



Article scientifique

Article

2024

Published version

Open Access

This is the published version of the publication, made available in accordance with the publisher's policy.

Periods shouldn't bring any adolescents' world to a full stop. period. An
online survey of adolescents' experience of menstruation

Munro, Courtney B; Walker, Emma N; Schembri, Rachel; Moussaoui, Dehlia; Grover, Sonia R

How to cite

MUNRO, Courtney B et al. Periods shouldn't bring any adolescents' world to a full stop. period. An online survey of adolescents' experience of menstruation. In: Journal of pediatric & adolescent gynecology, 2024, vol. 37, n° 1, p. 18–24. doi: 10.1016/j.jpag.2023.09.004

This publication URL: <https://archive-ouverte.unige.ch/unige:184027>

Publication DOI: [10.1016/j.jpag.2023.09.004](https://doi.org/10.1016/j.jpag.2023.09.004)

Periods Shouldn't Bring Any Adolescents' World to a Full Stop. Period. An Online Survey of Adolescents' Experience of Menstruation



Courtney B. Munro^{1,2,3}, Emma N. Walker^{4,*}, Rachel Schembri^{3,5}, Dehlia Moussaoui¹, Sonia R. Grover^{1,2,3}

¹ Department of Pediatric and Adolescent Gynecology, The Royal Children's Hospital Melbourne, Parkville, Victoria, Australia

² Murdoch Children's Research Institute, Parkville, Victoria, Australia

³ Department of Pediatrics, University of Melbourne, Melbourne, Victoria, Australia

⁴ Department of Neurology, The Royal Children's Hospital Melbourne, Parkville, Victoria, Australia

⁵ Clinical Epidemiology and Biostatistics Unit, Murdoch Children's Research Institute, Parkville, Victoria, Australia

ABSTRACT

Study Objective: Few studies have explored what specific outcome measures contained in assessment tools for period and pelvic pain are most relevant to adolescents. Co-design is a valuable method of ensuring input from those with lived experience. The Longitudinal Study of Teenagers with Endometriosis Periods and Pelvic Pain in Australia (LongSTEPPP) Co-Design Periods Survey comprised an anonymous online survey of adolescents' experience of menstruation to inform patient-reported outcome measures for the larger 5-year project.

Methods: Adolescents aged 12-18 years whose periods had commenced at least 3 months previously and with demonstrated capacity to consent were invited to participate in an online survey. Recruitment was primarily via social media channels.

Results: Of the 1811 adolescents who participated, 85% reported that periods had a "moderate" or greater impact on their life. Pain (90.7%), heavy flow (56.2%), and worry about leakage (49%) were common reasons for missed activities. Menstrual symptoms were wide-ranging and included cramping, nausea, poor energy, and impacts on mood. When asked where adolescents sought assistance with their periods, 39.8% had seen their general practitioner, 21.3% their school nurse, and almost 1 in 10 had consulted a mental health practitioner (9.3%). To manage menstrual symptoms, heat packs (66.0%), over-the-counter medications (55.8%), and prescription medications (28.6%) were used.

Conclusion: We found a lack of menstrual health awareness in adolescents. Periods had a significant effect on their lives, and adolescents commonly missed activities. In managing menstruation, a wide range of practitioners were consulted. Nearly a third were prescribed medication to manage their periods. These findings have directed the longitudinal study as to how best to capture outcome measures that reflect the impact of periods on adolescents.

Key Words: Menstruation, Dysmenorrhea, Menstrual management, Menstrual health, Adolescents, Survey

Introduction

Dysmenorrhea is the most common gynecological condition, with an estimated prevalence of 42%-92% among individuals who menstruate.^{1,2} Although it can affect individuals across their whole lifespan,^{3,4} there is evidence that dysmenorrhea is usually more severe in adolescents than in adults.^{5,6} In addition, interference with daily life is particularly harmful in adolescence because more than half of adolescents who menstruate report school absenteeism due to their periods or reduced concentration or performance during menstruation.^{2,7}

Many of the assessment tools for endometriosis and period and pelvic pain have been designed and used by adult women, despite the recognition that symptoms usually begin in adolescence. There is an evidence gap in terms of what adolescent-specific questions should be explored, as

traditional assessment tools and period-tracking apps often focus largely on adult concerns, such as fertility and sexual health.

