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Original Research Article

Pain Psychology: A Global Needs Assessment and National Call to Action

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Abstract

Objective. The Institute of Medicine and the draft National Pain Strategy recently called for better training for health care clinicians. This was the first high-level needs assessment for pain psychology services and resources in the United States.

Design. Prospective, observational, cross-sectional.

Methods. Brief surveys were administered online to six stakeholder groups (psychologists/therapists, individuals with chronic pain, pain physicians, primary care physicians/physician assistants, nurse practitioners, and the directors of graduate and postgraduate psychology training programs).

Results. 1,991 responses were received. Results revealed low confidence and low perceived competency to address physical pain among psychologists/therapists, and high levels of interest and need for pain education. We found broad support for pain psychology across stakeholder groups, and global support for a national initiative to increase pain training and competency in U.S. therapists. Among directors of graduate and postgraduate psychology training programs, we found unanimous interest for a no-cost pain psychology curriculum that could be integrated into existing programs. Primary barriers to pain psychology include lack of a system to identify qualified therapists, paucity of therapists with pain training, limited awareness of the psychological treatment modality, and poor insurance coverage.

Conclusions. This report calls for transformation within psychology predoctoral and postdoctoral education and training and psychology continuing education to include and emphasize pain and pain management. A system for certification is needed to facilitate quality control and appropriate reimbursement. There is a need for systems to facilitate identification and access to practicing psychologists and therapists skilled in the treatment of pain.

Key Words. Pain Management; Psychology; Chronic Pain; Pain Training Programs; Education

Introduction

In 2011, the Institute of Medicine (IOM) *Report: Relieving Pain in America* identified that roughly 100 million American adults live with ongoing pain [1]. Owing to its pervasiveness and negative impacts on society, pain has been called a public health crisis. Often, chronic

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pain erodes quality of life for those living with the condition, as well as their families and loved ones. The financial impacts of pain are immense, with up to $635 billion annually attributed to medical costs and lost productivity in the United States [1].

In 1973, the International Association for the Study of Pain (IASP) defined pain as an experience comprised of sensory and emotional dimensions [2], thereby establishing psychology as integral to the experience of both acute and chronic pain. Furthermore, a substantial body of literature has demonstrated that psychosocial factors are strong predictors of response to medical interventions, including surgeries and injections directed toward pain relief [3,4]. Moreover, psychosocial factors are also strong predictors of pain, function, and quality of life among people with chronic pain [5–17]. The biopsychosocial model has emerged as the most comprehensive model in the field of pain management [18]. Despite this, acute and chronic pain are often treated from a purely biomedical approach [19], with psychological factors left unidentified, unaddressed, or inadequately treated.

The biomedical approach is most often applied to people with acute and chronic pain, and a body of research has identified pain education gaps and needs for medical student training. For instance, survey research published in 2011 revealed that for many U.S. medical schools, the curricula did not include any dedicated pain courses, and many other schools committed fewer than 5 hours to pain education over 4 years of medical training [20]. Other survey research revealed that after completing residency, roughly one-third of physicians felt "somewhat unprepared" or "very unprepared" to treat pain [21]. Similarly, there are broad limitations in the general psychotherapeutic community regarding how best to manage reported pain. Psychologists and therapists who do not identify as pain specialists may experience discomfort in addressing pain concerns in their clients due to lack of pain training and may actually do more harm than good by making recommendations such as rest for chronic pain. For psychologists and mental health therapists, we found no such actual research, whether formal or informal, to quantify pain education, perceived competency, and therapist comfort in treating clients' pain.

The IOM's call for a "cultural transformation in pain prevention, care, education and research" includes the critical need for increased education and training for cross-disciplinary health providers who treat individuals with pain, including psychologists [1]. The draft National Pain Strategy [22], a population-level health strategy that was developed by the National Institutes of Health (NIH) Interagency Pain Research Coordinating Committee in response to the IOM report, further underscored the need for better pain training across disciplines of pain care, as well as improved access to high-quality pain treatment. There is a clear need to delineate specific training needs among those specializing in pain psychology, as well as to increase pain treatment proficiency in practicing psychologists and therapists more generally. Degreed and practicing psychologists and therapists who have little or no pain education may be unlikely to return to graduate or postgraduate training to receive such training, thereby highlighting a need for nonmatriculate solutions. The IOM report called for university training programs in the health care professions to include standardized information about pain. Accordingly, we recognize a need to better integrate basic pain education into psychology programs at the undergraduate, graduate, and postgraduate levels. Such education would not confer learners with pain specialization status, but would provide essential core knowledge and possibly foster interest in continuing education on the topic or even pursuit of formalized postdoctoral training.

