary modalities. Treatment styles also varied by professional specialization, but did not necessarily reflect the overall management services received by particular students due to the team-based structure of care at this student health center. Providers reported a diverse range of challenges with pain management activities, but were generally in agreement that palliation should be a priority element of the care process for students experiencing chronic pain. Several specifically noted feeling that their chronic pain management activities were both frustrating and worthwhile.

Our findings diverged from the general pain management literature somewhat as well with respect to both prevalence and management of chronic pain. Although the overall literature on palliation includes a diverse array of studies on pain management for adolescent and even pediatric populations, some of the providers in our own study believed chronic pain was not a common or significant issue for university students. With respect to management of chronic pain in students who experienced it, providers were using modalities similar to those discussed in the general pain management literature. However, providers noted increased concerns about opioid dependency and side effects for a population younger on average than the general patient pool for non-pediatric private practices. Many thus articulated a strong preference for using non-narcotic medications whenever possible, with opioids as an alternate option if needed.

We note several strengths in our research. Our graduate students' history of employment with the campus health center helped tremendously in building relationships with providers and encouraging participation. This includes the follow-up work we are presently doing with clinicians to help us develop a practitioner application manuscript for publication in a health care management journal. We also captured the full range of independently practicing clinicians represented on campus, with excellent participation from people with different types of medical and advanced practice nursing degrees, as well as strong representation from those specializing in both physical and mental health. We engaged providers of different ages whose

experiences suggested different life histories and economic backgrounds, which may in turn have influenced their perceptions about pain prevalence and control.

We likewise note several limitations. Although we engaged practitioners of a variety of sexes and races, we cannot comment meaningfully on gender or ethnic diversity because comments about these characteristics did not emerge in any of our interviews. We note that the particular campus health service we studied may be unique in some ways because it accepts both private and student health insurance. Indeed, although the specific health center we studied is in many ways similar to university health facilities at other large research schools, and our participant pool diverse in training and specialization, we cannot say with confidence that our results would be consistent were we to interview providers at other universities.

Conclusions

Findings from our interviews suggest that awareness of chronic pain prevalence and perception of optimal management strategies varies substantially among providers working with university students at the campus health center we studied. With this in mind, we do not seek to paint a generalized portrait of pain awareness and treatment preferences across university health centers as a whole, or to make broad recommendations about specific clinical care reforms. Rather, we encourage other researchers and clinicians to think about how these findings may persist or differ at their own universities, and to consider the implications of those similarities or differences for improving student health care.

We suggest that universities with student health centers on campus promote dialogue between providers of different specializations, as well as between clinicians who perform pain management and researchers who study the same. Creating conversations offers opportunities to collect rich and diverse information about the different pain management activities in which providers are engaging, as well as their perceptions of these modalities and whether or not they suffice to meet the needs of the student population. Campus health centers can use findings from assessment of their own pain management practices and provider attitudes to develop targeted improvement plans for their organizations. We are now beginning this process at the health center referenced in this manuscript, and plan to share participant input as a practitioner application in the near future.

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