The Longitudinal Study of Teens with Endometriosis, Period and Pelvic Pain (LongSTEPPP) is an Australian study that tracks adolescents' development and trajectories of period and pelvic pain and endometriosis with current gynecological care. The study investigates the individual and family characteristics of each participant. By tracking participants over time, we aim to determine factors associated with pain, quality of life, mental health, and health utilization.

With increasing acknowledgement of research waste and recognition of priority-setting partnerships for research,⁸ we employed a model of co-design before embarking on the longitudinal study. The co-design study included a survey and focus groups. In this paper, we report the outcomes of the LongSTEPPP Co-design Periods Survey, whose primary outcome was to determine suitable patient-reported outcome measures (PROMs) for the longitudinal study to adequately represent the issues that adolescents with periods, period and pelvic pain, and endometriosis experience.

Secondary outcomes included the following:

* Address correspondence to: Emma Walker, MD, Royal Children's Hospital Melbourne, 50 Flemington Rd, Parkville VIC 3052; Phone (03) 9345 5522; Fax (03) 9345 6668

E-mail address: emma.walker@rch.org.au (Emma N. Walker).

- To ascertain how adolescents self-rated their knowledge about periods
- To describe period pain experienced by the adolescents in terms of location and severity
- To describe bleeding during a period
- To rate the frequency of associated symptoms coinciding with a period
- To describe from whom adolescents seek treatment and advice and what, if any, non-pharmacological methods they use for period management

Methods

Study Design

We conducted a cross-sectional survey of adolescents in Australia over 6 weeks from September to October 2021. Adolescents who demonstrated maturity and capacity to consent (through completion of a short capacity assessment quiz) and passed screening were able to complete the online “Periods survey.” Adolescents who completed the survey and their parents/guardians were additionally invited to participate in an online focus group of up to 1 hour duration (the results of which are discussed elsewhere). This project was approved by the Royal Children’s Hospital Melbourne (RCH) Ethics Committee (HREC 65911).

Study Population and Sites

The study population consisted of adolescents aged 12–18 years inclusive who had periods starting at least 3 months previously and who lived in Australia. Participants who met these criteria, regardless of their gender identity, were invited to participate. The study recruited participants via social media and outpatient clinics.

LongSTEPPP was advertised on Murdoch Children’s Research Institute, social media channels (Facebook and Instagram), and several period pain and endometriosis patient advocacy groups via their social media channels. LongSTEPPP was additionally promoted in outpatient clinics to patients of our gynecology service, which is part of a tertiary pediatric hospital in Australia. Those who did not have adequate English-language skills were excluded from the survey.

Data Collection

Survey questions were developed by the research team based on a literature review. The research team included experts in pediatric and adolescent gynecology and clinical research. Data were generated from survey responses. Survey data focused on period education, adolescents’ experience of period pain and period symptoms, treatments for period pain, and the perceived impact of periods on their life. The impact of periods on life was evaluated through missing school, work, sport, activities, and social events and rated on a 0–10 scale (0 being not at all, 5 moderate, and 10 strong). The survey was anonymous, comprised 24 questions, and took approximately 20 minutes to complete. Study data were collected and managed using REDCap electronic data capture tools hosted at MCRI.

Data Analysis

Proportions were used to describe categorical data. Means and standard deviations or medians and interquartile ranges were used to describe continuous data that were normally distributed and skewed, respectively. All data analyses were completed using Stata version 17.0.

Results

Of the 2362 people who were screened, 1811 adolescents met the inclusion criteria. Most participants were recruited via social media (97%) and the remainder via clinics. Not all survey questions were mandatory; thus, there was variation in the number of responses.

The average age of survey participants was 15.7 years (SD 1.4). The average age of onset of menses onset was 12.1 years (SD 1.3 years) and more than 30% experienced menarche before 12 years. Most adolescents in the survey (93.2%) had experienced at least 10 periods.

Knowledge and Education

In a self-report of their own perceived knowledge of periods, 77% of participants felt that they “really understood what a period is,” whereas 22% felt that they knew “a little bit, but not enough,” and only 1% felt that they did not know much about periods.

Adolescents gained information about menstruation from discussions with their mothers (73%) or health classes in primary (61%) or high school (71%). Less common sources of information included period education apps or programs (33.5%), conversations with other female family members or friends (28.1%), and conversations with fathers (6.7%).