In 2015, the Board of Directors of the American Academy of Pain Medicine (AAPM) established the AAPM Pain Psychology Task Force. As a first step toward addressing the recommendations in the IOM report and the draft National Pain Strategy, the task force sought to conduct a broad needs assessment for pain psychology services, resources, and training across key stakeholder constituencies across the United States. The national assessment involved developing and distributing tailored surveys to community psychologists and therapists, to referring providers (e.g., pain physicians, primary care physicians/physician assistants, and nurse practitioners), and to the national community of individuals with chronic pain. Finally, we included in our assessment a survey of directors of graduate and postgraduate psychology training programs in the United States to broadly quantify hours of pain content included in formal curricula and to determine potential interest in a pain psychology curriculum that could be integrated into their current psychology program.

Our national needs assessment had several goals. Currently, psychologists and therapists in the United States are treating individuals with acute and chronic pain regardless of whether they have any formal training in pain. One basic goal was to conduct the first national survey to describe therapist level of training, *perceptions* of expertise, and comfort in addressing pain within the therapeutic context. We also aimed to understand interest in continuing education in the psychological treatment of people with pain. For instance, low comfort in treating pain coupled with high interest in pain education would signal value in developing and offering specific continuing pain education for established psychologists. Such curricula could bolster basic proficiency in key domains, thereby facilitating patient acquisition of the knowledge and evidence-based skills that can positively shape pain responses and adaptation. In the realm of physician training, foundation work has promoted the biopsychosocial model of pain treatment [23–25]; however, key questions remain regarding referring providers' perceptions about pain psychology and barriers they may experience in referring their patients for psychological treatment for pain. Accordingly, we

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sought to include referring providers in our national needs assessment (primary care physicians/physician assistants and nurse practitioners). A final and critical aim of this project was to understand the perceptions, experiences, treatment needs, and barriers to engagement with pain psychology services experienced by individuals living with chronic pain.

Methods

Six multiple choice surveys were developed, one specific to each of the groups surveyed. The surveys were refined and approved by the members of the task force, and broadly assessed respondent perspectives on the value of pain psychology services, barriers to these services, and the need for pain psychology education. Final surveys, five to seven items in length, were posted online and distributed among six stakeholder groups: (1) psychologists/therapists, (2) individuals with chronic pain, (3) directors of graduate and postgraduate psychology programs, (4) AAPM member physicians, (5) nurse practitioners, and (6) primary care physicians/physician assistants. The latter three groups are collectively referred to as “referring providers,” meaning care providers who refer patients with pain for psychological treatment. Data were collected between October and December 2015. The study was compliant with the Institutional Review Board of Stanford University. All surveys were anonymous and we collected no identifying information. There were no required fields. Free text comments were allowed for several survey items when “Other” was selected as a response to the item. Some items allowed for multiple responses and these are indicated in the individual surveys. Specific survey content is found in Tables 1–6, and distribution methods are

Table 1 Individuals with Chronic Pain Survey (N = 1,086)

	%	N
1. Were you aware of pain psychology as a non-pharmacologic treatment?		1,080
Yes	58.2	629
No	37.3	403
Other (specify)	4.5	48
2. Have you ever worked with a pain psychologist (psychologist with specialized pain training)?		1,082
No	56.5	611
Yes	32.7	354
Other (specify)	6.7	72
Not sure	4.2	45
3. Have you experienced any barriers to accessing a pain psychologist? (Please check all that apply.)		1,034
Didn’t know about it	36.2	374
Not sure how to locate a qualified pain psychologist	31.0	320
Other (please specify)	27.4	283
Poor insurance coverage	22.2	230
My pain isn’t psychological	16.5	171
None in my area	13.7	142
I cannot afford the co-payments	11.5	119
There are pain psychologists in the area but wait times are too long	7.2	74
By referring me to a psychologist I thought my doctor was telling me my pain is not real	6.4	66
Pain psychology will not help me	6.2	64
The time commitment is too great	4.1	42
4. Would you be in favor of an initiative to train more therapists to provide quality pain psychology services?		1,079
Yes	66.0	712
Maybe	20.7	223
Comments	10.2	110
No	3.2	34
5. Would you value a website that would allow you to easily identify therapists close to you who have specialized pain training?		1,083
Yes	71.6	775
Maybe	15.7	170
Comments	8.4	91
No	4.3	47

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Table 2 Psychologist/Therapist Survey (N = 323)

	%	N
1. Do you consider yourself to be a specialist in treating patients with pain?		323
No	70.2	227
Yes	22.6	73
Other (specify)	7.2	23
2. Please select from the following options which best characterize the amount of education/training you received in pain psychology prior to licensure.		322
Little or no education/training	36.7	118
Clinical experience	19.9	64
Continuing education (conferences, self-study, etc.)	19.6	63
Pre-doctoral (academic and/or clinical) and post doctoral training	19.3	62
Post-doctoral level training only	4.7	15
3. Please select from the following options which best describe your perceived level of comfort and competency in treating individuals with pain.		323
I treat individuals with pain, but feel less confident in my ability to treat these patients than other areas of general psychology.	34.1	110
I consider myself to be competent, but I would benefit from more training and specialized education.	33.8	109
I do not feel competent and therefore do not treat individuals with pain.	20.7	67
I consider myself to be very competent. This is my specialized area of interest.	11.5	37
4. Please select from the following options which best characterize your practice setting.		323
Private practice	41.5	134
Veteran's Affairs (VA inpatient or outpatient clinic)	27.2	88
Other (please specify)	11.8	38
Community based outpatient clinic	10.5	34
Hospital	5.9	19
University	3.1	10
5. Approximately what percentage of your patients have pain (acute or chronic)?		320
< 25%	35.9	115
25–49%	27.8	89
50–74%	22.5	72
75–100%	13.8	44
6. Who is your primary referral source?		317
Primary Care Physician	36.6	116
Other (please specify)	36.3	115
Another mental health provider	20.2	64
Bureau of Worker's Compensation	0.3	1
7. If a packaged pain psychology curriculum were available to you at no cost, would you be interested in learning more?		323
Yes	91.0	294
No	7.1	23
Other (specify)	1.9	6

