

## ORIGINAL ARTICLE OPEN ACCESS

# Improving Pain Outcomes for Children and Adolescents at School via a Socio-Ecological Public Health Lens: A Strengths-Focused Interview Study With Teachers

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## ABSTRACT

Chronic pain in children and adolescents is widespread and negatively affects school attendance and developmental trajectories. Teachers are central to how pain (both acute and chronic) is experienced by their students because of their position as educators and social role models. Therefore, we aimed to explore how teachers make meaning from and respond to their students' pain, and identify individual and system-level strengths to guide recommendations for clinical and public health interventions for pain management in schools. We conducted a qualitative study using semi-structured individual interviews with schoolteachers using an Appreciative Inquiry approach. We analyzed our results using reflexive thematic analysis, with inductive and deductive approaches. Our analysis was based on a socio-ecological framework. We interviewed 11 teachers working in primary ( $n=8$ ), secondary schools ( $n=2$ ) and leadership ( $n=1$ ). We generated three themes to capture participant experiences: (1) The teacher–student relationship: teachers are dedicated to building a connection and have key teaching and learning skills that can support pain; (2) the school community: inclusion policy and culture can positively influence pain outcomes; and (3) societal influences: misconceptions about pain can influence how teachers perceive the reality of pain. This research enhances our comprehension of the ways in which student pain (whether acute or chronic) is experienced and responded to within the school environment. The insights gained can enrich clinical perspectives and foster collaborative efforts with educators to mitigate the adverse impacts of chronic pain on young individuals, such as increased school absenteeism and pain-related stigma.

## 1 | Introduction

Pain is individual and personal. It is defined by the International Association for the Study of Pain (IASP) as “an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage” [1]. Chronic pain is defined as pain that extends beyond the boundaries of normal

tissue healing and is typically defined as pain that persists or recurs for more than 3 months [2]. Chronic pain in children and adolescents is a public health issue that spans both the health and education sectors [3]. The condition affects approximately one in five children, negatively impacting their school attendance, family functioning, social development, and physical and emotional trajectories [4–6]. Pain-related stigma spans education and health

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This research elucidates pain experiences in children and adolescents within schools from teachers' perspectives. The findings will enrich clinical understanding, and foster collaboration with educators and educational systems to mitigate chronic pain's adverse impacts including school absenteeism and pain-related stigma.

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sectors, occurring when an individual is devalued because of their pain condition [7]. Pain-related stigma exacerbates poor health, academic, and functional outcomes for children with chronic pain and influences how they seek healthcare, adhere to treatment recommendations, and engage in social relationships [8–11]. The diagnostic uncertainty and invisibility of chronic pain can contribute to difficulties with accessing support from healthcare professionals, teachers and peers [12], which may extend to accessing support for learning and social relationships at school [13].

The many factors affecting children and adolescents with chronic pain in a school environment can be conceptualized through the Socio-Ecological Model. This public health model contextualizes health and wellbeing through the complex interplay between (1) individual, (2) relationship, (3) community, and (4) societal factors [14, 15]. At the individual level, adolescents experiencing chronic pain express a desire to be treated normally and describe concealing their pain to avoid judgment and the feeling of being a social burden [16]. At the relationship and school community levels, affected adolescents describe stigmatizing communication from teachers and peers at school [8, 12], and school staff report difficulty responding to pain, particularly “medically unexplained” symptoms [13, 17]. These experiences can exacerbate social isolation and cognitive burden, hence impacting school attendance for those with chronic pain [11]. Misconceptions about pain exist in society, thereby influencing all other layers in the model [18]. Despite these documented negative experiences, the best management of chronic pain in schools remains poorly understood [19].

Teachers and school staff are central to how pain is experienced in schools because of their position as educators and caregivers, and hence social role models [20, 21]. Social pain learning occurs when young people observe the language and behavior of others in relation to pain experiences [22]. Additionally, the way teachers respond to pain will influence both the pain experience at the time for the student, as well as future pain experiences [22–25]. Although previous survey research has explored how teachers conceptualize pain [26], the ways in which they interpret the meaning of pain, and how these interpretations shape their responses and understanding of social pain learning remain unexplored. A qualitative approach would enable an in-depth and contextualized understanding of how teachers construct meaning in their real-world setting (i.e., the classroom and playground). Therefore, this study aims to explore how teachers make meaning from and respond to their students’ pain through qualitative interviews, and identify individual and system-level strengths to guide recommendations for clinical and public health interventions for pain management in schools.

Research objectives:

1. To describe how teachers understand their students’ pain and its significance within the educational and social context.
2. To examine how teachers respond to student pain; and how they perceive and justify these responses within the social environment of the school.
3. To identify individual-level (e.g., beliefs, skills) and system-level (e.g., policies, training) strengths that can facilitate or optimize pain management.

Research questions:

1. How do teachers make meaning from their students’ pain at school?
2. In what ways does meaning-making influence teachers’ responses to student pain?
3. What individual and organizational resources are assets in pain management?

## 2 | Methods

### 2.1 | Research Design

We conducted a qualitative study with teachers using semi-structured individual interviews.

We followed the recommendations from Braun and Clarke [27] for evaluating thematic analysis to guide our practice and reporting.

Ethical approval for this study was provided by the University of Technology Sydney Human Research Ethics Committee (HREC ETH22-7536). We prospectively registered the protocol on the Open Science Framework (<https://doi.org/10.17605/OSF.IO/CR3VN>) on 28 October 2022.

### 2.2 | Researcher Positionality

We used Braun and Clarke’s reflexive thematic analysis approach, which recognizes the researcher expertise as essential to the analysis process [28]. Specifically, we acknowledge pain as a biopsychosocial experience, unique to individuals and dependent on context [1, 29]. Thus, we approached our research with a social constructionist view, acknowledging the social and cultural influences in the classroom and school environments and how these experiences shape teacher responses, which in turn shape pain experiences for students [20, 30]. We adopted a critical orientation to reflect on how teachers make meaning from their students’ pain as we intended for this research to guide knowledge mobilization within a strengths-based framework for organizational change [31].

The principal investigator (R.F.) is a doctoral student in physiotherapy and a senior physiotherapist who works clinically with young people and their families who experience chronic pain. Additionally, our research team brought experiences from physiotherapy (J.W.P., A.V.), pediatric psychology (E.O.W.) and social sciences (E.T.) and has published qualitative and quantitative research in the field of chronic pain, pain science education, and pain-related stigma.

