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Perception of Pain Expression Among Surgical Patients and Families from Three Ethnic Groups of a Nation: A Multicenter Qualitative Study

Getu Ataro Hanago[1], Matthias Siebeck[2], Samuel Jilo Dira[3], Tefera Tadesse[4], Dominik Irnich[5]

[1]Department of Anesthesia, Hawassa University, Hawassa, Ethiopia; [2]Institute of Medical Education, LMU University Hospital, LMU Munich, Munich, Germany; [3]Department of Anthropology, Hawassa University, Hawassa, Ethiopia; [4]Institute of Educational Research, Addis Ababa University, Addis Ababa, Ethiopia; [5]Multidiciplinary Pain Center, Department of Anesthesiology, LMU University Hospital LMU Munich, Munich, Germany

Correspondence: Getu Ataro Hanago, Email getsha@yahoo.com

Background: Despite its universal nature; perception, coping, responses, treatment options, and overall experiences of pain are influenced by biopsychosocial factors to various extents. Pain perception, expression, and control are progressively learned behaviors among members of a society and are culture-specific. Effects of ethnicity-related culture (ethnoculture) on pain experience in a broader context have increasingly been reported. However, evidence from ethnoculturally diverse groups of a nation, particularly based on surgical patients, is limited. Therefore, as a qualitative research effort of a broader project aimed at assessing ethnocultural determinants of surgical pain management, this study explored the perception of ethnoculturally diverse patients and families about expressing surgical disease-related pain.

Methods: This study follows subjectivist-interpretivist philosophical assumptions as an underpinning research paradigm. We purposively selected 11 patients for in-depth interviews and 12 patients' family members for focus group discussions in three hospitals of ethnic-based regions of Ethiopia. In the phenomenological frame, thematic analysis was employed.

Finding: Ethnocultural background influences how individuals express and respond to pain according to emergent themes of finding—*Pain and overlooked cultural influence, Pain expressiveness in cultural context, Stereotypes of pain expressiveness,* and *Bravehood through stoic response*. Pain feelings are commonly hidden where the domestic culture values stoic response to pain compared to ethnoculture where pain expressiveness is encouraged.

Conclusion: Individuals can express and respond to pain differently due to ethnocultural diversity within a nation. Researchers and clinicians should consider cultural context while applying the prevailing *one-size-fits-all* pain assessment tools among surgical patients of a nation with ethnocultural diversity.

Keywords: surgical pain, pain and culture, pain expression, pain behavior, pain response, stoic response

Introduction

Pain is a ubiquitous and universal phenomenon that everyone— from society with diverse cultures and human social development stages— can experience in a lifetime. Despite its universal nature, pain-related perception, coping, responses, treatment options, and overall experiences are affected by biological, psychological, and social factors.[1,2] Fairly long after the inception of the Gate Control Theory of pain,[3] a six-dimensional view of pain— namely, physiologic, sensory, affective, cognitive, behavioral, and socio-cultural dimensions— emerged about two decades ago.[4] Of all, the socio-cultural dimension of pain has got increased attention for the past few years. As clearly described in the definition by the International Association for Study of Pain (IASP),[5] pain is not just an anatomical, physiological, or pathological entity, rather it is a phenomenon we find at the intersection of body, mind, and culture.[6,7] The way one's pain perception, expression, and control are progressively learned behaviors of members of a society and, hence, it is culture-specific.[8] Sensation, perception, and coping strategies for pain are different across cultural groups.[9] People in ethnic groups of distinct cultures express and cope with pain differently. Whereas those patients who consider pain as

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a private and personal experience prefer to cope with pain by turning inward, others express verbally, crying and screaming.[9] Expressed or "turned inward", untreated persistent pain results in overwhelming morbidity and compromised quality of life.[10]