detailed below for each of the six groups. For all surveys, the listservs were selected based on relevance, prominence, and accessibility, and our intention was to distribute surveys as widely as possible within a limited time frame. The surveys were either posted on associations' main Web pages or e-mailed to the association listserv of individuals (or both). Additionally, individuals were able to redistribute the surveys to individuals or groups of their choosing. For these reasons, with the exception of the AAPM physician survey, we are unable to calculate response rates.

Individuals with Chronic Pain. The survey for individuals with chronic pain was posted and announced by the American Chronic Pain Association and the *National Pain Report*, and was distributed to a database of individuals through the Stanford System Neuroscience and Pain Lab. The survey was also promoted via social media on

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Table 3 AAPM Physician Survey (N = 203)

	%	N
1. Do you have a pain psychologist in your practice or clinic? (psychologist with expertise in treating pain)		203
No	47.8	97
Yes	39.4	80
Other (specify)	12.8	26
2. Have you referred any of your patients to a pain psychologist in the community? (psychologist with expertise in treating pain)		203
Yes	79.2	161
No	20.8	42
3. Have you experienced difficulty in referring your patients for pain psychology? Please check all that apply:		195
Not enough specialty pain psychologists	72.3	141
Difficulty with insurance coverage	69.2	135
Wait times too long	41.5	81
Few or no pain psychologist resources for non-local patients	40.5	79
No clear way to search and identify local qualified pain psychologists for my patients	41.0	80
My patients are reluctant to see a pain psychologist	37.4	73
Other (please specify)	6.2	12
I do not know how to pitch pain psychology to my patients	4.6	9
4. Please rate the importance of increasing pain psychologist resources in the treatment of patients with pain in the US.		203
Critically important	66.0	134
Important	30.1	61
Somewhat important	3.0	6
Not important	1.0	2
Of little importance	0.0	0
5. Do you think patients with pain could benefit from a national effort to better train therapists and psychologists in specialized pain management?		203
Yes	94.6	192
Not sure	4.9	10
No	0.5	1
6. Would you value a website that would allow you to easily identify therapists with specialized pain training in your patients' area?		203
Yes	84.7	172
Maybe	10.3	21
Other (please specify)	3.0	6
No	2.0	4

LinkedIn and Twitter by various individuals (e.g., blog posters) and chronic pain advocacy groups.

Psychologists and Therapists. The Psychologist/Therapist survey was distributed to various state psychological association memberships via the following listservs: the California Psychological Association, the Ohio Psychological Association, the Florida Psychological Association, the Oregon Psychological Association, the Illinois Psychological Association, and the California Marriage and Family Therapist Association. Additionally, the survey was distributed through the Veteran Affairs (VA) Psychology Chief listserv, as well as through one national therapist organization, the American Counseling Association. State and national organizations were primarily selected based on task force membership or accessibility. Most association listservs stipulate that only members may distribute surveys or announcements.

AAPM Physician Members. The AAPM Physician Member survey was distributed to the entire AAPM physician membership (N = 1,561) via two separate e-mail notifications.

Nurse Practitioner Survey. The Nurse Practitioner Survey was distributed by the American Association of Nurse Practitioners to its national membership via e-mail advertisement. The American Association of Nurse

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Table 4 Nurse Practitioner Survey (N = 96)

	%	N
1. Pain psychologists help patients acquire pain management and self-management skills. Do you think this could be valuable for your patients with pain?		95
Yes	92.6	88
Not sure	6.3	6
No	1.1	1
2. Are you aware of pain psychology as a non-pharmacologic treatment option for your patients with chronic pain?		96
Yes	64.6	62
No	35.4	34
3. Are you interested in learning more about pain psychology and its potential benefits for your patients?		96
Yes	93.8	90
No	6.2	6
4. Have there been barriers to referring your patients to a pain psychologist? (Please check all that apply.)		95
Difficulty with insurance coverage	52.6	50
Not sure how to locate a qualified pain psychologist	37.9	36
My patients are reluctant to see a pain psychologist	29.5	28
Didn't know about it	28.4	27
None in my area	26.3	25
I do not know how to pitch pain psychology to my patients	21.1	20
Other (specify)	12.6	12
There are pain psychologists but the wait times are too long	8.4	8
Didn't see the need	2.1	2
5. Would you value a website that would allow you to easily identify therapists with specialized pain training in your patients' area?		96
Yes	88.6	85
Maybe	10.4	10
No	1.0	1
6. Would you be in favor of an initiative to train more therapists to provide quality pain psychology services?		96
Yes	82.3	79
Maybe	14.6	14
No	23.1	3

Practitioners was selected because of its national prominence and because of task force accessibility.