### 2.3 | Participants and Recruitment

Eligible participants were part of a previous, larger survey study exploring how teachers conceptualized their students’ pain [26]. This international survey study was recruited primarily through social media and targeted English-speaking teachers who taught or had experience teaching students aged 10–12 years from the

UK, USA, Canada, Australia, and New Zealand. Upon completion of the survey, participants expressed their interest in being contacted about future studies by providing their email address. Of the 235 teachers that participated in the survey, 79 participants provided their email address. We contacted all 79 teachers and invited them to participate in further interviews. Additionally, we recruited via personal and professional networks. We continued to recruit until we determined that we had collected enough data from participants to answer the research question (information power) [32]. We assessed information power based on the five items of impact, including study aims, sample specificity, whether an applied theory is being used, the strength of the dialogue, and the analysis strategy. We assessed at the beginning of recruitment, accounting for factors that may determine fewer participants (e.g., our high sample specificity and predicted strong dialogue from teachers) and those that may require more participants (e.g., moderately broad study aims and cross-case analysis strategy). We continued to appraise information power as we progressed through interviews.

Teachers consented to be interviewed for the study using Research Electronic Data Capture (REDCap) [33], a secure web-based data collection platform.

## 2.4 | Data Collection

R.F. conducted semi-structured interviews in Brisbane, Australia, via Zoom using video recording, and the interviews were saved on a secure password-protected drive. R.F. transcribed the interviews verbatim and collated them with field notes in addition to any notes taken from watching the recorded

videos a second time (e.g., facial expressions, body language, or emotion that may not have been expressed in the words used during interviews).

R.F. removed identifying information from the transcripts and allocated participant numbers (T1–T11) for analysis. Videos were destroyed upon transcription. Participants were given a \$50 AUD gift card to thank them for their participation.

### 2.4.1 | Demographic Information

Participants verbally reported their gender, current area of teaching (e.g., primary or secondary schooling; subject), and previous experience (in years, location and area of learning). To begin rapport-building, and to explore the underlying motivations of teachers, they were also asked to describe what they like best about being a teacher.

### 2.4.2 | Semi-Structured Interview Schedule

Semi-structured interviews focused on exploring participants' experiences with interacting with students who reported and/or experienced pain at school. Guided by the IASP definition of pain, R.F. explored acute, chronic and recurrent pain complaints in students to capture a broad range of experiences. We used an Appreciative Inquiry approach to develop interview questions with focus on three of the stages during interviews: "Discovery," "Dream," and "Design" [31]. The "Discovery" phase focussed on "the best of what is" (Table 1, Q's 1–3). Open-ended interview questions first explored an interaction/

**TABLE 1** | Predetermined semi-structured interview schedule and the associated stage of Appreciative Inquiry.

	<b>Predetermined semi-structured interview questions</b>	<b>Associated stage of Appreciative Inquiry</b>
Q1.	<i>Let's think about a time when you were teaching a student with chronic or recurrent pain, and you felt like the interactions and/or the situation went well. So, we are thinking of the best situation you have had with a student with chronic pain. Please describe what this was like (Interviewer explores the situation in relation to the research questions)</i>	Discovery Appreciating the strengths: "the best of what is"
Q2.	<i>Now let's think of a time when an interaction or situation relating to a student with chronic pain was tricky, more negative, or you just didn't feel like it went well. Please describe what this was like (Interviewer explores the situation in relation to the research questions. Interviewer reflects with participant regarding other interactions e.g., in the playground or when relieving a class when they may not know the student)</i>	Discovery
Q3.	<i>Let's reflect on school and classroom procedures, your training and professional development that you do as a teacher: How do you make decisions day to day with these students? What do you think about/ask yourself/ask the child to help you make these decisions? (Interviewer guides the reflection by drawing on previous examples, or additional examples as required)</i>	Discovery
Q4.	<i>What would make the situation better for you? (e.g., What do you need? How would you like it to be if you could dream of a different future?)</i>	Dream and design
Q5.	<i>What do you think needs to happen in the broader community for this to be better? (For you, for your student, for society)</i>	Dream and design

example that teachers felt went well and contrasted with an interaction/example they felt did not go well. R.F. explored and captured a range of teacher-student interactions including interactions with their usual class, interactions with students they may not know as well (e.g., if they were relieving, or only teaching a single subject) and single interactions in the playground with students they may not know. R.F. asked participants to expand on points of interest as they arose, including personal and system-level barriers and facilitators to feeling fulfilled, confident or positive when responding to student pain. The “dream” and “design” phase of the interview, focussed on “envisioning what might be” and “co-constructing the future.” Interview questions explored teachers’ thoughts and feelings about what they might need if things were to change (Q’s 4 and 5). Teachers had not engaged in any discussion with R.F. about what potential change might look like (e.g., pain science education in schools), so these questions were a raw exploration of the problems teachers identified relating to managing student pain. Table 1 lists the predefined questions and flow for each interview, however R.F. continued to explore topics with each participant as they arose, so some exploratory questions differed between interviews.

## 2.5 | Data Analysis

The data were analyzed using reflexive thematic analysis and followed the six stages of thematic analysis (familiarization, coding, generating themes, reviewing themes, defining themes, and summarization) to guide and conduct our analysis [27]. Reflexive thematic analysis was chosen because it supports in-depth, interpretive analysis of meaning across qualitative data. This approach recognizes the researcher as an active contributor to the knowledge production, enabling a nuanced interpretation of the data shaped by theoretical positioning and professional insight. We chose this method to utilize researcher reflexivity whilst exploring how teachers make meaning from the complex, context-dependent experience of pain in their students [27].

For familiarization, R.F. transcribed all interviews and read through transcripts twice before coding. All data were deidentified before coding. R.F. adopted predominantly inductive approaches to coding. Some deductive approaches ensured that the authors were answering the research question at hand, with the intended theoretical approach of positive psychology (Appreciative Inquiry approach). Thus, R.F., E.T., and J.W.P., developed broad a priori codes based on Appreciative Inquiry, both to organize our interview questions, and to organize our data to personal, interpersonal and system-level strengths guided by the Socio-Ecological public health model [15]. Deductive codes included concepts such as “individual strengths,” “strengths in the teacher-student relationship,” and “system-level strengths.” Beyond this, R.F. maintained an open and iterative coding process that allowed for the generation of new, inductive codes such as “emotional burden,” “ambiguity of pain,” and “invisibility of pain” to capture the unique experiences of the participants and their interpretations of their students’ pain experiences. In line with the reflexive process, the analysis and coding were not linear. R.F. engaged in a reflexive process returning to the data, questioning assumptions

(with guidance from E.T., J.W.P., and E.O.W.), and adapting codes as understanding evolved.

With the intention of this study to guide change processes, R.F. used both semantic and latent coding, with consideration to the language, the content and the deeper underlying meaning and motivating factors for participants when responding to student pain. R.F. developed candidate themes from initial codes and iteratively refined the themes through discussion with co-authors (E.T., J.W.P., E.O.W.). R.F. approached a clinical team who work with children and adolescents experiencing chronic pain (Queensland Interdisciplinary Pediatric Persistent Pain Service in Australia) to reflect on findings and support further refinement. R.F., and E.T., also approached a qualitative research community of practice (“Qual analysis at the University of Technology, Sydney”) to further refine themes. The author team sought these opportunities for discussions to facilitate deep reflexivity across multidisciplinary clinical and research expertise. Only deidentified data were discussed.