Period Pain and Other Symptoms

Using a pictorial diagram, referred to as the “pain doll,” adolescents were asked where they experienced pain around the time of their period. A Likert scale was utilized where 0 = no pain, 5 = moderate pain, and 10 = worst pain. Adolescents were most impacted by pain in the regions classified as central lower abdomen (average pain score 7.1/10) and central pelvic, pubic, genital (6.2/10), lower back, and right and left lower abdomen (each 5.6/10).

Table 1 summarizes the frequency of symptoms experienced with menstruation in descending frequency. Cramping was the most frequent symptom occurring in 84.8% of participants, but fatigue, mental health, and gastrointestinal symptoms were also highly prevalent.

On a 10-point scale, adolescents rated the severity of their period pain “at its worst” (8.7/10) and “on average” (5.8/10). Less than a quarter (24.3%) of adolescents rated their average menstrual pain as less than 5/10, and more than 1 in 5 (22.2%) rated their average pain as 8/10 or higher.

Adolescents were asked to rate their bleeding, selecting from the descriptors spotting or light, medium, or heavy bleeding. Bleeding during an “average” period was

Table 1
Symptoms Associated with Periods and Their Frequency

Symptoms	Percentage
Menstrual cramps	84.8
Low energy	83.2
Tiredness	83.2
Bloating	80.6
Moodiness	80.1
Cravings	78.2
Exhaustion	77.6
Acne/pimples	77
Nausea	75.4
Stress	74.8
Anxiety	73.6
Depression	73.2
Headache	72.9
Difficulty sleeping	70
Loss of appetite	69.4
Diarrhea	58.6
Constipation	53.5
Migraine	44
Vomiting	31
Fainting	22.4

described as heavy by 17% of adolescents, and nearly 80% reported heavy bleeding when at its worst.

Treatment and Management of Period Pain

Adolescents consulted a range of practitioners and services for assistance in managing their periods (Table 2). Most frequently reported were general practitioners (GPs) (39.8%); nurses, including school nurses (21.3%); and pharmacists (15.6%). More than 1 in 3 (34.4%) had not consulted anyone.

Non-prescription methods for menstrual symptom management were commonly used. Most adolescents used heat packs (66%) and over-the-counter medications (55.8%), and more than a quarter used exercise (27%) or prescription medication (28.6%). Paracetamol was used by 44% of adolescents and NSAIDs by 46%, and 18% of participants used both medications. Adolescents who reported more severe menstrual pain (those who rated their worst pain as 6/10 or higher) were equally as likely to use NSAIDs as they

Table 2
Practitioners Consulted for Management of Menstrual Symptoms

Practitioner consulted for management of periods	Percentage
General practitioners	39.8
None of the listed practitioners	34.4
Nurse/School nurse	21.3
Pharmacist	15.6
Gynecologist	9.6
School counsellor/counsellor/psychologist	9.3
Pediatrician (Children's doctor)	7.2
Emergency	7.0
Pediatric/Adolescent gynecologist	3.8
Chiropractor	3.4
Dietician	3.2
Physiotherapist	2.9
Naturopath	2.7
Pain specialist	2.2
Acupuncturist	1.4
Other	1.3
Chinese medicine doctor	1.3

Table 3
Non-prescription Methods for Menstrual Management*

Period pain management used	Percentage
Heat packs	66.0
Pharmacy or supermarket medication	55.8
Prescribed medicines	28.6
Exercise	27.0
Chamomile/herbal tea	18.6
Yoga	8.0
Meditation	7.1
Nothing	5.4
Other	2.7
Acupuncture	0.6

* Percentages do not amount to 100%, as adolescents could select multiple responses.

were to use paracetamol. Table 3 lists the frequency of non-prescription methods used for managing menstruation.

Over a quarter of the study population were prescribed medications to assist with their menstrual symptoms (517 adolescents, 28.6%). For the cohort who were prescribed medications, most prescriptions (75.4%) were for the combined oral contraceptive pill. Other prescriptions were for antifibrinolytics (35.8%), opioid-containing analgesia (24.8%), other hormonal medications (such as medroxyprogesterone injection, etonogestrel implant, levonorgestrel intra-uterine device, vaginal ring, the progesterone-only pill) (22.8%), and other pain-modulating medications, including amitriptyline, duloxetine, gabapentin, and more (19.2%).