Differences in pain perception and coping strategy may not be merely confined to cultural differences among nations of two or more continents, regions, or countries as shown in several studies; there are also disparities across culture and ethnic groups of a single nation.[11,12] Ethnicity and culture are too complex social constructs to define in simple sentences and vary with the contexts in which the terms are used. For instance, ethnicity has slightly different concepts and dissimilar classifications in the US and Ethiopia.[13,14] As a result of its skewed availability, a great deal of pain literature has evaluated the effects of ethnicity mainly in the Western context. However, in a diverse nation of a single non-western country, there is intranational ethnicity-based cultural (ethnocultural hereafter) variation. Evidence determining the effect of ethnocultural background on pain, and surgical pain more specifically, is limited. However, the effects of ethnocultural attributes on the evaluation and treatment of pain among surgical patients of different ethnic groups are inevitable. Therefore, aimed at answering the research question, "How does the ethnocultural background of surgical patients affect the way they express pain?", this study explored the perception of expressing pain related to surgical diseases and procedures among patients and their families in three different ethnic groups of Ethiopia. Moreover, the current study also challenges the *one-size-fits-all* approach of surgical pain assessment using tools developed in different contexts and cultures. The ultimate goal of the current study is to improve surgical pain management by understanding potential barriers and generating testable hypotheses for stronger evidence.

Methods

A growing body of scientific literature reveals one's underpinning research paradigm—ie, the worldview and philosophical assumptions— influences the study design, data collection, analysis, and overall approach of the study.[15,16] In the current study, where we explore social phenomena related to pain and culture, we believe that our research question would be better answered with subjectivist ontological and interpretivist epistemological assumptions that helped us to choose a qualitative approach. Another justification for choosing the qualitative approach was the exploration of a relatively new topic in the context of study participants and setting. The study was conducted at Hawassa University Teaching Hospital (HUTH), Shashemene Referral Hospital (SRH), and Butajira General Hospital (BGH) from October 2022 to April 2023. The hospitals are located in three different ethnic-based regions of Ethiopia– ie, Sidama Region, Oromia Region, and Southern Ethiopia Region where predominantly Sidaamu Afoo, Afaan Oromo, and Guragigna languages are spoken, respectively. This study is part of a broader research project aimed at assessing the ethnocultural determinants of surgical pain management, where perceptions of pain and treatment options are explored, pain sensitivity is compared and the quality of postoperative pain treatment is determined among patients, patients' families and care providers of different ethnic groups.

To observe possible similarities within and variations of phenomena across the ethnic groups, study participants belonging to the dominant ethnic group of each region– ie, ethnic Sidama, ethnic Oromo, or ethnic Gurage– were purposively recruited from each hospital. Whereas six female and five male patients participated in 11 in-depth interviews, a group of six family members taking care of the patients participated in each of two gender-balanced focus group discussions (FGD). The two FGDs were conducted in HUTH and BGH whereas the in-depth interviews were carried out in all three hospitals. To accommodate the voices of interviewees during data collection, researcher-translator, and real-time interpreter approaches were used in HUTH and the two other hospitals, respectively. One researcher who was familiar with the particular culture and language of Sidama society took over interviews in Sidaamu Afoo whereas the two research assistants who did real-time interpretation of respective local language interviews were members of the Oromo and Gurage ethnic groups.

The socio-demographic information of each study participant was captured using closed-ended and semi-closed questions. The interview and focus group discussions were guided by open-ended questions about individual and culture-related pain definition, perception, and overall experiences (see Annex 1). The Interview and discussion guides had undergone face validation with back-and-forth discussions with experts in addition to pilot testing before the actual data

collection. All interviews (of 20–30 minutes duration) and FGDs (of 40–50 minutes duration) were immediately analyzed and the saturation point (the point at which no new ideas emerged) was used to determine the sample size.

Ethical clearance was obtained from Hawassa University College of Medicine and Health Science with the letter reference numbers IRB 039/14 and IRB 333/15 for initial vote and its periodic extension, respectively. Another ethical vote was also granted by the University of Munich (LMU) ethics committee with the registered project number 23–0479. All participants consented for participation in the study and anonymous report of quotes and personal information such as age, sex and diagnosis during publication of the research work. Study participants were contacted before surgery and discussed the aim and outcome of the study. The interviews and FGDs were conducted after surgery at an appropriate postoperative time when patients were fully awake from anesthesia and patients' family members were cooperative. Two patients were excluded from the study because of severe intolerable pain in one patient and a serious surgical complication that needed urgent relaparotomy in another patient. The interviews and group discussions were audio-recorded and finally transcribed in line with the field notes.