Primary Care Physicians/Physician Assistants. The primary care survey was distributed to Cleveland Clinic Primary Care, Stanford University Primary Care, the American College of Osteopathic Family Physicians, the Missouri Primary Care Association, and the American Academy of Physician Assistants. Survey distribution was based on task force accessibility to the above groups.

Directors of Graduate Psychology Training Programs. Directors of graduate and post-graduate psychology training programs were identified using two methods: (1) a state-by-state Internet search and (2) the VA Training Director listserv and the VA psychology training for internship and fellowships Website (http://www.psychologytraining.va.gov/programs.asp).

Results. In total, 1,991 survey responses were received. Results are ordered in descending frequency of the response choices for each item contained in all six surveys.

Individuals with Chronic Pain. The survey contained the following introductory text and 6 questions (Table 1).

> Pain psychology is a treatment modality that seeks to empower people living with pain to better manage their pain by using specific skills and techniques. A pain psychologist is a therapist with very specific training and experience in the treatment of pain. In addition to learning pain management skills, treatment often involves goal setting, problem solving, and overcoming barriers to help you have a better quality of life.

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Table 5 Primary Care Physician/Physician Assistant Survey (N = 221)

	%	N
1. Are you aware of pain psychology as a non-pharmacologic treatment option for your patients with chronic pain?		220
Yes	67.7	149
No	32.3	71
2. Pain psychologists help patients acquire pain management and self-management skills. Do you think this could be valuable for your patients with pain?		220
Yes	92.7	204
No	2.3	5
Not sure	5.0	11
3. Are you interested in learning more about pain psychology and how it may benefit your patients?		220
Yes	89.1	196
No	10.9	24
4. Have there been barriers in referring your patients for pain psychology? Please check all that apply:		215
Poor insurance coverage	51.2	110
Not sure how to locate a qualified pain psychologist	49.3	106
My patients are reluctant to see a pain psychologist	31.6	68
Didn't know about it	29.3	63
I do not know how to pitch pain psychology to my patients	23.3	50
There are pain psychologists in the area but the wait times are too long	15.4	33
Other (please specify)	12.6	27
Didn't see the need	1.9	4
5. Would you be in favor of an initiative to train more therapists to deliver quality pain psychology services?		218
Yes	83.5	182
Maybe	14.2	31
No	2.3	5
6. Would you value a website that would allow you to easily identify therapists with specialized pain training in your patients' area?		219
Yes	80.8	177
Maybe	14.6	32
No	4.6	10

> We wish to understand your thoughts and opinions about pain psychology in order to develop a national strategy to better meet the needs of people living with pain. The following 6 questions will take about 5 minutes to complete.

We received 1,086 surveys for individuals with chronic pain.

Psychologist/Therapist Survey. The Psychologist/Therapist survey contained the following introductory text and seven questions (Table 2).

> In 2011, the Institute of Medicine released a report calling pain a public health crisis and calling for increased education of providers in pain across multiple disciplines, including psychology. More recently, the *American Psychologist* special issue (Vol 69(2); 2014) was dedicated to the evaluation and treatment of pain among psychologists. Taken together, it is clear that there are not enough psychologists specifically trained in pain to meet the burgeoning need.

We received 323 psychologist/therapist surveys.

Seventy-two respondents considered identified as expert in the psychological treatment of pain. For these 72 self-identified experts, the breakdown of practice setting was as follows: VA inpatient or outpatient (N = 27), private practice (N = 24), other (N = 11), hospital (N = 5), and community-based outpatient clinic (N = 3). In terms of training and experience, most reported receiving the highest level of training: pre- and postdoctoral training in pain (N = 30; 41.7%). Five reported only postdoctoral training in pain, others

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Table 6 Graduate and Post-Graduate Psychology Training Director Survey (N = 62)

