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A systematic review of the impact of chronic pain on adolescents' school functioning and pain management in school setting



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Introduction

- ▶ Chronic pain (CP) is a significant health problem among children and adolescents.¹
- ▶ Paediatric pain is considered chronic if it occurs once a week, is persistent, or recurs for more than three months, and continues beyond the normal period of tissue healing.¹
- ▶ An international study investigating the prevalence of chronic pain among adolescents (n=214,283) in 42 countries reported that 44.2% of the target population had experienced CP on a weekly basis for the previous six months.²

Introduction

- ▶ Paediatric CP has a definitive and wide-ranging impact on the daily activities including school functioning.³⁻⁹
- ▶ To decrease the impact of adolescents' CP on school functioning, the World Health Organization (WHO) has emphasized the significance of pain management (2018).¹⁰

Review Aim and Question

▶ **Aim:**

- ▶ (a) explore the impact of adolescents' CP on the school functioning;
- ▶ (b) identify pain management interventions used in school settings.

▶ **Question:**

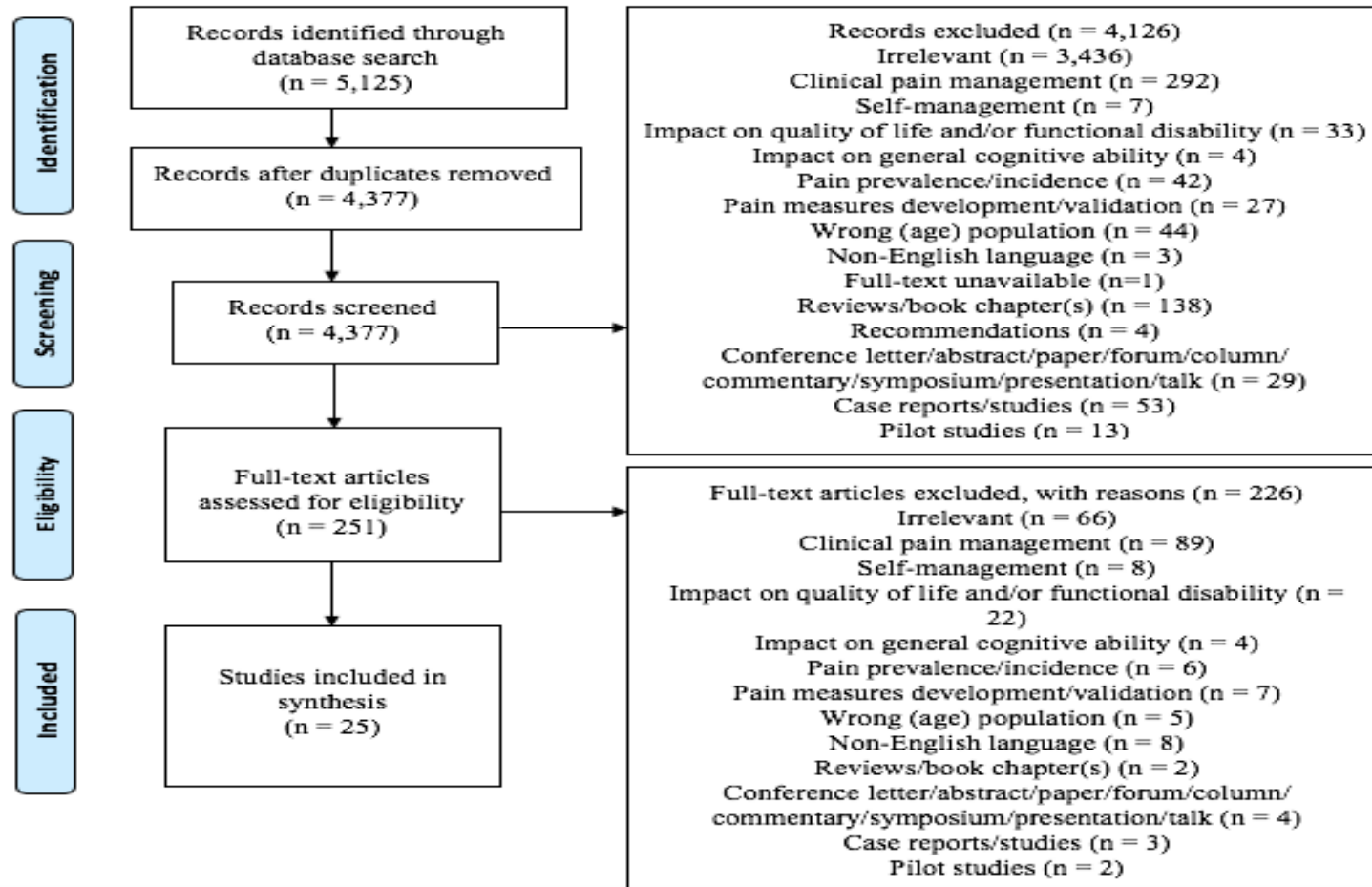
- ▶ What is the impact of CP on adolescents' school functioning and what type of pain management is used in school settings to decrease the effects?