Impact of Menstruation

Most adolescents (85%) rated menstruation as having a “moderate” or even greater impact on their life. The average impact score was 6.8 on a 10-point scale, with 14% of adolescents reporting a maximum impact score of 10 (see Fig. 1).

Most adolescents (77.7%) reported missing activities such as school, work, or sports due to menstruation, with a small but significant number (12.1%) missing 3 or more activities each month (see Fig. 2).

Of the adolescents who missed activities due to menses, the most frequently cited reasons were pain (90.7%), heavy flow (56.2%), concern about leakage (49%), and associated period symptoms (48.1%). A lack of access to sanitary products was cited as the reason for missing activities in 5.7% of adolescents.

When asked what they would like to change relating to their periods, adolescents cited pain (70.8%), nausea and associated symptoms (49.8%), heaviness (47.6%), frequency (41.5%), acne (40%), and missing activities (30.4%).

PROMs for the Longitudinal Study

The results of this survey highlighted which PROMs would best capture the experience of adolescents with period and pelvic pain. Considering the high prevalence of pain in this cohort, age-appropriate pain questionnaires that capture persistent pain and that additionally capture the parent/guardian rating of their adolescent's pain and

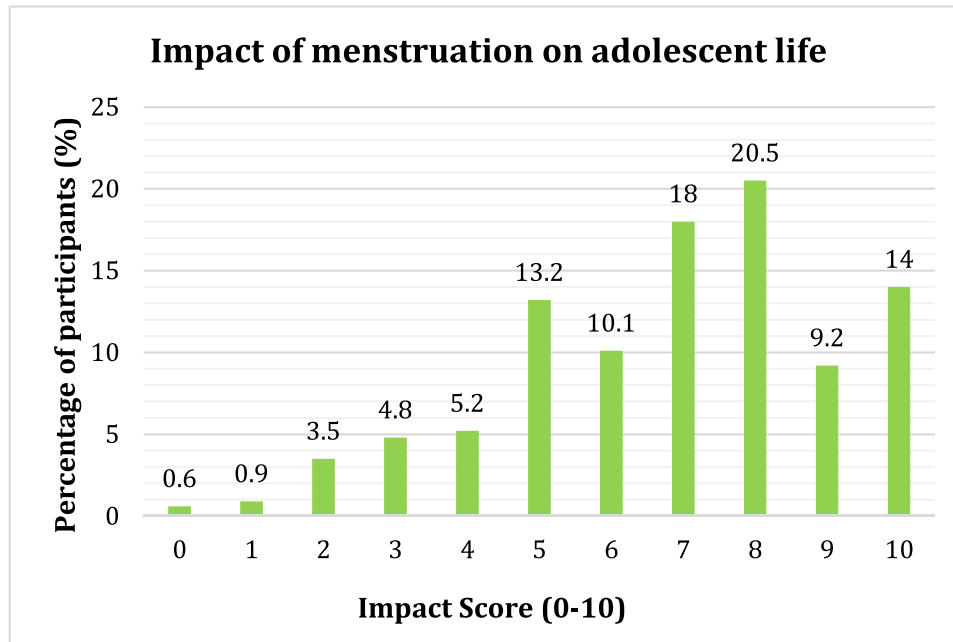


Fig. 1. Self-reported impact scores.