	%	N
1. Please select from the following options which best characterize the type of degrees offered at your academic institution.		62
Internship and/or postdoctoral fellowship	40.3	25
Doctoral level only	38.7	24
Master's degree + doctoral degree	21.0	13
Master's degree only	0.0	0
2. Please indicate the substantive area of the training program.		61
Clinical psychology	67.2	41
Combined clinical and counseling psychology	21.3	13
Other ("not applicable")	6.6	4
Counseling psychology	4.9	3
3. Does your training program offer specialized curriculum or coursework in health psychology?		59
Yes	64.4	38
No	35.6	21
4. Within the health psychology coursework is there specialized curriculum which addresses treating patients with pain?		37
Yes	73.0	27
No	27.0	10
5. Please indicate from the selections below the amount of hours dedicated to coursework and instruction in pain.		25
5–10 hours	40.0	10
0–4 hours	32.0	8
11+ hours	28.0	7
6. A pain psychology national task force is preparing a packaged curriculum on pain psychology. Anticipated length of training would be 10–15 hours of direct instruction, plus additional time as needed for readings (likely to consist of 20–30 articles). Benefits of the program to you and your students would be: • Low faculty burden: curriculum is print, video, and online learning; • Specialty training in pain psychology from national leaders; • Improved skills to prepare your students for internship and fellowship; • Improved education and skills to prepare your trainees to treat patients (The IOM estimates that 100 million -Americans are living with pain); • Access to the pain psychology curriculum faculty. If available at no cost, would you be interested in learning more about the pain psychology curriculum and possibly introducing this into your training program?		55
Yes	100	55
No	0.0	0

reported clinical experience (N = 13), continuing education (N = 12), or other (N = 9).

The vast majority of respondents identified as being non-expert in the psychological treatment of pain (N = 224). For these respondents, the practice setting breakdown was as follows: private practice (N = 96), VA inpatient or outpatient (N = 57), community-based outpatient clinic (N = 28), other (N = 21), hospital (N = 10), and university (N = 9). In terms of training and experience, the overwhelming majority (72%) reported little or no pain training (N = 161). Twenty-two reported having clinical experience in treating pain, 19 received some continuing education in pain, 13 had pre- and postdoctoral experience, and 6 reported having only postdoctoral training in pain.

AAPM Physician Members. The AAPM Physician Member survey was distributed to 1,561 physician members; 203 responses were received, yielding a response rate of 13.0%.

The survey included the following introductory text and six questions (Table 3).

> The AAPM Task Force on Pain Psychology wishes to learn about pain psychologist resources that are

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> available to you and your patients. Pain psychology is a treatment modality that seeks to empower people living with pain to better manage their pain by using specific skills and techniques. A pain psychologist is a therapist with very specific training and experience in the treatment of pain. In addition to learning pain management skills, treatment often involves goal setting, problem solving, and overcoming barriers to help patients have a better quality of life. Please answer the following 6 questions.

Nurse Practitioner Survey. The Nurse Practitioner survey contained the following introductory text and six items (Table 4).

> Pain psychology is a treatment modality that seeks to empower people living with pain to better manage their pain by using specific skills and techniques. A pain psychologist is a therapist with very specific training and experience in the treatment of pain. In addition to learning pain management skills, treatment often involves goal setting, problem solving, and overcoming barriers to help patients have a better quality of life.

We received 96 surveys from nurse practitioners.

Primary Care Physician/Physician Assistant Survey. The Primary Care Physician/Physician Assistant survey contained the following introductory text and six items (Table 5).

> Pain psychology is a treatment modality that seeks to empower people living with pain to better manage their pain by using specific skills and techniques. A pain psychologist is a therapist with very specific training and experience in the treatment of pain. In addition to learning pain management skills, treatment often involves goal setting, problem solving, and overcoming barriers to help patients have a better quality of life.

We received 221 surveys from primary care physicians/physician assistants.

Directors of Graduate and Post Graduate Psychology Training Programs. The survey for training directors contained the following introductory text and six questions (Table 6).

> There is an urgent need for psychologists with specialized training in pain. In 2011, the Institute of Medicine released a report calling pain a public health crisis and calling for increased education of providers in pain across multiple disciplines, including psychology. More recently, the *American Psychologist* special issue (Vol 69(2); 2014) was dedicated to the evaluation and treatment of pain among psychologists. Taken together, it is clear that there are not enough psychologists specifically trained in pain to meet the burgeoning need.

> We greatly appreciate your input regarding the level of training that is currently available to the new generation of psychologists. The following 6 questions will take about 3 minutes to answer.

We received surveys from 62 directors of graduate and postgraduate psychology training programs.

Discussion

The purpose of this report was to describe results of an initial needs assessment for training, services and resources, and barriers to access for the psychological treatment of pain across six stakeholder groups in the United States (psychologists/therapists, nurse practitioners, AAPM physician members, individuals with chronic pain, directors of graduate and postgraduate psychology training programs, and primary care physicians and physician assistants).

Knowledge of Pain Psychology

Results evidenced several commonalities among the groups surveyed in terms of awareness and interest. Generally, results suggested good awareness of pain psychology. More than three-quarters of primary care physicians, physician assistants, and nurse practitioners reported being aware of pain psychology as a nonpharmacologic treatment option for chronic pain. In terms of valuation of pain psychology, the vast majority of referring providers (93%) perceived value in having their patients work with a psychologist to acquire pain management and self-management skills. Similarly, referring providers reported being highly interested in learning more pain psychology and its potential benefits to their patients (93–94%). Among pain physicians—the only group surveyed to be composed entirely of pain specialists—almost 80% had referred patients to a psychologist with expertise in treating pain, and almost 40% reported having a psychologist within their clinic or working with a psychologist as part of their pain treatment team. While the majority of individuals living with chronic pain reported awareness of pain psychology as a treatment modality, 37% were unaware, thereby underscoring the need for patient education regarding the role of psychology in the management of pain.