Method: Search Strategy

- ▶ **Main concepts:** (“chronic pain” and “school”).
- ▶ **Keywords:**
 - ▶ “chronic pain”, “persistent pain”, “recurrent pain”, “long term pain”
 - ▶ school*, college*, academic*, institute*
- ▶ **Databases:** MEDLINE, CINAHL, PsycINFO, ERIC, SciELO, Cochrane Library, and EMBASE.
- ▶ **Limitations:**
 - ▶ Limited to all child (0-18 years)
 - ▶ Not limited to the term ‘adolescents’ only.
 - ▶ Not limited to specific dates.

Method: Search Outcome

Figure 1: PRISMA flow chart for studies selection



Method: Inclusion and Exclusion Criteria

Criteria	Inclusion Criteria	Exclusion Criteria
Population	<ul style="list-style-type: none">-Male and female adolescents aged 12 to 18 years.-Medically diagnosed with chronic pain.-Parents of adolescents struggling with chronic pain.-School personnel, including primary teachers, school managers, school academic advisors, and school nurses of adolescents struggling with chronic pain.	<ul style="list-style-type: none">-Participants younger than 12 years.-Participants older than 18 years.-Medically diagnosed with acute pain.
Outcomes	<ul style="list-style-type: none">-School functioning-Pain management in school settings	<ul style="list-style-type: none">-Combines other outcomes such as anxiety and depression with chronic pain outcomes.-Pain management in other settings, like hospitals and homes.
Methods	Quantitative, qualitative, and mixed methods studies.	Pilot studies, conferences, symposiums, case studies/reports.
Settings	Primary research conducted in all countries.	-----
Publication years	1967-2018	-----
Language	English language.	Languages other than English.

Quality Appraisal

- ▶ **CASP:** (n=6) Qualitative studies.
 - ▶ (n= 4) → 20/20 (high)
 - ▶ (n= 2) → 18/20 (high)
- ▶ **MMAT:** (n=19) Quantitative studies.
 - ▶ (n= 1) → 50% (Low)
 - ▶ (n= 2) → 75% (moderate)
 - ▶ (n= 16) → 100% (high)

Data Extraction

- ▶ **Design:** (n=6) qualitative and (n=19) quantitative.
- ▶ **Countries:** USA, Canada, Norway, Spain, Australia, and UK.
- ▶ **Sample sizes:** 6 to 21,065
- ▶ **Data collection:**
 - ▶ Quantitative studies: questionnaires and school records.
 - ▶ Qualitative studies: individual or focus groups interviews