R.F., E.T., J.W.P., and E.O.W. defined themes using both an illustrative and analytic approach [27]. R.F. used data excerpts to illustrate themes, including the central organizing concept and the breadth and diversity of perspectives surrounding this. Alongside this, R.F. examined and contextualized the data in relation to the literature. To adhere to the principles of reflexive thematic analysis as conceptualized by Braun and Clarke [27], E.T., E.O.W., and J.W.P. provided supervision and guidance to ensure existing literature did not dictate the analysis in a way that overshadowed the data. Specifically, R.F. engaged with literature relating to misunderstandings about the biopsychosocial nature of pain that may occur in society (e.g., that pain and tissue damage are closely related) [18, 34]. Additionally, R.F. engaged with literature relating to pain-related stigma experienced by students at school [12, 16]. R.F. critically considered how her familiarity with the literature and her own experiences treating young people with chronic pain influenced her interpretations and theme development, thus enriching the analysis process through this reflexivity. To further inform and enrich the analysis, R.F. also engaged with educational learning theories and frameworks that teachers mentioned during interviews (e.g., growth mindset; Maslow’s hierarchy of needs), critically considering these theories to sensitize her to patterns without imposing predefined themes.

## 3 | Results

We interviewed 11 teachers: 9 teachers from the pool of 79 teachers contacted after the survey who agreed to interview; and two participants we recruited further from personal and professional networks to achieve information power. Interviews ranged from 52 to 89 min (average=65 min) in length. Participants predominantly identified as female (82%;  $n=9$ ), and all teachers were working in Australian schools at the time of the interviews. At the time of the interviews, eight teachers worked in primary schools (teaching students up to 12 years), with one of these holding a leadership position (i.e., school principal); and three worked in secondary schools (teaching students between 12 and 18 years). All teachers drew on teaching experiences with students aged between 10 and 14 years, with chronic and recurrent pain, which we

determined as pain lasting longer than 3 months (reported by students to teachers) with or without a diagnosis from a medical provider.

We developed three themes with sub-themes from the data and conceptualized these themes using the Socio-Ecological Model, where our themes are represented within different levels of influence for students experiencing pain in a school setting (Figure 1). In line with the Appreciative Inquiry approach, our themes summarize the experiences of teachers with a focus on the interpersonal and system-level strengths that influence how teachers make meaning from and respond to students with pain. We did not separate pain experiences into acute, chronic, or recurrent because the resultant themes are relevant across all pain experiences that teachers described.

### 3.1 | Theme 1: The Teacher/Student Relationship Is Dynamic and Multifaceted

The teacher/student relationship is complex and specific to the individuals involved. It presents unique opportunities for connection and influence when students experience pain, be it acute or persisting. The first theme we developed encompasses the strengths within these relationships and key aspects that positively influence pain experiences even if teachers do not see a link with pain. This theme consists of two sub-themes which describe: (a) how teachers scaffold comfort for their students to learn and (b) how teachers are dedicated to caregiving.

#### 3.1.1 | Subtheme 1a: Teachers Scaffold Comfort for Students: “To Be Comfortable Is so Important”

Teachers reported that they scaffold student learning every day, and they provide support through responding to their emotional, social, and physical needs to provide a “just right” environment

for learning. They recognized that comfort is key to learning engagement; pain affects student comfort.

Teachers discussed how comfort is entwined with how it affects learning, as T6 described:

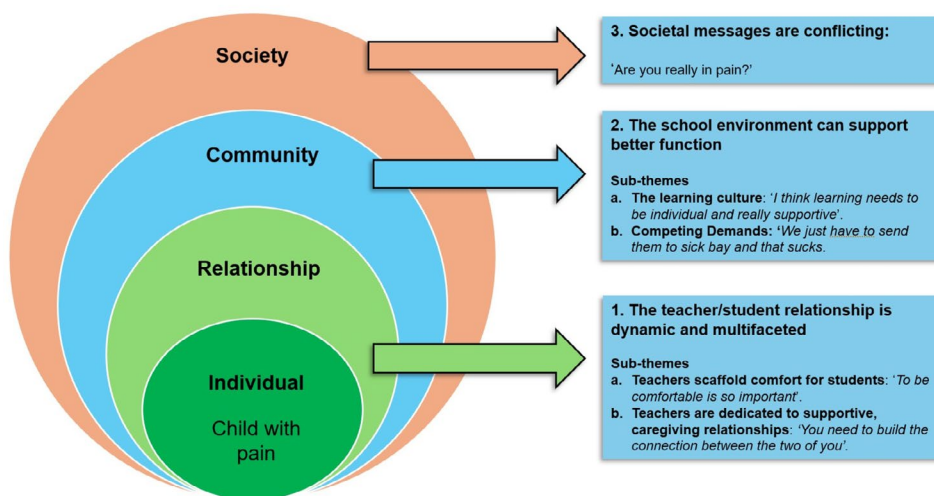
I just find that [...] to be comfortable is so important. So that you can open your cognitive learning ability.

Teachers acknowledged their role in supporting comfort for students before they could expect a student to engage in learning. They listed physical strategies (e.g., T6: a special chair and cushions to support a student with scoliosis; T11: suggesting position changes when a child was uncomfortable on the floor for long periods), and sensory strategies (e.g., T3: adjusting the lighting or providing headphones for students with light and sound sensitivity). Additionally, teachers described scaffolding social situations and supporting emotional wellbeing, such as buddying a child with a peer or practicing/scripting a social encounter.

While teachers recognized and delighted in the success of their learning strategies to change pain experiences, they were unable to fully explain the mechanisms for this success. They hesitantly described possible mechanisms being distraction, or that the pain might not have an organic cause, and that students may be expressing a need from them as a caregiver. For example:

...she was complaining of stomach pains, and so, instead of sending her to the office because I really wanted her to stay, and I wasn't sure if it was real or not, I have like a pillow corner, so I offered her some time to lay down and see how she felt, and then checked back in five minutes... and had to check in, ask questions about where the pain was, or how you

Multi-level influences on teacher responses to children who report pain at school.



**FIGURE 1** | Themes mapped to the socio-ecological model of health. Each concentric circle represents a level of influence within the socio-ecological model for a child experiencing pain at school. Themes developed from the study are indicated in the blue boxes. Themes are numbered 1–3; (a, b) indicate subthemes.

know... how she was feeling. Uh, and I think that positive interaction plus giving her some time to reset seemed to give her the confidence to be able to come back in and take part in the rest of the lesson.

(T1)

Teachers described feeling useful when they were able to support a student and this feeling motivated them to seek to understand the needs of young people. They appeared more confident to support students with pain when they drew from their supportive learning frameworks to scaffold comfort rather than focusing on the cause of pain itself.