Barriers to Care

Several barriers were identified in regards to accessing psychologists with expertise in pain. Poor insurance coverage was cited as the primary barrier to care among primary care physicians, physician assistants, and nurse practitioners (about 50%). Almost 70% of pain physicians cited poor insurance coverage as a barrier to pain psychology, along with not enough specialty pain psychologists (72%). Interestingly, among individuals with chronic pain, poor insurance coverage was cited as a barrier by roughly 20%, and the two primary barriers identified by one-third of respondents were lack

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of knowledge about the treatment modality, and lack of a clear pathway to identify a psychologist qualified to treat pain. Possibly, poor insurance coverage would be increasingly identified as a barrier once a therapist was located and psychological services were pursued. These findings underscore the need for federal initiatives and policy change that would improve health care benefits for people with pain, and agree with the recommendations put forward in the Service Delivery and Reimbursement section of the National Pain Strategy, wherein the following problem was identified: “Payers tend to provide incentives for mono-therapy and interventional procedures instead of services that conform to the biopsychosocial model of care and incorporate pain self-management programs, patient and family education, . . . counseling, [and] cognitive-behavioral therapy”[22] (p. 31). Additionally, the field of psychology may benefit from clarification as to how pain psychology services should be billed. Health and Behavior codes were developed in 2002 in order to facilitate providing psychological services demonstrated to be effective in the treatment of medical conditions. The Health and Behavior codes are billed under the medical portion of the patient’s insurance (not the psychological portion). Use of the Health and Behavior billing codes may enable psychologists to: (1) avoid assigning a psychiatric diagnosis when one is not warranted; (2) avoid the inadequate coverage often encountered in the mental health portion of many health care policies; and (3) accurately reflect the care delivered as being distinct from nonmedical or nonpain specialized psychological care.

Similar to individuals with chronic pain, referring providers identified lack of a clear way to search and identify qualified local pain psychologists as another barrier to accessing pain psychology services for their patients (about 40%). In the same vein, roughly 85% of all referring providers stated they would value a Website that would allow them to easily identify therapists with specialized pain training in their patients’ geographical areas. Another 10–15% stated they would “maybe” value such a Web resource, suggesting strong interest in solutions that might improve appropriate referrals. Similarly, almost three-quarters of individuals with chronic pain stated they would value a Web resource that would allow them to identify local therapists with specialized pain training. Based on these data, we highlight the need for systems that identify mental health providers who treat chronic pain, and a need to stratify training and experience meaningfully so that consumers and referring providers may ascertain basic aptitude in both areas. For patients who travel from remote locations to receive pain care in more urban settings, such systems could allow providers to identify and refer patients to local pain psychology services, and thereby facilitate receipt of care. Furthermore, we note the potential value of having a formalized pain education system that would designate a professional curricula for core competencies in the evidence-based psychological treatment of pain. It may also be potentially valuable to have a system of certification available for providers through the American Psychological Association.

Finally, medical providers identified reluctance among their patients to see a psychologist as a major barrier (about 30%). It is not known whether such reluctance is the due to financial burden, lack of confidence in a psychological approach to pain management, or other reasons. Notably, among individuals with chronic pain, 17% endorsed the statement “My pain isn’t psychological,” about 6% endorsed “By referring me to a psychologist I thought my doctor was telling me my pain is not real,” and 6% endorsed “Pain psychology will not help me.” The relatively low rates of endorsement found for these items suggest greater receptivity to the psychological treatment of pain than may be generally appreciated.

Education

All stakeholder groups’ surveys included an item that asked respondents whether they would favor a national initiative to better train therapists and psychologists to treat pain. Among individuals living with pain, we found broad support for such an educational initiative (66% favored, 21% stating they would “maybe” favor). Support was stronger among referring providers and ranged from 82–95% in favor of a national educational initiative to better train therapists to treat pain, with another 10% stating “maybe.” The IOM report and the National Pain Strategy identified the need to provide clinicians with pain-specific education in order to meet the needs of the millions of Americans living with pain. The results of this report suggest that the interests of providers treating pain and individuals living with pain align with the national recommendations that have been put forward; future work will determine how the National Pain Strategy will be operationalized.