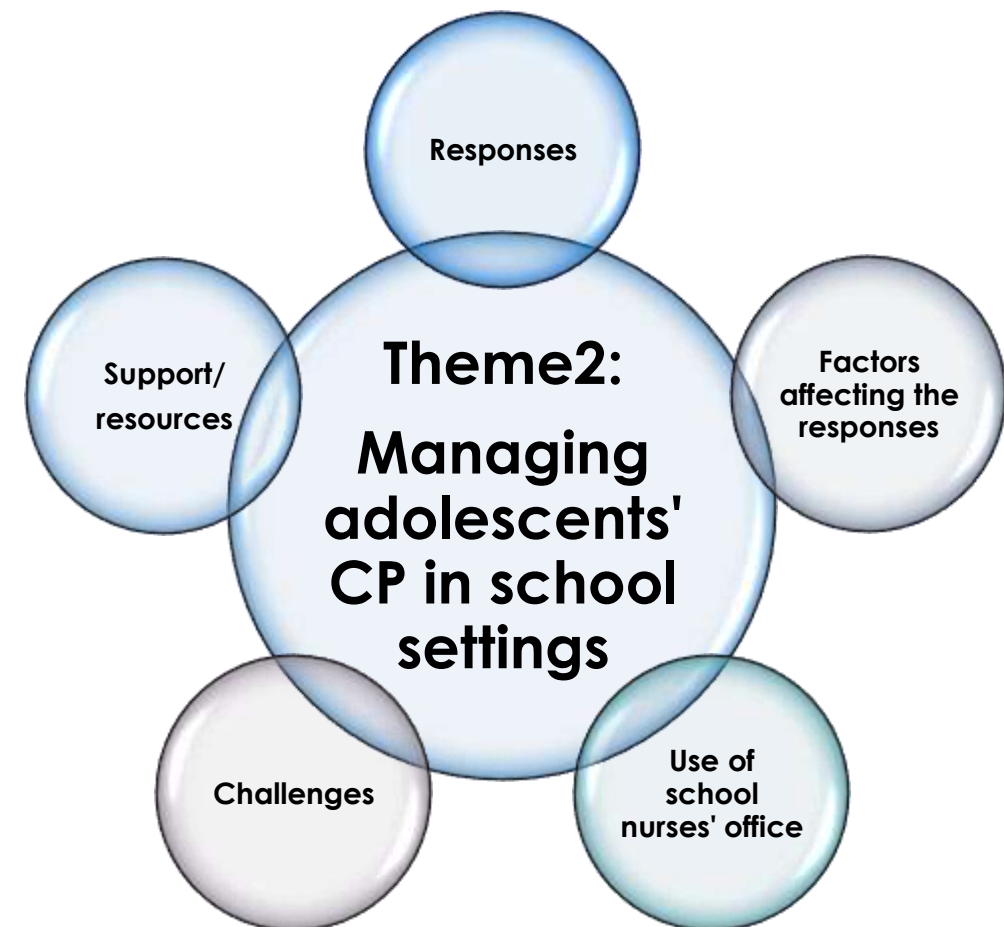
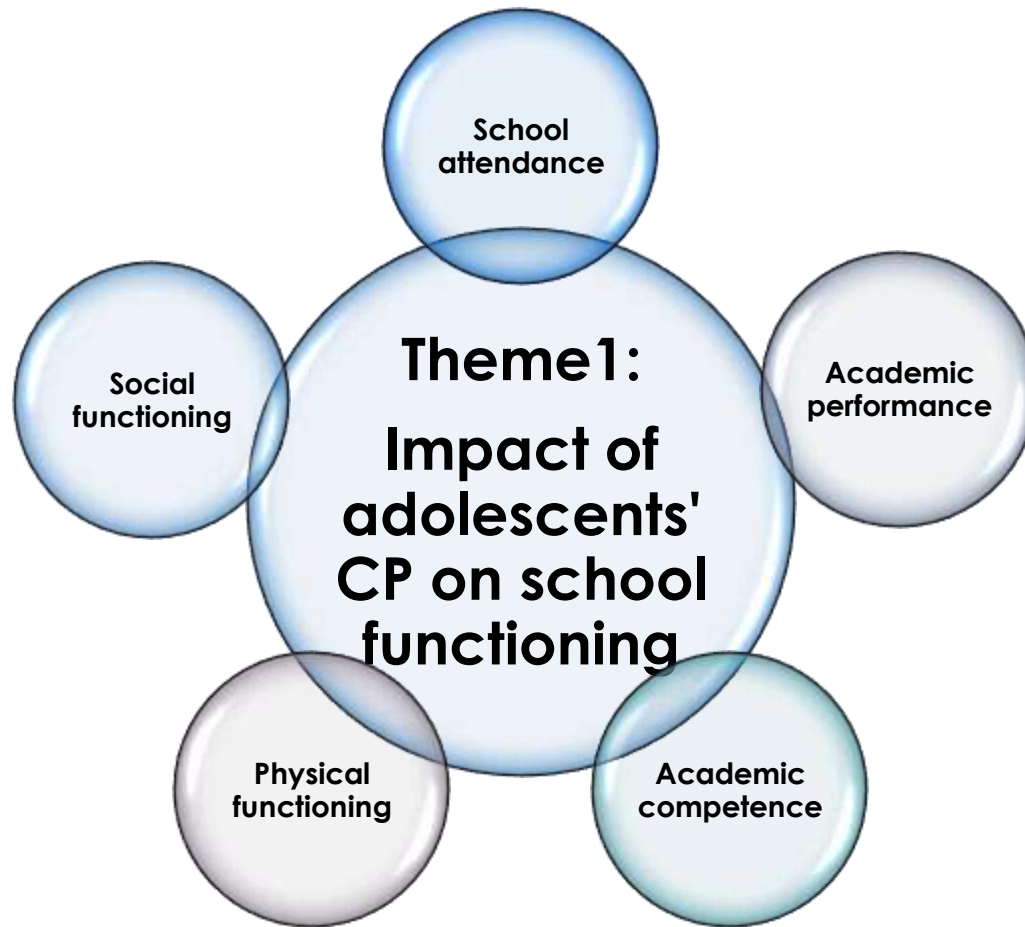
Data Extraction: Example