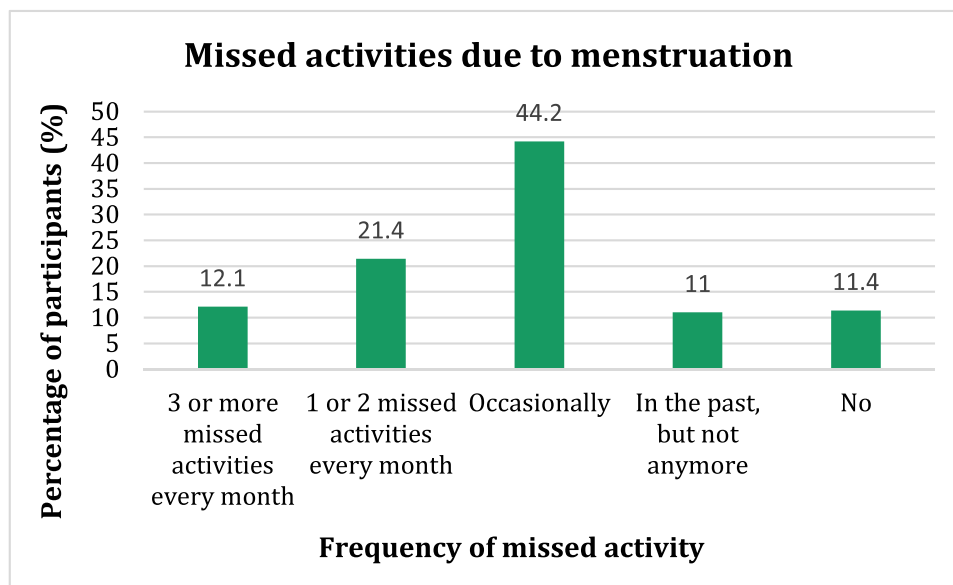


Fig. 2. Frequency of missed activities due to menstruation.

the impact on the family unit were selected. Screening for depression and anxiety was included in the longitudinal study because of the high proportion of participants reporting mood disturbances and having consulted a mental health practitioner. Data linkage with the Medicare Benefits Scheme to evaluate GP, specialist, and allied health visits was implemented considering from whom adolescents seek assistance in managing menstruation. We found that a large number of questions about menstrual symptoms could be reduced by grouping to body system (eg, gastrointestinal complaints) to reduce the survey burden. Questions that permitted free-text answers were reviewed for common themes, and multiple-choice boxes were created to streamline questions in the longitudinal Periods Survey.

Discussion

The LongSTEPPP Co-design Periods Survey captured the experience of menstruation in Australian adolescents aged 12–18 years, including sources of education about menstruation, typical symptoms, and the impact of menstruation on their lives, as well as providing insight into adolescent management of periods. Substantial recruitment demonstrated by the participation of 1811 adolescents over 6 weeks illustrates that adolescents want to share their experience of periods.

Menstrual health has been recently defined as a “state of complete physical, mental and social well-being in relation to the menstrual cycle.”⁹ It implies that individuals receive valid and age-appropriate information about the menstrual

cycle, can care for their bodies during menstruation, can access appropriate treatment for menstrual disorders, live in a respectful environment without suffering exclusion associated with their periods, and can participate in daily activities regardless of their menstrual cycle.⁹

Self-reported knowledge about periods was high, with 77.1% of participants reporting that they feel they “really understand” what a period is. Although this survey did not objectively measure participants’ knowledge, adolescent knowledge about menstruation and menstrual concerns will be further assessed in the longitudinal study. Low rates of menstrual health literacy have been reported in high-income as well as low-income countries.^{10,11} Our survey’s participants reported that they most often learned about menstruation through discussions with their mothers (73.2%) or other female friends or family members (28.1%). Most had received formal education about menstruation from a health class in secondary (70%) or primary (61%) school, although we did not clarify in this survey when education was first received. With the average age of menarche in this study at 12.1 years, typically the age of a final year primary school student in Australia, it is possible that many adolescents experience menarche before receiving education on this topic at school. Adolescents in previous studies reported dissatisfaction with school-based menstrual health education,¹² with criticisms including the timing of education being too late, the content taught being too focused on biology and “the cause rather than effect,”¹³ and not meeting their needs.¹⁴ A lack of high-quality and timely menstrual education can result in diagnostic delays and poor management of menstrual health disorders.¹³

Pain was the most common menstrual symptom in our cohort, with a prevalence of 84.2%, similar to previously reported rates of dysmenorrhea in adolescents.^{2,15,16} Looking forward, we have selected age-appropriate pain questionnaires that capture persistent pain, from the perspective of the child or adolescent and their parent/guardian. The rate of gastrointestinal and mental health symptoms associated with periods was extremely high, with approximately three-quarters of the participants reporting moodiness, depression, and anxiety symptoms with their periods. Almost 1 in 10 participants in our survey consulted with a mental health clinician (such as a counsellor or psychologist) due to concerns surrounding their period. Numerous studies have demonstrated the negative influence of dysmenorrhea on depression and anxiety scores in adolescents.^{17–19} In one study, adolescents with menstrual problems were found to have lower psychosocial health scores than adolescents with cystic fibrosis or juvenile arthritis.²⁰ Although this survey did not formally measure quality of life to ensure brevity of the survey, we will be using established quality-of-life screening measures in the longitudinal study. Our findings highlight the significant burden of menstruation on adolescent mental health and emphasize an area that requires further attention and exploration. The longitudinal study will explore in greater depth the characteristics and frequency of menstrual symptoms and hopes to identify predisposing factors that may predict more severe symptoms. It has been shown that adolescents experience a broad range of menstrual symptoms beyond dysmenorrhea,