I have a big tub of old pillows... and generally in certain lessons, I'll say to the kids, You can get the pillows out now and go where you want. But it is a great kind of thing. If someone's not feeling well, and I'm not sure if they are going-home-worthy then I'll say, you know you can have some time out if you need.

(T1)

### 3.1.2 | Subtheme 1b. Teachers Are Dedicated to Supportive Caregiving Relationships: “You Need to Build the Connection Between the Two of You”

Teachers are caregivers in the classroom environment, meaning they have a role in keeping the students in their care safe. This subtheme captures how teachers navigate this understanding of safety and caregiving in relation to pain experiences.

When questioned about their response to challenging or confusing behaviors associated with pain (e.g., crying during class, or limping in the absence of an obvious injury), teacher accounts often drew on their core values; and commonly this came down to the relational role as the caregiver and the protector of the child in pain. When asked about what she thought was important to consider when working with students who report pain, T4 described:

You need to validate their feelings and their emotions, and build that emotional intelligence and that connection between the two of you [...] So yeah, I'll just come back to it, but relationships [are key].

At times, participants could articulate how teacher/student relationships could positively influence pain experiences. They drew from their knowledge that they can influence learning through the development of trusting relationships and applied this to pain. Teachers described getting to know their students as key in this relationship-building process. For example, one teacher reflected on the time she took to get to know a student's history while building the student/teacher relationship, and how this affected her response when the student experienced pain (T11):

So I guess, with that really serious case, it's really important that I know that history [...] and I know that this girl is not going to make a giant fuss. And

I know that she is likely to remain quiet. So I need to really monitor her and watch her [...] and that's because she's actually hurting.

Teachers also appeared to acknowledge that pain, like learning, is dependent on context, and feeling safe through trusting relationships and structured, calm environments might change a pain experience. For example, T10 (referring to herself as Mrs. G for anonymity) described this student's experience of chronic pain and how safety influenced her experience:

She'd prefer to be here because it's calm and structured, and Mrs G is here, [...] even with her pain.

While teachers were united in recognizing the importance of building trusting and supportive relationships with students, they drew from many different frameworks and strategies to build relationships. “Modelling unconditional regard” (T7) was one description of an approach to relationships with students, which stemmed from a trauma-informed lens. A more practical example raised by several teachers was allowing students choice and space to have a voice. Other teachers spoke of the importance of individual moments of connection, allowing space for the child to share their interests, and paying attention to their day-to-day wellbeing. Thus, understanding and responding to student pain appeared to be expected—though perhaps unrecognized—and essential for teachers to perform typical caregiving aspects of their teaching role.

## 3.2 | Theme 2: The School Environment Can Support Better Function

Schools have their own ecosystems involving people, culture, policy, and practices. This theme represents the experiences of teachers in the context of their broader school environments, and how this environment influences their decision-making, practice, and care of students when they experience pain. To illustrate these concepts, we developed two sub-themes which capture (a) the supportive nature of the learning culture and (b) competing demands that influence teacher responses.

### 3.2.1 | Subtheme 2a. The Learning Culture: “I Think Learning Needs to Be Individual and Really Supportive”

Teachers described that inclusion policy influences teaching culture and practice: which states that students should have access to and participate in a high-quality education with reasonable adjustments and supports to fully engage in the curriculum alongside their similar-aged peers [35]. To meet the expectations of inclusion policy, teachers in our sample described an individualized approach. They talked about the complexity of learning and the importance of considering the whole child. T4 explained:

You know, I think learning has to be really supportive... I don't think we can have a blanket rule for teaching and learning for every single student. I think it needs to be completely individualised.

Teachers reported that students with ongoing pain appeared to benefit from this individualized, whole-child approach to support inclusion, because teachers noted improved attendance and participation.

To articulate how teachers interpret the intersect between pain and learning, T8 described: “Pain affects brain health.” That is, if students don’t feel comfortable enough, or safe enough, they will not be able to perform “healthy brain” functions such as learning.

At times, teachers were unable to provide clear boundaries for their role in supporting student wellbeing, relying on their own experiences or the support of senior experienced teachers, and often accompanied by feelings of anxiety and fear of doing something wrong. Notably, when discussing an inclusive learning culture, teachers appeared to be more confident navigating their role in pain-related healthcare and wellbeing. In these instances, they appeared less focused on “fixing” the pain and reported less fear and discomfort with pain’s subjectivity or any uncertainty surrounding causality.

### 3.2.2 | Subtheme 2b. Competing Demands: “We Just Have to Send Them to Sick Bay and That Sucks”

This subtheme captured the competing demands influencing teachers in their roles, such as academic pressures, relationships with parents and carers, school policies, and the wellbeing needs of teachers themselves.

Teachers described a sense of helplessness and overwhelm in their accounts of managing student pain. T4 described: “I can only do what I can do based on my experience,” noting that managing student pain is common, but not something she has ever been taught. Drawing from personal and teaching experience can take time and energy. However, participants discussed needing time to explore the experience with the student, to build rapport potentially away from other students, to discuss options with other teachers, and to reflect on their own experiences. T3 described: “It’s hard to find time, and sometimes you don’t eat.” Because teachers described needing more time to build relationships outside the pressures of the classroom where the academic load can feel heavy, this often happened at lunch time, at the expense of their own lunch break.

At times, worry about work extended to their home life, and in one example, it encroached on sleep (T1):

I wake up in the middle of night, sometimes being like: ‘Did I say that thing right? Did I do that thing right?’ I just question whether or not I had done the right thing...

Other teachers described worry for themselves and for others involved in students’ care. They worried about what the parents might think, and even the fear of a lawsuit if the pain was not managed well, or if they missed something critical. T2 said:

There’s a very fine line between, you know if we then deny treatment, or whatever first aid, or whatever to

the child who’s potentially unwell, that could end up with a lawsuit, you know...

Teachers described extending their school day to talk with parents, and how this extra time and care extended beyond what they understood as their job description but is a necessity in their caregiving role. Often, these encounters with parents were met with more distress, and teachers described this as an increased emotional burden. For example, T1 explained an encounter with parents where she felt misunderstood because she was asking parents if they had more information about their child’s pain—and was left with continued distress in her student:

And you know a lot of the times when you do bring things up [how ongoing pain is affecting learning], and you’ve got everyone’s best interest in telling them that. Um, you get defence back, and then you’re like: ‘Well, that’s all I can do.’ So I guess I do have to let that kid have—you know—tears in the classroom.

At times, teachers expressed disappointment at the decisions they felt forced to make, because of the competing priorities in their day-to-day role. T4 illustrated this feeling of overwhelm and disappointment when describing an account of a student in her class with recurrent stomach pain. She was reflecting that with more time, she could possibly have found a way to support her participation, rather than sending her home or to the sick bay (school nurse).