Within the phenomenological frame, we employed inductive coding and thematic analysis to evaluate the common recurring pattern of meanings across the data set. Initially, we went through the entire transcript to get an overview of the data. Then, we broke down parts of the data into smaller pieces and labeled them with codes. Thematic analysis is a flexible analysis method used to understand patterns of meanings from the dataset generated from different qualitative research designs.[17] Given the defined scope of the current study and to avoid potential stereotyping of the respective groups, we did not disclose the ethnicity of respondents deliberately during the analysis. The first author (anesthetist and medical educator) and third author(anthropologist) were members of one of the ethnic groups, however, the prior assumptions were put aside as much as possible during the analysis. The first, second and last authors are healthcare professionals practicing in different contexts and deal with surgical pain. Previously the first author used to prefer patients who tolerate surgical pain and patients who opt for less pain medicine, however, now he believes patients who do not express pain may develop complications. Moreover, the authors were aware that our cultural and professional experiences and background could affect some of the findings, and sometimes we follow the authors' consensus to deal with concepts deemed to be affected by individuals' subjectivity. We believe that the effects related to the subjectivity of our research approach and result interpretation were minimized to the least possible extent.

Findings

All patients had undergone abdominal surgeries. The characteristics of the study participants are summarized in Table 1.

Four main themes– namely, pain and overlooked cultural influences, pain expressiveness in the cultural context, stereotypes of pain expressiveness, and bravehood in stoic response– were identified from the analysis (Table 2). In the "pain and overlooked cultural influence" study participants were not aware of the implicit influence of culture while they discussed how they and other people in their culture perceive, express, and respond to pain.

In the second theme, participants predominantly from the Gurage ethnic group described that they prefer to openly speak out their pain feelings whereas perspectives from the other two ethnic groups were inclined to oppose openly expressing pain experience. In the third theme, study subjects discussed the range of opposing and neutral thoughts about openly expressing pain in their respective *ethnoculture*. In the final theme, patients and their families described that a person who stays calm during painful stimuli is considered brave and strong. As reflected across all themes, some of the study participants were also observed using the term disease to describe pain.

Theme 1: Pain and Overlooked Cultural Influence

Asked about how the ethnicity-related culture has influenced their perception, expression, and the way they respond to pain, and how other people who share the same ethnocultural background with them did understand and respond to pain; most participants were not aware of the effect of their culture. However, they revealed elsewhere in the discussions, with and without probing questions, that there was an influence

> no, [there is] no influence. I was told to take linen juice for pain, but there is nothing I was told not to take for pain…there is no influence on pain expression [as well]. (IdI01)

Table 1 Summary of Study Participants' Characteristics

Participation	Code	Age	Sex	Education	Ethnicity	Residence	Diagnosis[a]	Postop. Time
In-depth interview	IdI01	20	F	Primary school	Sidama	Urban	Cholecystitis	23 hrs.
»	IdI02	75	M	No formal education	Oromo	Rural	Intestinal obstruction	26 hrs.
»	IdI03	35	F	Primary school	Oromo	Rural	Myoma	6 hrs.
»	IdI04	60	F	No formal education	Sidama	Rural	Cholecystitis	26 hrs.
»	IdI05	39	F	Primary school	Gurage	Rural	Epigastric hernia	25 hrs.
»	IdI06	60	F	No formal education	Gurage	Urban	Renal stone	26 hrs.
»	IdI07	44	F	No formal education	Gurage	Rural	Myoma	5 hrs.
»	IdIo8	42	M	Primary school	Sidama	Rural	Gastric Carcinoma	32 hrs.
»	IdI09	28	M	College diploma	Oromo	Rural	Renal stone	28 hrs.
»	IdI10	45	M	No formal education	Oromo	Rural	Intestinal obstruction	27 hrs.
»	IdI11	18	M	Primary school	Gurage	Urban	Intestinal obstruction	51 hrs.
FGD	fgd1/p1	53	M	No formal education	Gurage	Rural	Epigastric hernia	N.A.
»	fgd1/p2	23	F	Highschool	Gurage	Rural	Epigastric hernia	N.A.
»	fgd1/p3	Mid fifty	F	No formal school	Gurage	Rural	Myoma	N.A.
»	fgd1/p4	17	M	Highschool	Gurage	Rural	Unknown	N.A.
»	fgd1/p5	35	F	Primary school	Gurage	Urban	Renal stone	N.A.
»	fgd1/p6	30	M	Unknown	Gurage	Urban	Renal stone	N.A.
»	fgd2/p1	26	M	First degree	Sidama	Urban	Renal stone	N.A.
»	fgd2/p2	24	M	Highschool	Sidama	Rural	Gastric Cancer	N.A.
»	fgd2/p3	21	M	Primary school	Sidama	Rural	Gastric Cancer	N.A.
»	fgd2/p4	Mid thirty	F	Unknown	Sidama	Rural	Cholecystitis	N.A.
»	fgd2/p5	Late twenty	F	Unknown	Sidama	Rural	Tumor	N.A.
»	fgd2/p6	Early twenty	F	Unknown	Sidama	Rural	Unknown	N.A.