including nausea, vomiting, changes in bowel movement, sleep issues, headaches, and mood disturbances.^{1,15} However, the extent of symptoms associated with menstruation is often under-acknowledged, with low levels of menstrual health literacy in adolescents.¹⁴

Paracetamol was widely used in our cohort, at a rate similar to NSAIDs (44% vs 46%, respectively), despite evidence that NSAIDs are more effective than paracetamol in treating period pain.²¹ In another Australian study reporting similar findings, it was additionally reported that adolescents often used lower-than-recommended doses of paracetamol or ibuprofen and that most adolescents commenced analgesia after, rather than before, the onset of pain.¹⁰ Our survey found that, of adolescents who had been prescribed medication from a practitioner for their menstrual symptoms, 1 in 4 (24.8%) had been prescribed an opioid-containing medication. Opioid analgesia is not recommended for use in chronic non-cancer pain.^{22,23} Most adolescents in our survey used non-pharmacological measures to help manage menstrual symptoms, including heat packs, exercise, yoga, and meditation, consistent with a previous review that found that 51.8% of young people used complementary, traditional, or non-pharmacological interventions.²⁴ The longitudinal survey will assess who seeks assistance with managing periods and from whom, as well as patterns of medication usage.

The impact of periods on adolescent life was significant, with 85% reporting that their periods had at least a “moderate” impact. Three-quarters of the cohort had missed out on activities in the past or present due to menstruation. Similar to that reported in other studies,¹⁵ pain was the most frequently cited reason for missing activities (90.7% in our study), followed by heavy flow (56.2%), concern about leakage (49%), and associated symptoms (48.1%). A lack of access to sanitary products was cited as the reason for missing activities in 5.7% of adolescents, a small but not insignificant proportion. In our cohort, a third of adolescents missed school, work, or other activities on at least 1 day each month because of their periods. This proportion is higher than previously reported²⁵ and concerns education access and gender equity. Data in the literature report that this burden does not improve over time: A survey conducted among more than 40,000 women aged 15–45 showed that 38% of them were not able to perform their regular daily activities during their periods.²⁶

Despite this significant burden on their life, more than a third of adolescents had never consulted any of the listed health practitioners for assistance. It is postulated that the widely recognized societal “normalization” of menstrual pain may contribute to this incongruence²⁴ and that stigma and reluctance to discuss menstruation with health care practitioners are also implicated. A recent qualitative study identified 9 main reasons for not seeking care in women with dysmenorrhea, including assuming that symptoms are normal, preferring to self-manage symptoms, having limited resources, thinking providers would not offer help, being unaware of treatment options, considering symptoms to be tolerable, being wary of available treatments, feeling embarrassed or afraid to seek care, and not seeking health care in general.²⁷ Approximately 40% of our cohort

had consulted their GP for management of periods, similar to that seen in a high school cohort study in 2010.¹⁵ One in 14 adolescents (7%) in our survey had presented to an emergency department seeking help for menstrual symptoms. In a small study of adolescents with dysmenorrhea, 28% sought help at an emergency service.¹⁷ These numbers are alarming in terms of resource allocation. Moreover, they highlight the degree of patient distress and demonstrate a lack of menstrual health awareness as to how to manage dysmenorrhea in the community or at a primary health care level.