We just have to send them [the student] to sick bay, and that sucks because it feels horrible. But at least you know somebody’s watching them, and it means that you can attend to the other six kids that have got, you know, ADHD, [...] autism, [...] trauma [...] and then you’ve got three over there, having sensory meltdowns.

Teachers in our sample were protective toward the wellbeing of their students—and at times described this feeling like a burden, or extra cognitive and emotional load. T8, who was in a leadership position at the time of the interview described his concern for his staff member who he described was carrying extra emotional load, and spending many nights worrying about a student:

I think one thing we’ve got to be conscious of as well is the vicarious trauma that happens as well for teachers, [...] she [another teacher] thinks it’s her fault [a student who is very distressed when in pain], and she doesn’t know what to do. So that’s causing trauma for her.

This example illustrates that a teacher’s own wellbeing can sometimes be influenced by caring for students with chronic pain. Teachers expressed a desire to learn more about pain to improve their confidence in responding, but this was difficult to fit into their routine.

Amongst all of this, teachers described individual school policies and procedures that they felt created added pressures impacting

their responses to student pain. These included school-specific policies such as prescriptive behavioral responses to manage recurrent pain (e.g., recurrent abdominal pain) that did not feel intuitive or individualized. Teachers described that these policies and procedures added to the associated worry about decision-making in situations that were already overwhelming and stressful, particularly when teamed with the added distress of the student reporting pain. Overall, teachers described these competing priorities and resultant overwhelm detracted from their ability to draw from their strengths when responding to student pain.

### 3.3 | Theme 3: Societal Messages Are Conflicting: “Are You Really in Pain?”

This theme captured how teachers make meaning from and respond to student pain in the presence of society’s misconceptions about pain. Additionally, we describe the internal conflict for teachers when they may be aware of the incongruence between misconceptions and what they know about their students.

A common societal misconception is that pain is always associated with harm in the body, and that pain is only real if there is an organic cause [18, 34]. As teachers in our sample attempted to problem-solve pain, they were naturally curious about causality. This presented as potentially searching for patterns in the pain presentation, to understand either the reality of pain or the causality of the pain. T10 described a child in her class with stomach pains:

When she—if she does (complain of pain) I think to myself like ‘are you really [in pain]?’ Or is it just that you are just feeling really horrible being at school right now? We’re trying to find a pattern around it. I was starting to think it’s more, maybe social, really, and like anxiety around the other kids.

When our participants discussed pain in their students, they hypothesized about pain’s meaning and purpose and at times dichotomised pain experiences into real and not real. That is, they described pain in the body where there is evidence of damage as “real pain,” and when pain is not a result of bodily damage (e.g., “maybe social”) it was described as “not real” or “in the mind.” However, despite questioning the reality of pain in the absence of damage, they discussed that their students may be expressing pain as a means of discomfort from somewhere, and this still required their attention (e.g., “feeling really horrible being at school”). This is further illustrated in this example from T11 hypothesizing about what a student might be communicating through pain.

He uses that as a reason for why he doesn’t want to sit on the floor [...] I don’t know whether he feels actual pain, or whether it’s fatigue.

Teachers reported that they lacked a consistent framework and language to understand and describe the complexity of pain experiences. This was uncomfortable for them, with teachers

describing the process of trying to understand the causality of pain as a “cognitive burden.” T1 described:

Yeah, it [the cognitive load of caregiving associated with pain] is a burden, and I wish it wasn’t something that you know had to be. [...] I guess at least we’re there to try and notice it [the pain] and figure it out.

The challenge of articulating the unknown (i.e., the possible reasons or causes of pain) and associated discomfort, was evident as teachers grappled with words, attempting to define pain with an organic cause as “actual pain” or “genuine pain.” This is illustrated in this excerpt from T7:

But there are some students you can actually genuinely say: Oh, yeah, you are definitely not well, or someone who doesn’t fall sick that often or someone who doesn’t complain of a pain that often, you know that yes, they are genuine causes.

Teachers drew on their own pain experiences whilst seeking to understand pain in their students, but these experiences were influenced by exposure to society’s understanding of pain. For example, T9 described her beliefs associated with her experience with headaches which influenced how she behaved at school:

Pain’s invisible. No one’s gonna understand, and I don’t want people thinking I’m sick or there’s something wrong with me, which you know I always say [...] if you didn’t know I had pain, you wouldn’t know, because I’m the loudest person in my staff room.

This teacher went on to describe that her own beliefs about how pain is perceived by others, and her associated learnt behaviors (i.e., dismissing her own pain at school) were reinforced by the behaviors of students in her classroom.

And so, if they (the students) can’t see it (the pain), they don’t believe it. And if anyone’s doing something a little bit different well, (the students say): they’re just feral or they’re a faker.

Other teachers described an awareness that misunderstandings and miscommunication about pain could be harmful to the student’s future experiences and relationships. In this example, T4 reflected on a time she felt she “got it wrong”:

What could I implement [differently next time] without belittling the child, you know, even if it [my initial response] was completely unintentional? That [the way I responded] will hang on that child’s heart [...] and then that’s going to continue to impact their learning.

The challenge of pain communication, whether it be from or to students, or related to other school community relationships,

was expressed as an ongoing problem by participants. T1 described her wish for students: “To have a truth button!” expressing that she felt they just couldn’t explain the “real” reason for their pain, perhaps not believing the pain as real, or questioning whether the child was mislabelling a challenging experience (e.g., anxiety about testing). She went on to say: “Yeah, to be able to [...] have more information [about pain experiences]” would help the situation, referring to the lack of biopsychosocial language in school communities that is acceptable for explaining pain.

## 4 | Discussion

Using reflexive thematic analysis and an appreciative inquiry approach, we generated three themes with sub-themes that map to the socio-ecological model of health to explain how teachers may make meaning from and respond to student pain. Our themes reflect the intricate interplay of various factors that influence teachers at the relationship, community, and societal levels: (1) the teacher/student relationship: their dedication to caregiving and the extensive skills they hold to scaffold comfortable school participation; (2) the school environment: the positive learning culture amongst competing demands; and (3) the societal misconceptions that influence teachers’ conceptualization and response to students with pain. Many variables influence all pain experiences of students at school, and our study highlights unique strengths to potentially leverage for responsive and preventative pain care.

Like a clinician’s biopsychosocial approach to pain, teachers in our study used a whole-child approach to support learning. They drew from their understanding of Maslow’s hierarchy of needs and recognized their role in creating a safe classroom learning environment to promote academic success [36–39]. We observed that when teachers in our study considered the physical, emotional, social and cognitive factors that might influence a child’s situation (i.e., the whole child approach), they positively influenced student wellbeing and classroom participation. For example, participants spoke of promoting calm and predictable environments, regular routines, classroom rituals, scaffolded learning, and trusting relationships. Similarly, Jordan et al. [17] found that in the absence of specific training (about pain), teachers working with students with juvenile idiopathic arthritis and chronic pain were found to enact biopsychosocial care through adopting creative, proactive strategies to support student participation in school. However, teachers in our study did not consistently apply a whole child approach in their responses to student pain, and there were resultant negative consequences (e.g., students being kept home from school when not acutely unwell). We identified a lack of knowledge about pain as one potential barrier to consistent whole child responding (e.g., understanding that pain is biopsychosocial).