Note: [a]Diagnosis also refers to disease of patients whom the FDG participants taking care of.

In this case, taking linen is something learned from the culture and can be considered as an influence. Also, it has to be noted that some behaviors of individuals in a society may not be explicitly "told" to be learned, but observed and adapted. Our respondent started to use linen because she had seen others using it.

Cultural influence on pain was not the only thing that the respondents were unaware of, but also other peoples' understanding of pain and how these people respond to pain in their respective communities. This may depict the implicit nature of learned behaviors of a culture. These notions were consistently reflected among participants of the three ethnic groups.

> I am not sure about what others say, I just know mine with regard to understanding pain. (IdI04)

> I don't know how people in my culture understand pain,…Culture hasn't influenced my perception. Previously we used to use herbal medicines, [but] now it's changed. IdI05

> No, the way I respond has never been influenced…No. I am not influenced by other people. (IdI11)

Table 2 Themes, Subthemes and Examples of Quotes

Theme	Subthemes	Example of transcription extracts
Pain and overlooked cultural influence	- Unawareness - Changing practice	"I don't know how people understand pain.No, (there is) no influence. I was told to take Linen juice for pain, but there is nothing I was told not to take for pain…there is no influence on pain expression [as well]". (IdI01) "I am not sure about what others say, I just know mine with regard to understanding pain". (IdI04) "I don't know how people in my culture understand pain,…Culture hasn't influenced my perception. Previously we used to use herbal medicines, but now it's changed". (IdI05) "No, the way I respond has never been influenced…No. I am not influenced by other people". (IdI11)
Pain expressiveness in cultural context	- Feared judgment - Abruptly unfolded feeling - Drawbacks	"It is good to express pain. If someone hides their own pain, he/she may get hurt. But, if they express/tell neighbors, there may be support in the neighborhood. So, it's good to express pain" (IdI05) "A person who openly expresses pain is better than the one who hides it. It is bad to hide one's pain. If it is not expressed openly, it may even cause death. It is bad to hide but, openly express. In our culture it is not encouraged to hide pain. It is better to openly express…it is encouraged to openly express pain and tell others. Such person is comforted by society rather than discouraged" (Fgd01/p1) "As it was mentioned earlier, as a result of our culture, people used to hide their illness [and pain], now it is improving [people are speaking out their pain]. Now, it [tendency of hiding pain] is improving. But, it is not 100% that it has improved, roughly about only 70–80% of people in Sidama express pain, the rest tends to hide" (Fgd01/P2) "No problem, I can express [pain]. It depends, the person may cry if the pain is severe. Some neighbors can exaggerate if you express your pain feelings in front of them. Some express pain and some do not. (Uhuuu, ahaaa…), [suddenly reflected a painful state felt inside although he said he would express whenever it is felt]. In my culture, some people may comfort a person in pain understanding that that person really has pain, but some may say the person is lying…. (Uhuuu, ahaaa), [indication of pain although he said he was fine]. When someone expresses pain, some people perceive it as if the person needed some help, some may also understand as if the person was pretending as if not in pain. Generally, expressing pain is encouraged…Yes, I am comfortable expressing pain … (Uhuuu, ahaaa…), [again, the sign of pain feeling]. For example, if a person expresses pain people may discriminate saying he/she is not able to tolerate pain. That's why I tolerate pain even if it's hurting. Make us not to express pain" (IdI02) "…some people understand your pain and feel sorry for you but some people would gossip about you…. Some people also try to annoy the sick person saying it's too little suffering [pain]…. unless a person speaks it out pain gets worse …people say he is exaggerating because he/she has pain." (IdI07) "I do not want to hide any pain… 'hiding disease [pain] is like killing oneself' "says the Arsi tribe of Oromo). Our culture encourages openly expressing [pain], not hiding… Instead of hiding disease [pain] and dying, it's better to express and get cured." (IDI03) "A person who hides his own pain is a dead person, forget about bravery. A person should not hide his/her pain…If someone hides felt pain, he/she may get hurt. But, if they express/tell neighbors, there may be support [in the neighborhood]." (IdI05) "A person who hides his/her pain is a fool person because the pain worsens if it's hidden than expressed" IdI07 "Hiding [not expressing] pain causes you to lose your strength." (IdI08)

