



# Cultural differences in pain experience among four ethnic groups: A qualitative pilot study

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## ABSTRACT

**Background:** A growing body of literature suggests that racial/ethnic groups experience pain differently. The current pilot study explored cultural differences in the meaning of pain, display rules of pain, and pain coping strategies among four ethnic groups (i.e., Caucasians, African Americans, Asians, and Hispanics). **Methods:** Semi-structured interviews were conducted with a multi-ethnic sample of 20 college students (6 African-American, 7 white, 4 Asian, and 3 Hispanic) (85% female, 15% male). **Results:** Cultural differences emerged in how various groups give meaning to pain, express pain, cope with pain, and utilize social support. **Conclusions:** Findings emphasize the need for culturally competent health care providers and have implications for how cultural differences can be used to help various groups to better manage their pain.

**KEY WORDS:** Ethnic differences, pain, qualitative analysis

## INTRODUCTION

The gate control theory of pain [1] suggests culture, as well as the person's previous experiences with pain, can influence the pain experience. Similarly, the biocultural model of pain [2] proposes that different cultural groups have different attitudes toward and meanings for pain, which may influence their neurophysiological as well as psychological and behavioral responses to pain. Thus, cultural factors can impact how pain is appraised and responded to emotionally and behaviorally (i.e. display rules and coping).

### Meaning of Pain

The pain can have different meanings for ethnic groups [3]. Aldrich and Eccleston found that pain and its symptoms can have both positive and negative meanings, depending on how the pain is interpreted [4]. For example, pain experience can represent spiritual growth, implying a positive interpretation of the pain [3], or it can be a sign of the body's physical malfunction, demonstrating a negative interpretation [4].

Culture can impact how pain is perceived to be interfering with one's daily functioning [5]. African American patients reported their pain having a greater impact on their daily activities compared to Caucasian patients [6]. In contrast, Asian participants with chronic back pain reported less dysfunction than Caucasian participants [7]. This may reflect stoicism and a preference for minimizing pain in Asian cultures. Alternatively, there is greater support from family and friends for individuals within Asian collectivistic cultures.

### Display Rules of Pain

The biocultural model of pain suggests that behaviors that convey pain may be developed through social learning or observing individuals with whom we closely identify [2]. For instance, in Japan, the ability to control one's expressive behavior related to pain is held in high regard [8]. This may be due to the "culturally imposed stoicism," which implies that these individuals feel pain just as intensely as others, but do not show or tell others [9]. In contrast, in Hispanic culture, expressing physical pain may be a culturally acceptable way to communicate emotional distress [10]. Studies demonstrated African Americans were more likely to report higher levels of pain unpleasantness than did non-Hispanic whites [5,11,12]. The extent to which African Americans have learned from past experience that they may not receive needed care may contribute to stronger negative responses evoked by pain, relative to Caucasians [5].

### Pain Coping Strategies

Studies have found ethnic group differences in coping with pain [5,13,14]. African Americans with rheumatoid arthritis reported greater use of praying/hoping, construed as a passive coping strategy [15,16]. Among Hispanics, the use of spirituality and non-traditional (e.g. traditional healers) means of managing illness are elevated [17,18]. These findings could be attributed to spirituality and religion being core features of Hispanic and African American cultures [3,19]. In contrast, non-Hispanic whites who endorse the mind-body dualism world view may believe their pain can only be effectively treated by physicians in a medical setting [20].

Cultural differences have also been found in how people seek and use social support [21,22] to cope with pain. Individuals from collectivistic cultures are more cautious about seeking social support because they are concerned that they would lose face, burden others, and disrupt group harmony [22]. Research showed that Asian/Latino Americans were less likely to draw on social support for coping with stress than were European Americans [23].

## Current Study

This pilot study examined how four ethnic groups (African Americans, Caucasians, Asian-Americans, and Hispanics) differed in their meanings of pain, display rules of pain, and pain coping strategies using qualitative descriptive design, which could provide insight into the need for culturally competent health care providers and management of pain symptoms [14]. In addition, findings from the study may have potentially important implications for clinical practice, pain management, addiction medicine, and primary care medicine. The current study differs from previous studies [4,20,24] which tended to only include a limited number of ethnic groups. By including four ethnic groups, this study offers a more comprehensive picture of how factors related to pain are influenced by culture.