Participants also lacked language to communicate pain’s complexity, using words such as “actually” and “genuinely” to describe invisible pain, hence implying that only pain associated with physical damage is truly real. The associated language and behaviors of this misconception (e.g., uncertainty displayed through tone of voice and body posturing) may result in students experiencing pain-related stigma despite the best intentions of

teachers. Dichotomizing pain into physical or psychological experiences has been found in other studies with similar negative consequences [12, 40, 41]. Positively, we noted that when teachers acknowledged pain’s protective purpose, they used holistic experiential language, drawing from multiple possible biopsychosocial influences to express their understanding with empathy. However, along with findings from Logan, Coakley, and Scharff [42] this fluctuated and appeared to be context-specific (e.g., when they may have recognized trauma or neurodiversity). Hence, integrating language that aligns with frameworks already in use in schools (e.g., trauma-informed teaching) may be beneficial for improving pain communication and responding, in turn influencing long-term outcomes such as school functioning.

Supported by Bandura’s social learning theory [20], participants we interviewed confidently described their understanding of their social role in classroom learning; however, they could not always explain their social influence on student pain. We observed that participants did not consistently consider their own interactions as affecting student pain experiences, as they would with learning. This could be related to a potential gap in knowledge about how pain works, particularly the social and relational aspects of pain, and could have lasting consequences for students because these negatively biased responses may affect pain memories and future pain processing [23, 43].

The responsibility of healthcare amongst the competing demands of teaching was richly described in our data, often associated with feelings of reduced competence and confidence. For example, one participant described their responsibility as a burden (“it keeps me awake at night”), whereas others described the ongoing discomfort of time pressures. Teachers teach health curricula, they model health messages [44], and they are inherently responsible for aspects of student health and well-being whilst in their caregiving role. However, the demands of this multifaceted responsibility for student health and wellbeing may not be fully understood by both the health and education sectors [45]. The boundaries of what is considered health work and what is not, can be gray [46]. Despite this, some teachers who referred to their school inclusion policy support programs described instances where they felt well-supported in the school culture and could clearly define their role in supporting the health needs of their students. Unfortunately, we noted this coincided with pain being labeled as a disability, which could have negative consequences (e.g., a belief that there may be permanency to functional limitations). However, positively, these teachers could seek leadership support more readily and define their role and expectations as health workers more clearly amidst competing demands. Therefore, despite possible associations with disability terminology, drawing on inclusive educational policy and practices already embedded in schools could positively influence pain experiences for young people.

### 4.1 | Limitations

Despite distributing the invitation widely, we were only able to recruit Australian teachers; hence, some information relating to the Australian curriculum, policy, and culture may not

generalize to other contexts. Participants had previously participated in a chronic pain research survey, so they may have a vested interest in the topic. Although this was acceptable to address our aims, it may have narrowed the reports of the challenges faced by teachers or the inherent strengths in individuals and systems. We did not explicitly explore individual pain experiences with teachers or collect information relating to whether teachers had ever engaged in pain science education. We intentionally chose not to collect this information so that participants and the authors remained naïve to any expectations during discussions and analysis, with the purpose of allowing for deep reflexivity and curiosity relating to the meaning and purpose of pain. This information could have been collected after interviews, and the authors could have remained blinded until after analysis. Such information about baseline knowledge, beliefs, and experiences may be useful to collect in future research to allow for a clearer understanding of the spectrum of needs that may require consideration when directing clinical care or public health interventions.

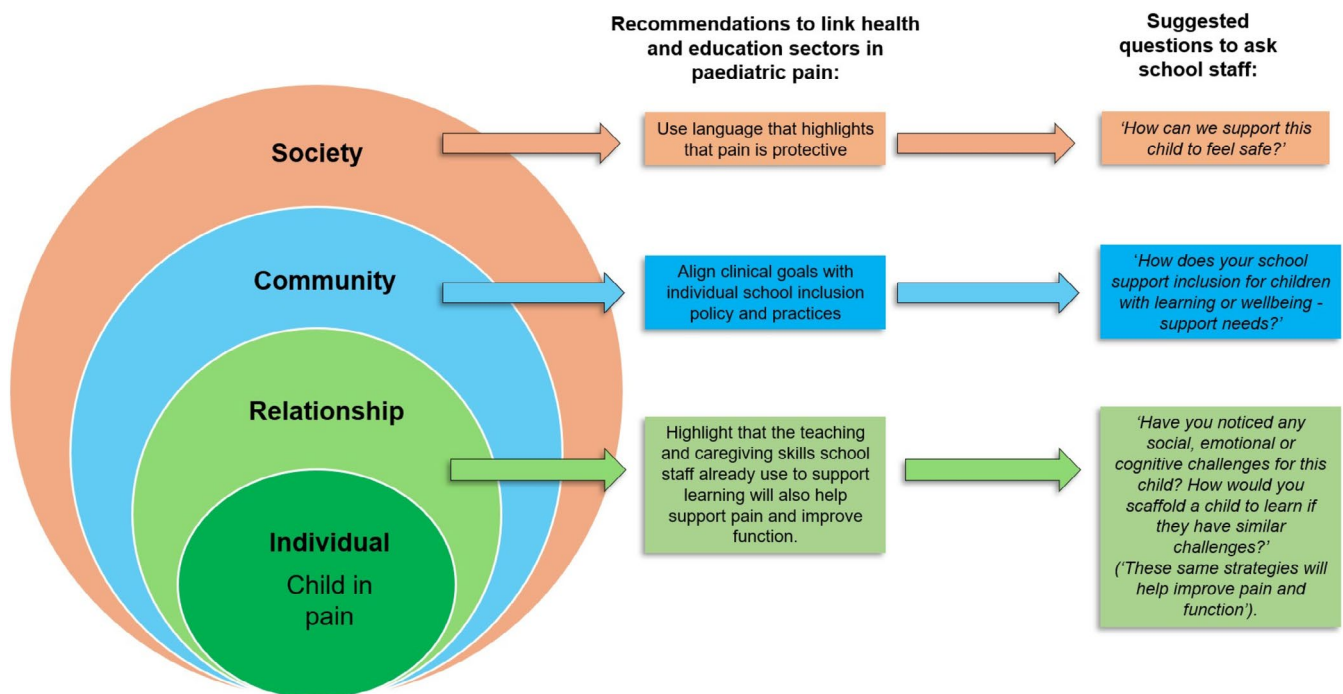
## 4.2 | Recommendations

We seek to bridge the divide between health and education teams for communicating about pain, despite known challenges due to differing overarching visions and goals [47]. We present strengths-based qualitative insights geared to aligning these visions, which could inform clinical encounters centered around school participation. Similarly, individuals seeking to implement public health interventions related to improving pain-related outcomes (whether they acute or chronic) may draw from these

insights. We do not seek to transfer healthcare to teachers and schools, but rather, we present three recommendations that may reduce the burden of healthcare in schools through strengthening partnerships and focusing on strengths already existing in school communities (Figure 2):