(*Continued*)

Table 2 (Continued).

Theme	Subthemes	Example of transcription extracts
Stereotypes of pain expressiveness	- Weakness - Pretender - Positive views	"People consider someone who express pain or cries due to pain as pretender or liar, etc., but, people in our neighborhood don't relate it to weakness or cowardice" (IdI02) "Sometimes if someone expresses pain crying/screaming it's said to be a weak person…… people consider someone who expresses pain as weak" (IdI03) "in the rural areas, they say the person is exaggerating simple things." (Fgd2/p2) "…In our neighborhood openly expressing pain is not related to cowardice. We don't say it." (IdI11) "A person who hides pain is not considered as brave…Brave is the one who expresses pain" IdI05 "It depends on the specific neighborhood; some people may exaggerate" (Fgd01/p6)
Bravehood through stoic response	- Role model - Tolerant	"People respect a person who hides his pain. They say 'he is strong and doesn't tell his pain'. People wish to behave like that tolerant person" (IdI01) "Not expressing /hiding one's pain is labeled as fearless, brave or sometimes 'chay new', [meaning the person is tolerant]" (IdI02) "Here, there is a pain in society, but people tolerate it. The pain is assumed to be due to a cold. They assume it will stop." (IdI10) "A person who doesn't express pain is called tolerant…the person is brave; he doesn't express his pain although he/she feels pain" (fgd2/10) "Some people consider someone who tolerates pain and does not express one's pain as brave. But such people are usually seen once broken by illness [without help]." (IdI08) "There are people who hide the pain. People say such people are brave, tolerant. But, that person may die without getting treatment, that's why we take them to treatment centers." (IdI10)

Although it was not realized by the respondents that culture has an influence on pain response, there is an influence of ethnicity and religious culture. For instance, IdI11 revealed that he goes to church and prays when he feels pain. That is influence from people or culture which most of the participants were not cognizant of.

Theme 2: Pain Expressiveness in Cultural Context

There is a variation of responses regarding pain expressiveness among the study participants across the three different ethnocultural backgrounds. Although there are some similarities in behaviors of expressing pain, this study revealed the dominance of one particular behavior over another across the three ethnic groups. Patients and their family members from one ethno-culture speak out their pain openly whereas patients from the other two cultural backgrounds try to hide their painful feelings, or prefer to hide until the pain becomes intolerable.

> a person who openly expresses pain is better than the one who hides it. It is bad to hide one's pain. If it is not expressed openly, it may even cause death. It is bad to hide but, openly express. In our culture, it is not encouraged to hide pain. It is better to openly express…it is encouraged to openly express pain and tell others. Such person is comforted by society rather than discouraged (Fgd01/p1)

> As it was mentioned earlier, as a result of our culture, people used to hide their illness [GA71] [and pain], now it is improving [people are speaking out their pain]. Now, it [the culture of hiding pain] is improving. But, it is not 100% that it has improved, roughly about only 70-80% of people in Sidama express pain, the rest tends to hide (Fgd01/P2)

Some of the patients, mostly from the same cultural background, did not prefer to and refrained from openly expressing pain. The main reason was that their culture highly values hiding and tolerating pain, and the culture usually considers pain as a private thing and people belonging to that particular *ethnoculture* never speak out their pain feeling unless it is beyond their tolerance. Study participants also reflected that they were afraid of being judged that they exaggerated minor

or no pain if they openly expressed their pain. This behavior was reflected during both in-depth interviews and focus group discussions. Additionally, study subjects from an "anti-expressive" culture mostly argue that expressing pain was bad. Surprisingly, patients from non-expressive cultural backgrounds were observed trying to hide their acute surgical pain during the interview. However, their pain status was actually identified from their facial expression, body movements, and abnormal sounds they showed having declared that they had no pain. In spite of pretension, pain is such a powerful feeling that it could not be silenced from being reflected somehow impulsively.