## METHODS

### Participants

Participants consisted of 20 undergraduate students (6 African-American, 7 white, 4 Asian, and 3 Hispanic) at the Southern university. Participants had to be 18 years of age or older and

could not be diagnosed with a chronic pain disorder. When asked the question of “do you feel/have pain, generally?” 35% ( $n = 7$ ) of the participants reported that they suffered from physical pain including headaches, stomach pain, and neck/back pain. The sample was majority female (85% female, 15% male) and ranged in age from 19 to 42 years ( $M = 23.6$ ) [Table 1]. Participants were recruited via convenience sampling and compensated for extra credit for their class. The study was approved by the Institutional Review Board.

### Procedure

Informed consent was obtained from the participant at the beginning of the study. Participants were interviewed using the semi-structured interview guide consisting of open-ended questions which focused on the past and present pain experiences of the interviewee (Appendix B). One of the authors conducted all interviews with participants. Interviews lasted approximately 50 min, on average, and were audio-recorded with participants' permission. Interviews were transcribed verbatim from audio to text format. Data were stored on a password-protected computer in the researchers' locked offices.

### Analysis

Data were analyzed based on a qualitative thematic content analysis. After the interviews had been transcribed from audio to text, two coders independently analyzed the interviews by carefully reviewing the transcripts and looking for themes present in all interviewees' responses. The two coders then convened to compare and contrast the results of their analysis. They searched for consistency across their themes and debated

**Table 1: Demographics information**

Demographic Variable	n (%)			
	Asian (n=4)	Hispanic (n=3)	African American (n=6)	Caucasian (n=7)
Age				
Mean	20.25	23	24.33	25.14
Gender				
Male	0 (0)	1 (33.3)	2 (33.3)	0 (0)
Female	4 (100)	2 (66.7)	4 (66.6)	7 (100)
Country of birth				
United States	2 (50)	2 (66.7)	6 (100)	6 (85.7)
Years in U.S.				
0-5 years	0 (0)	0 (0)	0 (0)	1 (14.3)
5-10 years	2 (50)	1 (33.3)	0 (0)	0 (0)
Since birth	2 (50)	2 (66.7)	6 (100)	6 (85.7)
Generational status				
1 <sup>st</sup> generation	2 (50)	1 (33.3)	0 (0)	1 (14.3)
2 <sup>nd</sup> generation	2 (50)	1 (33.3)	1 (16.7)	0 (0)
3 <sup>rd</sup> generation	0 (0)	0 (0)	0 (0)	1 (14.3)
4 <sup>th</sup> generation+	0 (0)	1 (33.3)	5 (84.3)	5 (71.4)
Annual household income				
<\$15,000	1 (25)	0 (0)	1 (16.7)	0 (0)
\$15,000-\$45,000	2 (50)	0 (0)	3 (50)	3 (42.8)
\$45,000-\$75,000	1 (25)	1 (33.3)	1 (16.7)	1 (14.3)
>\$75,000	0 (0)	2 (66.7)	1 (16.7)	3 (42.8)
Primary language				
English	1 (25)	1 (33.3)	6 (100)	6 (85.7)
Missing data	2 (50)	2 (66.7)	0 (0)	1 (14.3)

(Appendix A for individual participant demographic information)

and discussed inconsistencies until consensus was met. After the identification of the main themes, the additional analysis identified differences between groups and similarities within groups in relation to pain beliefs and behaviors.

## RESULTS

### Culture, Pain, and Meaning

#### Pain as a positive versus negative experience

Caucasian (7 of 7) and African American (5 of 6) participants were more likely to define pain as negative - either because it hurts, it is an inconvenience or because some part of the body is malfunctioning [Table 2]. Participant 16, a Caucasian female stated, “it’s just annoying to have it and it kind of distracts you from the current task you’re doing.” One African American female (Participant 8) stated that pain is “always negative” because it hurts.”

In contrast, Asian (3 of 4) and Hispanic (3 of 3) participants were more likely to define pain as a positive experience, mostly because of spiritual growth and the awareness that comes with pain. For instance, one Asian female (Participant 4) reported that “feeling pain can be positive because it’s your body telling you that something is wrong and if something is really bad, then you can deal with that.” A young Hispanic participant (Participant 1) when talking about her pain experiences stated “I use (pain) and I grow from that ... everyone has got to suffer.”