First Author, Year, and Country	Title	Aim	Study Design and Setting	Data collection	Sample/Participants	Outcomes	Key findings	Quality
Forgeron, 2018, Canada.	Dyadic differences in friendships of adolescents with chronic pain compared with pain-free peers	To determine whether there are differences in friendship features (eg, quality ratings and perceived social support) within and between adolescent friendship dyads when 1 member has chronic pain compared with non-pain dyads. We also explored whether friendship features were associated with indices of social-emotional well-being differently for ACP compared with non-pain adolescents.	<p>Quantitative, a multisite cross-sectional study.</p> <p>Chronic pain participants were recruited from 1 of 3 Canadian pediatric hospital chronic pain clinics by being provided an invitation letter, which asked them to bring a friend of the same sex of their choosing to take part in the study.</p> <p>Healthy friendship dyads were recruited through community advertisements in all 3 cities and indicated that they required a friend of the same sex to take part in the study.</p> <p>Volunteer adolescent friendship dyads together attended 1 of the 3 laboratories and completed a battery of measures.</p>	A battery of standardized measures questionnaire.	n=61 same sex friendship dyads (122) adolescents (13-18 years with average age 15.20 years) participated; 30 friendship dyads included an adolescent with chronic pain.	School functioning. School attendance. Physical functioning. Social functioning.	<p>*Participants with chronic pain missed significantly more school than the other participants. The average days missed of school in the past month for the entire group was 2.71 days (SD 3.77), and the range was 0 to 20 days. ACP missed school on average 4.95 (SD 4.89) days in the past month.</p> <p>*7 participants with chronic pain (23.3%) had little to no pain-related disability; 6 (20%) had moderate pain-related disability; and 17 (56.6%) had severe pain-related disability (score above 50).</p> <p>*Chronic pain was positively correlated with school absences, loneliness, depressed mood, and social anxiety and negatively correlated with self-esteem.</p> <p>*Specifically, ACP pain ranked their friend as being closer than the control participants, although not significantly different from their own friend's ranking of them.</p> <p>*Friends of ACP, however, rated the friendship as not going as well compared with all other participants.</p>	100%