National Call to Action

A clear need exists for enhanced pain psychology training for the psychologists and therapists who treat the estimated one-third of Americans living with pain. It is important to note that while the terms “pain psychology” and “pain psychologist” are being used with increasing frequency, pain psychology is not a recognized specialty by the American Psychological Association (APA), and therefore has no formal standing within the organization. A primary purpose of formal recognition of additional specialties and proficiencies within psychology and APA is promoting public awareness of the differentiated nature of one specialty or proficiency from others and to reassure the public that psychologists asserting specialization or proficiency have met accepted standards for education, training, and competencies in the specified domain. A specialty is a

> defined area of professional psychology practice characterized by a distinctive configuration of competent services for specified problems and

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> populations. Practice in a specialty requires advanced knowledge and skills acquired through an organized sequence of education and training in addition to the broad and general education and core scientific and professional foundations acquired through an APA or CPA (Canadian Psychological Association) accredited doctoral program. Specialty training may be acquired either at the doctoral or postdoctoral level as defined by the specialty. [26]

While pain psychology certification does not currently exist, proficiency in the psychological aspects of pain management are attainable. Proficiencies may be developed via multiple pathways and are not regulated through the accreditation process. Proficiencies are

> circumscribed activities in the general practice of professional psychology or one or more of its specialties that is represented by a distinct procedure, technique, or applied skill set used in psychological assessment, treatment and/or intervention within which one develops competence. [27]

Notably, while the development of an APA specialization in pain psychology may take years, the establishment of a proficiency in pain psychology is feasible in the shorter run and could serve as a first step toward future APA specialization. If proficiency through the APA is established, it is possible that the AAPM, the American Pain Society (APS), and the IASP could link preparatory continuing education to this credential. As such, we advocate for broad collaboration between these national and international organizations to develop educational content and programs that will facilitate psychologist training and proficiency. Even if proficiency is not attained, education regarding the psychosocial aspects of pain management would allow learners to establish a broader knowledge base on the topic.

There is no single solution that will address the current shortage of psychologists and therapists who have specific pain training and comfort in treating pain. However, we wish to expand on two pathways that could help address this problem: (i) development of board certification in pain psychology through the APA and (ii) nonmatriculate solutions for psychology programs and continuing education for psychologists who wish to increase knowledge and proficiency but do not seek specialization designation.

First, while the IOM and the National Pain Strategy have called for better education on pain, the shortage of skilled psychologists would be best addressed from within the APA, for multiple reasons. Primarily, formal recognition could lead to the development of a rigorous, evidence-based curriculum and process for certification if the organization chose to create a board certification in pain psychology. Such formal recognition and board certification would allow the APA and the field of psychology to avoid the pitfalls experienced by the field of pain medicine, wherein two competing boarding agencies, the American Board of Medical Specialties and the American Board of Pain Medicine, offer differing levels of training for a physician to achieve the "pain physician" designation, thereby creating uncertainty in certification qualifications and confusion among the public and professionals.

At best, confusion in the marketplace can pose additional barriers to high-quality pain care; at worst, it can lead to inadequately trained individuals adopting a self-imposed "pain specialist" label that only perpetuates misperceptions about the role of psychology in pain care. Furthermore, it could undermine future efforts to improve reimbursement rates, a formidable barrier to high-quality pain care, for psychologists who achieve board pain certification status through the APA. In advocating for APA board certification, we also recognize that certification might impart problems or that there would be barriers to adoption for certain individuals and groups. For instance, psychologists who are well-established and highly competent in pain treatment may be unlikely to spend time and expense on attaining certification.

Currently, poor reimbursement for psychological services stands as a formidable barrier to high-quality pain care. Board certification would facilitate a system for evidence-based training, provide a meaningful system to identify psychologists with the highest level of qualifications in pain management, and offer the opportunity to seek policy changes to optimize reimbursement for board-certified pain psychologists. Doing so may also facilitate federal funding revenue streams to accredited training programs, and this may lead to critically needed expansion of these programs. Finally, psychology would be better organized and able to respond to major national issues that concern pain, such as the so-called pain crisis and prescription opioid crisis. In short, pain psychology specialty designation and governance could solve multiple central problems identified in this report.

Our national needs assessment allowed us to identify a second pathway that could help address the national shortage of psychologists and therapists with comfort and basic skills in treating acute and chronic pain. For these established psychology providers, packaged and accessible pain-specific continuing education curricula are needed. According the U.S. Department of Labor Bureau of Labor Statistics [28], there are a combined estimated half-million practicing psychologists and therapists in the United States. More than one-third of the psychologists/therapists surveyed reported having little or no education or training about pain. Low confidence or incompetence in treating pain was endorsed by a combined 55% of respondents, suggesting that pain is often unaddressed in the general psychotherapeutic context. More than 90% of psychologist and therapist respondents endorsed interest in learning more about a no-cost pain psychology curriculum, if made available to them.

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Among pain physicians, primary care physicians/physician assistants, and nurse practitioners, we found broad and substantial support for a national initiative that would supply pain education and training to psychologists (range 82–95%). Ninety-six percent of the AAPM physician respondents rated increasing pain psychologist resources as being "important" or "critically important" in the treatment of patients with pain in the United States. Recent key improvements in medical pain education are founded on the biopsychosocial treatment of pain. While the biopsychosocial approach is espoused and recognized as optimal, results from our national survey suggest that practical barriers to the psychological component of pain treatment are impeding the ability of physicians and nurse practitioners to implement treatment plans that adequately address the psychosocial aspects of pain management. Medical providers' strong endorsement of a national initiative to better equip psychologists to treat pain may partially reflect the everyday difficulty they may experience in operationalizing biopsychosocial pain treatment for their patients.