Limitations

The main limitation of this study is its cross-sectional design, therefore inhibiting conclusions on the development and impact of menstrual symptoms over time. Dysmenorrhea and pelvic pain are generally considered chronic conditions and most often occur cyclically; therefore, longitudinal studies will better capture their evolution. The prospective longitudinal study, LongSTEP, for which this co-design survey was undertaken in preparation, aims to better understand the development of period and pelvic pain in adolescents over 5 years, including diagnosis of endometriosis. In addition, most participants were recruited via social media and may not be representative of the broader adolescent population. Individuals experiencing dysmenorrhea or other menstrual issues may have had more motivation to partake in the survey. Access to technological devices and the internet, as well as digital health literacy, may have impeded some individuals from participating in the survey. Limited information was collected on the sociodemographic characteristics of the participants because this was an anonymous survey completed by adolescents without parental consent. Therefore, representativity of the participants compared with the general population is unknown. Furthermore, although the survey questions explored the impact of periods on adolescents' lives, they did not include validated scores to assess specifically quality of life. We focused on the experience of the adolescents in this study and did not consider the parent/guardian's role and influence in supporting the adolescents to manage their periods.

Conclusion

This survey showed a high prevalence of dysmenorrhea and menstrual symptoms, including gastrointestinal symptoms and mental health issues among more than 1800 adolescents aged 12–18 years old in Australia. Despite periods significantly impacting the adolescent quality of life, more than a third of participants had never consulted any professional for the management of their menstrual symptoms. Most adolescents used non-pharmacological options as well as over-the-counter medications.

By virtue of this study, we have highlighted some of the gaps in menstrual health awareness and, importantly, management of periods for Australian adolescents. Co-design has enabled us to orientate future research on periods and pelvic pain to capture PROMs that are of priority for ado-

lescents, such as pain and mental health, to ensure periods do not bring any adolescents' world to a full stop. Period.

Conflicts of Interest

The authors have no conflicts of interest to declare.

Acknowledgements

The LongSTEP Project is funded by a Medical Research Future Fund (MRFF) Endometriosis Research Grant (MRFF #1201159), Australian Government Department of Health and Aged Care. Study data were collected and managed using REDCap electronic data capture tools hosted at Murdoch Children's Research Institute. DM is supported by a grant from the Fonds de Perfectionnement, Geneva University Hospitals, Geneva, Switzerland, and the Swiss National Science Foundation (Postdoc. Mobility grant number P400PM_199338). An abstract of this study was presented at the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) Annual Scientific Meeting in the Gold Coast, Queensland, Australia, in October 2022.

References

- Hu Z, Tang L, Chen L, et al: Prevalence and risk factors associated with primary dysmenorrhea among Chinese female university students: a cross-sectional study. *J Pediatr Adolesc Gynecol* 2020; 33:15–22.
- Armour M, Ferfolja T, Curry C, et al: The prevalence and educational impact of pelvic and menstrual pain in Australia: a national online survey of 4202 young women aged 13–25 years. *J Pediatr Adolesc Gynecol* 2020; 33:511–18.
- Fernandez H, Barea A, Chanavaz-Lacheray I: Prevalence, intensity, impact on quality of life and insights of dysmenorrhea among French women: a cross-sectional web survey. *J Gynecol Obstet Hum Reprod* 2020 Aug 8; 10:1889.
- Gagnon MM, Moussaoui D, Gordon JL, et al: Dysmenorrhea across the lifespan: a biopsychosocial perspective to understanding the dysmenorrhea trajectory and association with comorbid pain experiences. *Pain* 2022; 163:2069–75.
- Knox B, Ong YC, Bakar MA, Grover SR: A longitudinal study of adolescent dysmenorrhoea into adulthood. *Eur J Pediatr* 2019; 178:1325–32.
- Pitts MK, Ferris JA, Smith AMA, et al: Prevalence and correlates of three types of pelvic pain in a nationally representative sample of Australian women. *Med J Aust* 2008; 189:138–43.
- Connolly H: Menstruation matters – The impact of menstruation on wellbeing, participation and school attendance [Internet]. South Australian Commissioner for Children and Young People 2021; 2020. Available at <https://www.ccyip.com.au/wp-content/uploads/2022/03/Menstruation-Matters.pdf>.
- Taylor CJ, Huntley AL, Burden J, et al: Research priorities in advanced heart failure: James Lind alliance priority setting partnership. *Open Heart* 2020; 7:e001258.
- Hennegan J, Winkler IT, Bobel C, et al: Menstrual health: a definition for policy, practice, and research. *Sex Reprod Health Matters* 2021; 29:31–8.
- Armour M, Hyman MS, Al-Dabbas M, et al: Menstrual health literacy and management strategies in young women in Australia: A national online survey of young women aged 13–25 years. *J Pediatr Adolesc Gynecol* 2021; 34:135–143.
- Hennegan J, Swe ZY, Than KK, et al: Monitoring menstrual health knowledge: awareness of menstruation at menarche as an indicator. *Front Glob Womens Health* 2022; 3:832549.
- Li AD, Bellis EK, Girling JE, et al: Unmet needs and experiences of adolescent girls with heavy menstrual bleeding and dysmenorrhea: a qualitative study. *J Pediatr Adolesc Gynecol* 2020; 33:278–84.
- Curry C, Ferfolja T, Holmes K, et al: Menstrual health education in Australian schools. *Curr Stud Health Phys Educ* 2022 Jun 7:1–14.
- Holmes K, Curry C, Null S, et al: Adolescent menstrual health literacy in low, middle and high-income countries: a narrative review. *Int J Environ Res Public Health* 2021; 18:2260.
- Parker M, Sneddon A, Arbon P: The menstrual disorder of teenagers (MDOT) study: determining typical menstrual patterns and menstrual disturbance in a large population-based study of Australian teenagers: The MDOT study. *BJOG Int J Obstet Gynaecol* 2010; 117:185–92.
- Randhawa AE, Tuft-Hewett AD, Weckesser AM, et al: Secondary school girls' experiences of menstruation and awareness of endometriosis: a cross-sectional study. *J Pediatr Adolesc Gynecol* 2021; 34:643–8.