> No problem, I can express [pain]. It depends, the person may cry if the pain is severe. Some neighbors can exaggerate if you express your pain feelings in front of them. Some express pain and some do not. Uhuuu, ahaaa… [suddenly reflected a painful state felt inside although he said he would express whenever it is felt]. In my culture some people may comfort a person in pain understanding that the person really has pain, but some may say the same person is lying…. (Uhuuu, ahaaa…), [indication of pain although he said he was fine]. When someone expresses pain, some people perceive as if the person needed some help, some may also understand as if the person was pretending as if not in pain. Generally, expressing pain is encouraged…Yes, I am comfortable expressing pain… (Uhuuu, ahaaa…), [again, sign of pain feeling]. For example, if a person expresses pain people may discriminate saying he/she is not able to tolerate pain. That's why I tolerate pain even if it's hurting. Make us not to express pain (IdI02)

Preferring to speak out about their own pain, which in fact is a result of their cultural influence, patients and their family members stressed the serious drawbacks of not expressing pain. Accordingly, as it is summarized from our data extracts,

> I don't want to hide any pain… hiding disease [pain] is like killing oneself says the Arsi tribe of Oromo. Our culture encourages openly expressing [pain], not hiding…Instead of hiding disease (pain) and dying, it's better to express and get cured. (IDI03)

> A person who hides his own pain is a 'dead' person, forget about bravery. A person should not hide his/her pain…If someone hides felt pain, he/she may get hurt. But, if they express/tell neighbors, there may be support (in the neighborhood). (IdI05)

Theme 3: Stereotypes of Pain Expressiveness

Among the participants of the three ethnic groups, there is a clear variation of beliefs and attitudes towards a person who openly expresses pain. A person who openly expresses or speaks out pain is considered an emotional weakness and cowardice. This is mainly quite common among patients and their families from two of the ethnic groups.

> People consider someone who expresses pain or cries due to pain as a pretender or liar, etc.…but, people in our neighborhood don't relate it to weakness or cowardice (IdI02)

> Sometimes if someone expresses pain crying/screaming it's said to be a weak person…… people consider someone who expresses pain as weak (IdI03)

> in the rural areas, they say the person is exaggerating simple things. (Fgd2/p2)

However, there were patients predominantly from the ethnocultural group with the preference of openly expressing pain in support of speaking out one's pain, let alone dishonoring pain expressiveness in their culture.

> in our neighborhood openly expressing pain is not related to cowardice. We do not say it. (IdI11)

> a person who hides pain is not considered as brave,…Brave is the one who expresses pain. (IdI05)

Meanwhile, regardless of ethnocultural background, there were findings suggesting expressing pain is encouraged among the community members of the three ethnic groups.

> Nowadays, people started to say a person who expresses pain as knowledgeable, knows his/her pain. Also, people who hide pain are not appreciated. A person who hides [not expressing] pain is considered as mean, they assume that they are hiding their pain so as not to spend money on treatment. (IdI10)

The discrepancies of belief about openly expressing pain exist within neighborhoods of an ethnic group.

> It depends on the specific neighborhood; some people may exaggerate (fgd01/p6)

This concept has many implications for pain assessment and treatment in perioperative settings.

Theme 4: Perceived Bravehood for Stoic Response

A person who does not explicitly express pain is considered tolerant, fearless, and most importantly brave in some of the ethnocultures of Ethiopia, as was reflected by some of the respondents. In this particular culture not expressing pain and, subsequently, stoicism is highly valued. Sometimes such people are respected and seen as role models.