1. Use language that highlights pain's protective purpose (rather than a behavior management approach which may imply that pain-related behaviors are intentional). Suggested questions that may help shift the focus toward curiosity for what might be happening for the young person could be: "What makes this child feel safe?" or "What might be contributing to these protective behaviours?"
2. Align clinical goals with individual school inclusion policy and practices: Inclusion-focused educational policies and practices are favorable for pain treatment goals because they aim to increase school participation and function (e.g., a quiet room for sensory regulation or peer buddy for social support). We suggest inquiring about individual school possibilities for wellbeing support because each school addresses inclusion uniquely and is dependent on their resources, training, and sociodemographic complexities.

Highlight the parallels of learning and pain (i.e., whole child experiences) to optimize and draw on teaching strengths when responding to pain. Teachers have specialized skills and access to a plethora of strategies to support individualized learning. They understand and value teacher/student relationships. Directing a teacher back to their safe base of knowledge and theory may



**FIGURE 2** | Recommendations to link health and education sectors across socio-ecological tiers. The figure illustrates recommendations for clinicians and researchers seeking to link health and education sectors when providing treatment, advocacy, or preventative health implementation strategies. Recommendations and example suggested questions are color-coded to match their respective tier of influence in the socio-ecological model. The questions are designed as a guide to begin conversations to support individualized pain management at school.

help them to respond consistently and adaptively to the whole child, which will positively influence pain experiences.

## 5 | Conclusion

This qualitative study explored how teachers make meaning from and respond to student pain, identifying individual and systemic strengths within schools that may support young people experiencing, or at risk of chronic pain. We generated three themes reflecting: (1) the importance of the teacher-student relationship, (2) the influence of inclusive school policies and cultures, and (3) the impact of broader societal beliefs about pain. Although teachers demonstrated a deep commitment to student wellbeing, they did not always realize their social influence; that is, how relationships, language, and actions could shape students' experiences of pain. Framed within a socio-ecological perspective, these findings suggest that leveraging inclusive practices and fostering a shared language and understanding around pain may help optimize teacher-student relationships and could be valuable targets for future collaboration between educators, clinicians, and researchers.

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### Author Contributions

Contributions to the study are as follows: Conception and design (R.F., J.W.P., E.T. and A.V.); acquisition of data (R.F.); analysis and interpretation of data (R.F., E.T., J.W.P., E.O.W.); article drafting (R.F.); revision of article content (E.T., J.W.P., E.O.W., A.V.); final approval of published version (R.F., E.T., J.W.P., E.O.W., A.V.). All authors have approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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### Ethics Statement

Ethical approval for this study was provided by the University of Technology Sydney Human Research Ethics Committee (HREC ETH22-7536).

### Conflicts of Interest

J.W.P. has published children's books in the field of pain science education for children. There are no other conflicts of interest to declare.

### Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

### References

1. S. N. Raja, D. B. Carr, M. Cohen, et al., "The Revised International Association for the Study of Pain Definition of Pain: Concepts, Challenges, and Compromises," *Pain* 161 (2020): 1976–1982.

2. R.-D. Treede, W. Rief, A. Barke, et al., "Chronic Pain as a Symptom or a Disease: The IASP Classification of Chronic Pain for the International Classification of Diseases (ICD-11)," *Pain* 160 (2019): 19–27.
3. D. S. Goldberg and S. J. Mcgee, "Pain as a Global Public Health Priority," *BMC Public Health* 11 (2011): 1–5.
4. L. E. Harrison, J. W. Pate, P. A. Richardson, K. Ickmans, R. K. Wicksell, and L. E. Simons, "Best-Evidence for the Rehabilitation of Chronic Pain Part 1: Pediatric Pain," *Journal of Clinical Medicine* 8 (2019): 1267.
5. C. T. Chambers, J. Dol, P. R. Tutelman, et al., "The Prevalence of Chronic Pain in Children and Adolescents: A Systematic Review Update and Meta-Analysis," *Pain* 165 (2024): 2215–2234.
6. J. Norton and N. Southon, "Exploring the Prevalence of Pediatric Chronic Pain and School Absenteeism for Therapists Working in Schools: A Systematic Review With Meta-Analysis," *Physical & Occupational Therapy in Pediatrics* 41 (2020): 227–243.
7. E. O. Wakefield, W. T. Zempsky, R. M. Puhl, and M. D. Litt, "Conceptualizing Pain-Related Stigma in Adolescent Chronic Pain: A Literature Review and Preliminary Focus Group Findings," *Pain Reports* 3 (2018): e679.
8. M. L. Hatzenbuehler, J. C. Phelan, and B. G. Link, "Stigma as a Fundamental Cause of Population Health Inequalities," *American Journal of Public Health* 103 (2013): 813–821.
9. A. L. Stangl, V. A. Earnshaw, C. H. Logie, et al., "The Health Stigma and Discrimination Framework: A Global, Crosscutting Framework to Inform Research, Intervention Development, and Policy on Health-Related Stigmas," *BMC Medicine* 17 (2019): 31.
10. E. Castarlenas, R. D. L. Vega, C. Tomé-Pires, et al., "Student Expectations of Peer and Teacher Reactions to Students With Chronic Pain: Implications for Improving Pain-Related Functioning," *Clinical Journal of Pain* 31 (2015): 992–997.
11. E. O. Wakefield, A. Kissi, S. S. Mulchan, S. Nelson, and S. R. Martin, "Pain-Related Stigma as a Social Determinant of Health in Diverse Pediatric Pain Populations," *Frontiers in Pain Research (Lausanne)* 3 (2022): 1020287.
12. E. O. Wakefield, V. Belamkar, M. D. Litt, R. M. Puhl, and W. T. Zempsky, "'There's Nothing Wrong With You': Pain-Related Stigma in Adolescents With Chronic Pain," *Journal of Pediatric Psychology* 47 (2021): 456–468.
13. D. E. Logan and J. A. Curran, "Adolescent Chronic Pain Problems in the School Setting: Exploring the Experiences and Beliefs of Selected School Personnel Through Focus Group Methodology," *Journal of Adolescent Health* 37 (2005): 281–288.
14. K. R. Mcleroy, D. Bibeau, A. Steckler, and K. Glanz, "An Ecological Perspective on Health Promotion Programs," *Health Education Quarterly* 15 (1988): 351–377.
15. U. Bronfenbrenner, "Toward an Experimental Ecology of Human Development," *American Psychologist* 32 (1977): 513–531.
16. E. O. Wakefield, R. M. Puhl, M. D. Litt, and W. T. Zempsky, "'If It Ever Really Hurts, I Try Not to Let Them Know': The Use of Concealment as a Coping Strategy Among Adolescents With Chronic Pain," *Frontiers in Psychology* 12 (2021): 666275.
17. A. Jordan, K. Vasileiou, C. Brown, and L. Caes, "Supporting Primary School Children With Juvenile Idiopathic Arthritis: A Qualitative Investigation of Teaching Staff Experiences," *Children* 8 (2021): 555.
18. C. G. Ryan, E. L. Karran, S. B. Wallwork, et al., "We Are All in This Together—Whole of Community Pain Science Education Campaigns to Promote Better Management of Persistent Pain," *Journal of Pain* 25 (2024): 902–917.
19. F. Alsaggaf and I. Coyne, "A Systematic Review of the Impact of Chronic Pain on Adolescents' School Functioning and School Personnel