The IOM and the National Pain Strategy identified the need to better integrate pain education into the training of health care professionals. While prior research has demonstrated that pain training in medical schools is inadequate, we found no studies to address the same question in undergraduate and graduate psychology training programs. Results from the directors of graduate and postgraduate psychology training revealed that almost 80% of responses came from directors of doctoral, internship, or postdoctoral fellowship programs. Two-thirds were clinical or combined clinical and counseling psychology programs, and offered specific curricula in health psychology. Interestingly, more than a quarter of programs that have health psychology coursework do not address pain treatment in the curricula. A third of programs dedicate 0–4 hours of coursework to instruction in pain, 40% dedicate 5–10 hours, and 28% dedicate 11 or more hours to pain instruction. Directors of psychology training programs were unanimous in their reported interest in learning more about a packaged, no-cost pain psychology program that could possibly be introduced into their training programs (100%).

We did not survey undergraduate psychology programs; rates for dedicated pain curricula are likely to be lower for these programs. We underscore the need to integrate pain education at all levels of psychology training, regardless of the clinical focus (e.g., child or pediatric, geriatric, substance abuse, neuropsychology, or health psychology) or degree.

These data support the development of continuing education curricula to bolster pain education for therapists and psychologists in the United States. Substantial effort has yielded accessible pain education for physicians and clinicians, such as the NIH Pain Consortium Centers of Excellence in Pain Education (http://painconsortium.nih.gov/NIH_Pain_Programs/CoEPES.html); however, targeted curricula are needed for psychologists and therapists. IASP developed an Interprofessional Pain Curriculum Outline [29] meant to guide pain education across professions, and in October 2015, a specific IASP Curriculum Outline on Pain for Psychology was made available [30]. While the IASP curriculum outline is ". . . not meant to replace the uniprofessional curricula that outline additional depth in content required by each individual profession and discipline" [31], the entry-level curriculum outline on pain for psychology advises the inclusion of content that would

> provide psychology students with an overview of the multidimensional nature of pain from clinical and basic science perspectives; introduce pain assessment and measurement strategies for psychologists to use in clinical practice and in research; review how many psychological factors, such as attention and expectation, can modulate pain in different experimental and clinical context; [and would overview the] primary psychological therapies and treatments from an evidence-based perspective. [30]

Ideally, the IASP Curriculum Outline on Pain for Psychology will be developed, potentially into multiple curricula of varying depths of knowledge and specificity of content, and made accessible for continuing education or integration into formal academic training programs.

Limitations

Several aspects of our study design merit consideration and limit interpretation of findings. First, we recognize the inherent sample selection bias that exists for online survey research. It is possible that individuals who chose to respond were predisposed toward supporting access to pain psychology resources and, as such, we cannot assume that the results are representative of the larger population. We were compelled to describe the modality and its primary goals to provide respondents with the appropriate context for understanding "pain psychology." Accordingly, response bias may be increased due to the language highlighting the benefits of psychology treatment and training. Selection bias may be further amplified in the sample of patients with chronic pain, who were either treated at a large academic interdisciplinary pain management program, interested in pain research, or involved in national pain groups. Second, and relatedly, while we were only able to calculate a response rate for the AAPM physician members, we acknowledge our overall response rate is low. The surveys were posted on national chronic pain Websites and through national and state listservs, thereby potentially reaching tens of thousands of individuals. Third, we were unable to calculate response rates for most of the surveys due to the distribution methods (posting on Websites or on group listservs, and because surveys could be redistributed). Fourth, we collected a multitude of qualitative data in the

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comment sections of various items; space limitations precluded reporting of these data here.

A strength of our investigation is that it yielded the first report to broadly describe perceptions about psychological treatment in the context of pain, as well as the need for training and access to pain psychology services and resources. Our national survey was notably wide in scope, including six stakeholder groups across psychology providers, individuals with pain, training directors, and referring providers in the United States. Our assessments included professional medical organizations, national chronic pain advocacy associations, and pain specialty providers, as well as generalists, multiple state-level professional psychologist and therapist organizations, and psychology training directors.

Conclusions

The IOM report and the National Pain Strategy called for a cultural transformation in how pain is treated in the United States. Findings from these reports suggest a need for achievable changes within psychology training and psychology continuing education to include and emphasize pain. Findings also reveal broad support across all stakeholder groups surveyed and receptivity to enhanced pain education and curricula for psychology trainees and practicing clinicians. Ideally, such curricula would be offered to therapists and training programs at no cost; therefore, federal or private development funding is needed. Medical providers may be limited in their ability to facilitate biopsychosocial pain treatment due to reported barriers in accessing pain psychology. We call for specialty designation for pain psychology and a formalized system of board certification within the APA. Systems are needed to facilitate provider and client identification of psychologists and therapists who have pain education, and a system to stratify level of qualification is needed. Finally, national policy changes are needed to improve access to the psychological component of pain treatment.

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