> People respect a person who hides his pain. They say 'he is strong and doesn't tell his pain'. People wish to behave like that tolerant person (IdI01)

> Not expressing /hiding one's pain is labeled as fearless, brave or sometimes 'chay new', meaning he is tolerant (IdI02)

> Here, there is a pain in society, but people tolerate it. The pain is assumed to be due to a cold. They assume it will stop. (IdI10)

> a person who doesn't express pain is called tolerant…the person is brave; he doesn't express his pain although he/she feels pain (Fgd2/10)

Although patients and family members included in the study claim that not expressing pain is accepted in the community, they also discussed drawbacks and harms related to such behavior.

> Some people consider someone who tolerates pain and does not express one's pain as brave. But, such people are usually seen once broken by illness [without help]. (IdI08)

> There are people who hide the pain. People say such people are brave, tolerant. But, that person may die without getting treatment, that's why we take them to treatment centers. (IdI10)

Discussion

This study explored the effect of ethnocultural background on the perception of expression and other related pain behaviors among patients and patients' families who were selected from three different ethnic groups. Taking the distribution of ethnicity and ethnoculture into account, patients from three hospitals were purposively selected from three ethnic-based regional states. Patients who underwent elective abdominal surgeries were included. The rationale behind choosing patients of intra-abdominal surgical pathologies such as gall bladder stone, renal stone, intestinal obstruction, gastric cancer, peptic ulcer disease, hernia, and myoma was that they are associated with persistent mild to debilitating pain before hospital admission.[18–24] Furthermore, patients with such diseases are expected to share their real experience and relate it to their culture. As sex and gender determine pain experiences[25] and accommodate possible variations of views, participants from both categories of sex were purposely recruited.

The *ethnoculture* of study participants influenced their perception, response, and overall pain experiences. However, some of them were not aware of how their culture had influenced their pain-related behavior when asked directly, and it was merely learned with the help of some more probing questions and responses for other questions elsewhere in the discussion. Hence, the cultural influence was overlooked by the majority of the study participants. There is a growing body of evidence in favor of this finding. In a large-scale study conducted by Ostrom et al which evaluated how some biosocial factors could affect pain behavior, it was revealed that ethnicity or race significantly affected pain behavior such as pain sensitivity and related pain behaviors while pain threshold remained unaffected.[26] In another systematic review by Krupic et al, pain perception and coping strategies were affected by ethnicity.[27] Accordingly, Asians and African Americans indicate greater pain compared to White Americans and Latin Americans. Prayers and hope were used as coping strategies among African Americans more often than in other ethnic groups. However, ethnicity may not be confined to just race especially in a diverse nation like Ethiopia where there exist more than 80 ethnic groups of inarguably the same black race.

As was revealed in the first and second themes, there was varying perception, attitude, behavior, and practice among many study participants as far as openly expressing pain is concerned. Some patients, from the *ethnoculture* that promotes openly expressing pain preferred to speak out whereas those who were from ethnic groups against openly expressing pain feeling preferred to turn in or hide their pain feeling. Some of the study participants underlined that it is not appropriate to

express pain from their ethnocultural point of view. In this regard, Hobara compared Japanese and Europeans' perspectives and showed that the Japanese rated expressing pain as less appropriate than their European counterparts.[28] In our study patients also mentioned that they could be judged as if they were exaggerating minor pain. One of the patients, who was from a culture where openly expressing pain was not welcomed, repeatedly demonstrated an exploded feeling of agony and wound pain reflected with abnormal sounds and facial expressions while he was discussing he had no pain at all. However, there were also some patients and FGD participants from pro-expressive ethnocultural backgrounds who preferred open expression of pain, and patients in that subset requested additional pain medicine during the interviews.

Additionally, most of the participants mentioned perceived stereotyping and associated thoughts— ranging from negative, neutral, and positive— that was reflected with contradicting and sometimes neutral opinions about pain expression in the community. The stereotypes tagged to a person who extrovertedly expresses pain range from weak person to strong and knowledgeable person. These findings are in line with previous empirical evidence and expert opinion by Hollingshead et al and Karos, respectively.[29,30] Whereas Hollingshead et al reported that white ethnic groups were labeled as more pain-sensitive and more willing to report than their black counterparts, Karos described that patients who tend to express pain openly could be "invalidated, mocked or even exploited". An experimental study conducted by Peeters and Vlaeyen revealed that high-pain catastrophizing subjects were influenced by perceived social threats and not low-pain catastrophizers.[31] Pain catastrophizing on the other hand had a positive association with ethnicity in such a way that African Americans report higher catastrophizing than White Americans.[32] Hence, ethnicity could affect the perception of being exposed to negative stereotypes and social threats among patients and make them not express and report their pain feeling.