- Responses to Managing Pain in the Schools,” *Journal of Advanced Nursing* 76 (2020): 2005–2022.
20. K. D. Craig, “Social Communication Model of Pain,” *Pain* 156 (2015): 1198–1199.
21. A. Bandura and R. H. Walters, *Social Learning Theory* (Englewood Cliffs Prentice Hall, 1977).
22. G. O’sullivan, B. E. Mcguire, M. Roche, and L. Caes, “Where Do Children Learn About Pain? The Role of Caregiver Responses to Preschoolers’ Pain Experience Within Natural Settings,” *Pain* 162 (2021): 1289–1294.
23. S. B. Wallwork, M. Noel, and G. L. Moseley, “Communicating With Children About ‘Everyday’ Pain and Injury: A Delphi Study,” *European Journal of Pain* 26 (2022): 1863–1872.
24. M. Noel, M. Pavlova, T. Lund, et al., “The Role of Narrative in the Development of Children’s Pain Memories: Influences of Father- and Mother-Child Reminiscing on Children’s Recall of Pain,” *Pain* 160 (2019): 1866–1875.
25. T. M. Palermo, C. R. Valrie, and C. W. Karlson, “Family and Parent Influences on Pediatric Chronic Pain: A Developmental Perspective,” *American Psychologist* 69 (2014): 142–152.
26. R. Fechner, M. Noel, A. Verhagen, E. Turbitt, and J. W. Pate, “Do Teachers Question the Reality of Pain in Their Students? A Survey Using the Concept of Pain Inventory-Proxy (COPI-Proxy),” *Children* 10 (2023): 370.
27. V. Braun and V. Clarke, *Thematic Analysis: A Practical Guide* (SAGE Publications, 2022).
28. V. Braun and V. Clarke, “Conceptual and Design Thinking for Thematic Analysis,” *Qualitative Psychology* 9 (2022): 3–26.
29. R. D. Treede, W. Rief, A. Barke, et al., “A Classification of Chronic Pain for ICD-11,” *Pain* 156 (2015): 1003–1007.
30. K. D. Craig, “The Social Communication Model of Pain,” *Canadian Psychology/Psychologie Canadienne* 50 (2009): 22–32.
31. M. R. Bleich and C. Hessler, “Appreciative Inquiry and Implementation Science in Leadership Development,” *Journal of Continuing Education in Nursing* 47 (2016): 207–209.
32. K. Malterud, V. D. Siersma, and A. D. Guassora, “Sample Size in Qualitative Interview Studies: Guided by Information Power,” *Qualitative Health Research* 26 (2016): 1753–1760.
33. P. A. Harris, R. Taylor, R. Thielke, J. Payne, N. Gonzalez, and J. G. Conde, “Research Electronic Data Capture (REDCap)—A Metadata-Driven Methodology and Workflow Process for Providing Translational Research Informatics Support,” *Journal of Biomedical Informatics* 42 (2009): 377–381.
34. L. G. Moseley, H. B. Leake, A. J. Beetsma, et al., “Teaching Patients About Pain: The Emergence of Pain Science Education, Its Learning Frameworks and Delivery Strategies,” *Journal of Pain* 25 (2024): 104425.
35. Queensland Government, “Inclusive Education Policy [Online],” Department of Education, (2021), <https://ppr.qed.qld.gov.au/pp/inclusive-education-policy>.
36. S. Mahmoudi, E. Jafari, H. A. Nasrabadi, and M. J. Liaghatdar, “Holistic Education: An Approach for 21 Century,” *International Education Studies* 5 (2012): 178–186.
37. A. H. Maslow, “A Theory of Human Motivation,” *Psychological Review* 50 (1943): 370.
38. K. L. Milheim, “Towards a Better Experience: Examining Student Needs in the Online Classroom Through Maslow’s Hierarchy of Needs Model,” *Journal of Online Learning and Teaching* 8 (2012): 159.
39. J. K. Luiselli, R. F. Putnam, M. W. Handler, and A. B. Feinberg, “Whole-School Positive Behaviour Support: Effects on Student Discipline Problems and Academic Performance,” *Educational Psychology* 25 (2005): 183–198.
40. D. E. Logan, S. P. Catanese, R. M. Coakley, and L. Scharff, “Chronic Pain in the Classroom: Teachers’ Attributions About the Causes of Chronic Pain,” *Journal of School Health* 77 (2007): 248–256.
41. R. Joslin, M. DONOVAN-Hall, and L. Roberts, “Exploring the Outcomes That Matter Most to Young People Treated for Chronic Pain: A Qualitative Study,” *Children* 8 (2021): 1170.
42. D. E. Logan, R. M. Coakley, and L. Scharff, “Teachers’ Perceptions of and Responses to Adolescents With Chronic Pain Syndromes,” *Journal of Pediatric Psychology* 32 (2007): 139–149.
43. M. Noel, “Remembering the Pain of Childhood: Development, Impact, and Intervention,” *Canadian Journal of Pain* 1 (2017): 1.
44. T. Rossi, A. Pavey, D. Macdonald, and L. Mccuaig, “Teachers as Health Workers: Patterns and Imperatives of Australian Teachers’ Work,” *British Educational Research Journal* 42 (2016): 258–276.
45. L. Mccuaig, E. Enright, T. Rossi, and D. Macdonald, *Teachers as Health Workers: A Critical Understanding of the Health-Education Interface* (Milton, Taylor & Francis Group, 2021).
46. L. Mccuaig, T. Rossi, E. Enright, and K. Shelley, “Schools, Student Health and Family Welfare: Exploring Teachers’ Work as Boundary Spanners,” *British Educational Research Journal* 45 (2019): 1001–1020.
47. S. Ekornes, “Teacher Perspectives on Their Role and the Challenges of Inter-Professional Collaboration in Mental Health Promotion,” *School Mental Health: A Multidisciplinary Research and Practice Journal* 7 (2015): 193–211.