17. Sahin N, Kasap B, Kirli U, et al: Assessment of anxiety-depression levels and perceptions of quality of life in adolescents with dysmenorrhea. *Reprod Health* 2018; 15:13.
18. Balık G, Ustüner I, Kağıtçı M, Sahin FK: Is there a relationship between mood disorders and dysmenorrhea? *J Pediatr Adolesc Gynecol* 2014; 27:371–4.
19. Gagaa T, Tkeshelashvili B, Gagaa D, Mchedlishvili N: Assessment of anxiety and depression in adolescents with primary dysmenorrhea: a case-control study. *J Pediatr Adolesc Gynecol* 2013; 26:350–4.
20. Nur Azurah AG, Sanci L, Moore E, Grover S: The quality of life of adolescents with menstrual problems. *J Pediatr Adolesc Gynecol* 2013; 26:102–8.
21. Marjoribanks J, Ayeleke RO, Farquhar C, Proctor M: Nonsteroidal anti-inflammatory drugs for dysmenorrhoea. *Cochrane Database Syst Rev* 2015; 2015:CD001751.
22. Statement regarding the use of opioid analgesics in patients with chronic non-cancer pain [document on the Internet]. Australian and New Zealand College of Anaesthetists; © 2021 [cited 2023 02 14]. [Internet]. Available at: [https://www.anzca.edu.au/getattachment/7d7d2619-6736-4d8e-876e-6f9b2b45c435/PS01\(PM\)-Statement-regarding-the-use-of-opioid-analgesics-in-patients-with-chronic-non-cancer-pain#page=](https://www.anzca.edu.au/getattachment/7d7d2619-6736-4d8e-876e-6f9b2b45c435/PS01(PM)-Statement-regarding-the-use-of-opioid-analgesics-in-patients-with-chronic-non-cancer-pain#page=).
23. Evans S: Management of persistent pelvic pain in girls and women. *Aust Fam Physician* 2015; 44:454–9.
24. Armour M, Parry K, Al-Dabbas MA, et al: Self-care strategies and sources of knowledge on menstruation in 12,526 young women with dysmenorrhea: a systematic review and meta-analysis. *PloS One* 2019; 14:e0220103.
25. Söderman L, Edlund M, Marions L: Prevalence and impact of dysmenorrhea in Swedish adolescents. *Acta Obstet Gynecol Scand* 2019; 98:215–21.
26. Schoep ME, Nieboer TE, van der Zanden M, et al: The impact of menstrual symptoms on everyday life: a survey among 42,879 women. *Am J Obstet Gynecol* 2019; 220:569 e1-569.e7.
27. Chen CX, Shieh C, Draucker CB, Carpenter JS: Reasons women do not seek health care for dysmenorrhea. *J Clin Nurs* 2018; 27:e301–8.