Perceived bravehood for stoic response among ethnic groups is another important theme with high clinical importance as far as pain assessment is concerned in an ethnoculturally diverse setting. Study subjects described that hiding pain is considered a strength and the person who tolerates pain is assumed to be brave whereas a person who expresses pain is mostly considered an emotionally weak person. Therefore, some cultures preferred stoicism in pain response. There is a growing body of evidence that supports cultural preference for stoic response and non-expressivity for pain. In a narrative review, Narayan concluded that people from pro-stoic cultures prefer to refrain from expressing pain by moaning and screaming, fearing not to be perceived as weak, and as a result, patients from such ethnocultural backgrounds could even deny pain if asked.[33] Not to be judged as a coward, but instead, to be perceived as brave, patients may not express their pain, and pain in such patients could be missed in conventional pain assessment tools.

The finding of this study is important for daily clinical practice; unexpressed pain experience that is not captured during routine pain assessment may be undertreated, if not unmanaged at all. Surgical patients may be part of a culture where expressing pain is encouraged or discouraged. These cultural perceptions and their effects may be either overlooked or not understood by patients. Our findings may accurately apply only to the study participants; however, the study proposes the aforementioned cultural attributes as possible determinants to be evaluated in a separate study, not only for possible generalization but also to assess whether or not these factors determine surgical pain management.

Strengths and Limitations of the Study

As a strength, this study gathered data on the perception of expressing pain among three different ethnicities in a non-Western context. We also employed different data collection methods as a means of triangulation to increase the credibility and validity of the findings. All patients had homogeneity within an ethnocultural group as they all had pain as one of the chief complaints and underwent abdominal surgeries, that often cause postoperative pain. Recruiting research assistants who were competent in their respective languages and cultures to produce real-time interpretation of local language interviews, can also be considered a strength of the study. As a limitation, we used a relatively small sample size given the structure of the interview (semi-structured) and the nature of the topic, which may affect the richness of the generated data. Manual coding/analysis which may introduce some human error and hinder the appealing data visualization, and lack of rigorous formal translation of recordings were also considered as limitations of the study.

Conclusion

Surgical patients and their family members have different views toward expressing pain based on the influence of their ethnocultural background. Some have preferred to express pain, and some preferred to hide it based on what's valued–

between pain stoicism and expressivity– in their respective culture. It is also worth considering that there may be variations of pain behaviors within the same ethnocultural groups although there may exist specific pain behaviors of the dominating culture. Our findings indicate that pain assessment tools– that are overwhelmingly applied as *one-size-fits-all* – may not reliably assess the actual perioperative pain intensity and severity among culturally diverse patients unless complemented with the context-based subjective judgment of culturally competent care providers. A large-scale multi-center quantitative or mixed-design study may be needed to statistically identify the ethnocultural determinants of pain and estimate the magnitude of its effect in the future.

Data Sharing Statement

Data supporting our finding is available from the corresponding author, GAH, upon reasonable request.

Ethical Approval

The principles of the Helsinki Declaration for medical research involving human subjects and the guidelines of the local institutional review board were followed throughout the study. Ethical approval was obtained from two institutions, Hawassa University Institutional Review Board with reference numbers HUCMHS-IRB 039/14 and HUCMHS-IRB 333/15 (twice due to mandatory periodic renewal of initial vote) and LMU ethical committee vote with the registered project number of 23-0479. The anonymity and privacy of the study participants were maintained throughout the study as it had been promised before data collection.

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Author Contributions

All authors significantly contributed to the work reported; they contributed to various extents during conception, study design, data collection, analysis, interpretation, manuscript drafting, and critically reviewing the article. All authors also agreed on the selected journal, approved all versions of article before submission/decision, and agreed to take responsibilities and be accountable for the contents of the article.

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