**Pain as a hindrance to daily functioning:** Racial/ethnic groups differed on their view of pain interference with daily functioning [Table 2]. African American (4 of 6) and Hispanic (2 of 3) participants reported pain intruding more on their daily activities than Caucasian (2 of 7) and Asian (0 of 4) participants. Participant 15, a young African American female stated “when my ankles hurt it affects everything. It affects me because it affects what I wear ... it affects a lot of things.” Caucasian and Asian participants, however, did not report their

daily activities being very much affected by pain. Participant 2, a Caucasian female, declared “if there is something I have to do...then I’m just going to suck it up and do it. So, it really doesn’t affect my daily life.” An Asian female (Participant 18) stated “I’m kind of an optimistic person...I try not to think about the bad part.”

#### Pain as a physical or emotional phenomenon

Hispanic and Asian participants were more likely to mention emotional distress as being a form of pain without needing to be probed about it. African American and Caucasian participants were more likely to talk about pain in a physical sense throughout the interview, and most did not mention emotional distress as being a pain until the interviewer specially asked about emotional pain or mood changes.

### Culture, Pain, and Display Rules

#### Pain expression

Racial/ethnic groups differed in the degree to which they expressed pain symptoms and how they felt about doing so [Table 2]. African American (4 of 6) and Hispanic (3 of 3) participants were more likely than Asians (1 of 4) and Caucasians (1 of 7) to say they openly expressed pain symptoms and experienced no regret afterward. One young African American female (Participant 14) stated “I usually tell people about it.” In addition, a young Hispanic woman (Participant 5) responded “Yeah, I tell others about pain all the time. I’m a big yapper...”

In contrast, one Asian woman (Participant 6) stated “I usually don’t react (to pain) in front of people.” Many Caucasian participants who said they expressed their pain symptoms thought that the expression brought them feelings of regret and embarrassment after expressing their pain. One Caucasian female participant (Participant 9) reported “if it happens and I’m really expressive right away, (I feel) kind of embarrassed.”

**Table 2: Illustrative quote for each theme**

Theme	Quotes	Ethnicity of the participant
Culture, pain, and meaning		
Pain as a positive versus negative experience	“I would say more toward positive, cause then you can learn from it and you can – you know what exactly what happened and you won’t do that thing again”	Asian
Pain as a hindrance to daily functioning	“They can be excruciating. Where I can’t do anything”	African American
Pain as a physical or emotional phenomenon	“[B] ecause of all the responsibilities, I carry stress in my back so I’ll feel it in my shoulders every now and then”	Caucasian
Culture, pain, and display rules		
Pain expression	“I’ll more than likely tell other people that I’m in pain so they will kind of leave me alone”	African American
Family and pain expression	“[T] hey don’t really show their emotions or their physical pain so I don’t feel comfortable showing it to them”	Caucasian
Culture, pain, and coping strategies		
Passive and active coping strategies	“[I] f it’s like a really excruciating headache then I’ll just try to take some Tylenol or something ... I try to work out because that usually alleviates all of it”	Asian
Medication	“[M] y mother-in-law is a homeopathic doctor so I actually have tons of rescue remedies and homeopathic stuff for like aches and pains so I constantly use that too”	Hispanic
Social support	“I come from a large family ... so if anyone gets hurt some is always there ... even if it’s just a cut”	Hispanic

## Family and pain expression

Participants spoke of the similarities they share with their family members in relation to pain behaviors and pain beliefs [Table 2]. Asian participants' (1 of 4) and Caucasian participants' (1 of 7) families were perceived to be less likely to express their pain symptoms than African American and Hispanic families. One young Caucasian female participant (Participant 2) reported "in my family, my dad has chronic pain and he never complains so I guess that's where I got that. Because he just dealt with it internally..." Another Caucasian female participant (Participant 16) stated "no, we pretty much share the same beliefs and we don't really ... I don't really complain unless it's really hurting me." Participant 6, a young Asian female participant, stated "I didn't express it to them. I kept it in...we all pretty much express it the same way."

Hispanic (3 of 3) and African American (5 of 6) participants' families were, in contrast, much more likely to be expressive about or accepting of expressing pain symptoms. One young Hispanic male participant (Participant 20) reported "I remember one time I was in 6<sup>th</sup> grade and I broke my ankle and everyone in my family pitched in to help me out and everything." Furthermore, a young African American female stated "As a child, my parents were highly receptive to me expressing myself when I was in pain or in general."

## Culture, Pain, and Coping Strategies

### Passive and active coping strategies

African American (4 of 6) and Hispanic (2 of 3) participants were more likely than Asian (0 of 4) and Caucasian (2 of 7) participants to use passive coping strategies such as prayer and avoidance to relieve their pain. Participant 1, a young Hispanic female stated "a lot of times I'll pray to God to help me get through things that are very hard and I think my faith in God helps a lot...I just try to have faith." An African American female participant (Participant 13) stated "when I pray it makes it better."