Data Synthesis

- ▶ Narrative synthesis.
 - ▶ Themes and subthemes were narratively emerged by integrating quantitative and qualitative data.
 - ▶ **Theme 1:** Impact of adolescent's CP on school functioning
 - ▶ **Theme 2:** Managing adolescents' CP in school settings

Data Synthesis



Findings: Theme 1: Impact of adolescent's CP on school functioning

- ▶ School attendance, academic performance/achievement, academic competence, physical activities, and social functioning were negatively influenced due to CP of children, adolescents, and young adults.^{11-24,26-30}

Findings: Theme 1: Impact of adolescent's CP on school functioning

- ▶ Children and adolescents with CP scored significantly higher on a number of skills required for academic performance than their healthy peers.²⁵
- ▶ Adolescents with CP were perceived as being academically competent.^{16,19,20}
- ▶ The social functioning of older adolescents was less impacted by CP.^{17,30}

Findings: Theme 2: Managing adolescents' CP in school settings

▶ 1) Responses

- ▶ Teachers preferred to offer a promotion of adaptive coping response.²³
- ▶ Children and adolescents preferred a solicitous response.³³

▶ 2) Factors affecting the responses

- ▶ Teachers' views about the causes of CP.³⁴
- ▶ Documented medical evidence.^{34,35}
- ▶ Contact with pain management health care providers.^{19,34,35}
- ▶ Parental interaction with school personnel.^{23,35}

Findings: Theme 2: Managing adolescents' CP in school settings

▶ **3) Use of school medical services/school nurse's office**

- ▶ One of the most common accommodations used in the school settings was sending the affected students to the school nurse's office.^{20,21,27}
- ▶ Children with CP more frequently using school medical services than healthy peers.²⁶

Findings: Theme 2: Managing adolescents' CP in school settings

► 4) Challenges

- Uncertainties about the medicalisation of students with CP.³³
- High school absenteeism rates.^{19,23}
- Interaction with parents.^{19,23}
- Unfamiliarity with CP syndrome among adolescents.¹⁹
- Lack of knowledge about the pain causes.²³
- The necessity to follow school policies.^{19,23}
- Limited resources.¹⁹
- The demands of adolescents with CP and their healthy peers.^{19,23}

Findings: Theme 2: Managing adolescents' CP in school settings

▶ **5) Support/resources**

- ▶ Sufficient information about students' pain.^{19,23}
- ▶ Special guidelines prepared by health care providers.^{19,23}
- ▶ Association with family members.^{19,23}
- ▶ Connection with pain management team members.^{19,23}

Discussion: Gaps in the Literature

- ▶ A limited number (n=6) of qualitative studies.
- ▶ No study has been conducted in Saudi Arabia.
- ▶ None of the reviewed studies used qualitative case study as a research method approach.
- ▶ No study incorporated the voice of adolescents, their parents, and school personnel.
- ▶ The case study research method will be considered for future investigations.

Implications

- ▶ School personnel.
- ▶ Clinical practice.
- ▶ Parents.

Conclusion

- ▶ This systematic review summarised the evidence discussed the impact of CP on adolescents' school functioning and pain management interventions in school settings.
- ▶ Further research needed to study the relation between adolescents' CP and school functioning domains.
- ▶ Managing pain in school settings should be considered thoroughly to enhance adolescents' school functioning.
- ▶ Conduct a qualitative, case study research method, in SA, to fulfil the gaps identified in the literature.

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