Asian participants were the only group to mention using positive thinking as a coping mechanism. One Asian female participant (Participant 6) stated "taking the situation at hand and trying to understand it and trying to have an open mind is always going to relieve your pain." Caucasian participants focused on changing behaviors to relieve pain instead of positive thinking that was found among Asian participants. One Caucasian participant reported "If you treat your body right and get enough sleep, get adequate rest, and are healthy then you can fix your pain."

### Medication

Ethnic differences were also found in how likely participants were to take medication or the circumstances under which they seek medical treatment. For instance, Caucasian participants (5 of 7) were more likely to use medication than other groups, and all stated that pain symptoms must

be severely painful to go to a doctor for treatment. One Caucasian participant (Participant 16) stated "if there was something wrong where I couldn't lift my arm and I couldn't even move it I was in so much pain, I would probably go (to the doctor) to get a muscle relaxer." African American (5 of 6) participants were also hesitant to go to a doctor for treatment. However, it was the consistency or continuity of the pain that dictated whether or not the individual would go to the doctor, not the severity of the pain. One African American (Participant 14) stated "I just went because it was persisting. It was constant and it was going on for days." Asian participants (3 of 4) reported being hesitant to see a doctor for treatment or use any kind of medications. An Asian female, when talking about medication stated "I usually don't because I'm very conscious about medication."

### Social support

Ethnic differences also emerged in using social support as a coping strategy for pain [Table 2]. Hispanic participants (3 of 3) and Asian participants (4 of 4) were more likely than other groups to mention seeking social support from loved ones when coping with pain. Participant 6, a young Asian female, stated that she only told her family when she was feeling pain and only "when it piles up." This suggests that even though she has social support available, she is hesitant to use it.

## DISCUSSION

Previous research studies did not include multiple ethnic groups in their examination of culture and pain experiences. This pilot study contributed to the pain and culture literature by comparing four ethnic groups and providing new insight into a cultural variation of pain experience in three dimensions: The meaning of pain, display rules of pain, and coping with pain.

Our preliminary findings suggest that the meaning of pain may vary across cultures. Caucasian and African American participants were more likely than Asian and Hispanic participants to define pain as being a negative experience. These participants reported explained that pain was negative simply because it hurt. Asian and Hispanic participants gave pain experience a positive meaning because they believe that with pain comes spiritual and self-growth. This ability to positively reframe a negative experience such as pain may reflect a sense of resiliency in these two ethnic minority groups. Moreover, Hispanic and African American participants were more likely to report that pain intruded on their daily activities.

Cultural differences in display rules of pain were found. African Americans and Hispanics were more likely to express pain openly and felt comfortable with doing so. Perhaps, individuals from Hispanic culture feel comfortable with pain expression because there is less stigma associated with expressing physical pain than with emotional distress within this culture [10].

Alternatively, Hispanic individuals can express pain openly because they expect to receive support when they do so [25]. On the other hand, Asian and Caucasian participants were less likely to express their pain symptoms to others, and if they did, they experienced regret and embarrassment as a consequence. Moreover, Asian participants were found to only express pain symptoms to people they were close to and only under extreme circumstances.

This pilot study also found cultural differences in coping strategies for pain. African American and Hispanic participants were more likely to use passive coping strategies such as prayer than Asian or Caucasian participants. Studies have found spirituality as having positive effects on recovery and treatment outcomes [26,27]. Our results showed that Caucasians were more likely than other ethnic groups to participate in self-treating behaviors such as taking over-the-counter medications. Furthermore, Asian and Caucasian participants used more active coping strategies; Differences also emerged in how participants treated their pain. Hispanic participants were more likely to use home remedies or homeopathic medicine than other groups. This could be due to Hispanic's holistic view of the mind and body or their fear of dependence on drugs for pain [25,28].

Social support as a coping strategy was also found to differ across ethnic groups. Asian participants in our study were hesitant to utilize their social support network while Hispanic participants expressed their pain symptoms openly and without hesitation. This is consistent with past research that suggests that, due to the interdependent view of self, individuals from the collectivistic cultural orientation tend to be concerned about the negative relational implications of asking for help and may thus be more reticent about seeking support from close others [22].

This pilot study, while informative, is not without limitations. The sample size is small, and there are very few participants within each ethnic group. Thus, the above explanations need to be treated with caution until the findings are replicated in a larger sample. Similarly, due to the small sample size, this pilot study did not allow us to evaluate whether data saturation occurred after all the individual interviews were conducted. Also, the study primarily consisted of female college students; therefore, generalizability is limited. Moreover, there was heterogeneity within the cultural groups we studied. For instance, within the Asian ethnic group, there was one participant from Pakistan, one from UAE, and two from the US. We combined these individuals due to the small number of participants representing each country. Thus, generalization within each nationality and ethnicity is limited.

Despite the aforementioned limitations, the current pilot study shed light on the qualitative commonalities and differences in the meaning, display rules, and the coping strategies of pain among participants from four ethnic groups. Our findings add to a growing body of literature on racial/ethnic group differences in the pain experience. Further

investigation of racial/Ethnic differences in how people perceive and experience pain is warranted, as is the exploration of other cultural factors that could have an influence on pain beliefs and behaviors.

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## APPENDIX A

**Appendix A: Demographic information per participant (n=20)**

ID	Age	Sex	Race	Country of birth	Years lived in U.S.	Generational status	Annual household income
1	19	Female	Hispanic	U.S.	19	2 <sup>nd</sup>	\$45,000-\$75,000
2	22	Female	White	Finland	2	1 <sup>st</sup>	\$15,000-\$45,000
3	42	Female	White	U.S.	42	4 <sup>th</sup> +	> \$75,000
4	21	Female	Asian	U.S.	21	2 <sup>nd</sup>	\$15,000-\$45,000
5	30	Female	Hispanic	Trinidad	6	1 <sup>st</sup>	> \$75,000
6	20	Female	Asian	Al-Ain, UAE	10	1 <sup>st</sup>	\$15,000-\$45,000
7	23	Female	White	U.S.	23	3 <sup>rd</sup>	\$15,000-\$45,000
8	22	Female	African American	U.S.	22	4 <sup>th</sup> +	> \$75,000
9	26	Female	White	U.S.	26	4 <sup>th</sup> +	\$45,000-\$75,000
10	20	Female	Asian	Pakistan	10	1 <sup>st</sup>	\$45,000-\$75,000
11	21	Female	White	U.S.	21	4 <sup>th</sup> +	> \$75,000
12	34	Male	African American	U.S.	34	4 <sup>th</sup> +	\$45,000-\$75,000
13	22	Female	African American	U.S.	22	2 <sup>nd</sup>	\$15,000-\$45,000
14	22	Female	African American	U.S.	22	4 <sup>th</sup> +	\$15,000-\$45,000
15	21	Female	African American	U.S.	21	4 <sup>th</sup> +	\$15,000-\$45,000
16	21	Female	White	U.S.	21	4 <sup>th</sup> +	> \$75,000
17	25	Male	African American	U.S.	25	4 <sup>th</sup> +	< \$15,000
18	20	Female	Asian	U.S.	20	2 <sup>nd</sup>	< \$15,000
19	21	Female	White	U.S.	21	4 <sup>th</sup> +	\$15,000-\$45,000
20	20	Male	Hispanic	U.S.	20	4 <sup>th</sup> +	> \$75,000

## APPENDIX B

### APPENDIX B: INTERVIEW QUESTIONS.

The interview starts with asking the participant about their daily activities.

Preliminary questions about personal experiences of pain

Do you feel/have pain?

If they say no, then probe with specifics, like, do you have a headache? Fatigue? Myelgia? What about any mood changes or emotional pain?

What kind of pain do you have?

How would you describe your pain?

Questions pertaining to meaning of pain

How are your daily activities (e.g. job, family, housework, etc.) affected by pain?

Who or what do you think is responsible for your pain?

What do you think makes you more susceptible to pain (e.g. personality characteristics, behaviors, etc.)?

What do you think causes your pain? In other words, why do you have pain?

How do you view your pain experience?

How do you feel about pain being a part of life?

Questions pertaining to display rules of pain

What are/were some of your past experiences with pain (e.g. within your family)?

What do you think of your beliefs or behaviors and that of your family members?

How do you express pain?

How do you feel about expressing pain or how do you feel while you are expressing pain?

Questions pertaining to coping strategies for pain

What do you do when you experience pain?

How do you treat your pain?

Have you used any home remedies such as herbal supplements or homeopathic medicine?

What do you think will relieve your pain?