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Menstrual health and period poverty among young people who menstruate in the Barcelona metropolitan area (Spain): protocol of a mixed-methods study.

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4 **Barcelona metropolitan area (Spain): protocol of a mixed-methods study.**
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7 Medina-Perucha, L.¹, Jacques-Aviñó, C.^{1,2}, Valls-Llobet, C.³, Turbau-Valls, R.⁴, Pinzón, D.⁵,
8 Hernández, L.⁶, Briales Canseco, P.⁷, López-Jiménez, T.^{1,2}, Solana Lizarza, E., Munrós Feliu,
9 J.⁶, Berenguera-Ossó, A.^{1,2,7}
10
11

12
13 ¹ Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
14 (IDIAPJGol), Barcelona, Spain.
15

16
17 ² Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Vallès), Spain.
18

19
20 ³ Centro de Análisis y Programas Sanitarios (CAPS), Barcelona, Spain.
21

22
23 ⁴ Institut Català de la Salut (ICS), Barcelona, Spain.
24

25
26 ⁵ SomiArte Taller, Barcelona, Spain.
27

28
29 ⁶ La Caravana Roja, Murcia, Spain.
30

31
32 ⁷ Consejería de Educación, Comunidad de Madrid, Madrid, Spain.
33

34
35 ⁸ Atenció a la Salut Sexual i Reproductiva (ASSIR) Muntanya/La Mina. Institut Català de la
36 Salut (ICS), Barcelona, Spain.
37

38
39 ⁹ Departament d'Infermeria, Universitat de Girona, Girona, Spain
40
41
42
43
44

45 **Corresponding author**
46

47 Dr Laura Medina-Perucha

48 Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
49 (IDIAPJGol)
50

51 Gran Via de les Corts Catalanes, 591, attic

52 08007 Barcelona (Spain)

53 lmedina@idiapjgol.info

54 (0034) 93 482 46 17
55
56
57
58
59

60 **Word count:** 3,625.

ABSTRACT

Introduction. The importance of menstrual health has been historically neglected, mostly due to taboos and misconceptions around menstruation and androcentrism within health knowledge and health systems around the world. There has also been a lack of attention on “period poverty”, which refers to the financial, social, cultural and political barriers to access menstrual products and education. The main aim of this research is to explore menstrual health and experiences of period poverty among young people who menstruate (YPM). **Methods and analysis.** This is a convergent mixed-methods study which will combine a quantitative transversal study to identify the prevalence of period poverty among YPM (11-16 years old), and a qualitative study that will focus on exploring menstruation-related experiences of YPM and other groups (young people who do not menstruate (YNM); primary healthcare professionals; educators; and policymakers). The study will be conducted in the Barcelona metropolitan area between 2020 and 2021. Data will be primarily collected at schools. Descriptive statistics will be performed for each variable to identify asymmetric distributions and it will be evaluated differences among groups. Thematic analysis will be used for qualitative data analyses. **Ethics and dissemination.** Several ethical issues have been considered, especially as this study includes the participation of underage participants. The study has received ethical approval by the Research Ethics Committee (IDIAPJGoL) [19/178-P]. Research findings will be disseminated to key audiences, such as YPM, YNM, parents/legal tutors, health professionals, educators, youth (and other relevant) organisations, general community members, stakeholders and policymakers, and academia.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This research will address an important gap in research on menstrual health from a gender and intercultural approach.
- A mixed-methods design will allow for the integration of quantitative (descriptive) and qualitative (in-depth) data.
- This study includes collaborations with a variety of key actors, following Responsible and Research Innovation (RRI) guidelines.
- The dissemination strategy includes a variety of audiences and will be co-created with study participants.
- The combination of data collection methods, and using a RRI and participatory research approach will require increased resources and time.

KEYWORDS

Menstrual health; period poverty; health services; education; young people

INTRODUCTION

Research on menstrual health is still scarce. Moreover, most research has been conducted in low-income countries,[1–3], neglecting its need in high-income regions. Menstrual health is associated with the access of people who menstruate to accurate information on menstruation, menstrual products and clean and safe wash facilities. Also, with experiences related to the menstrual cycle and the use of menstrual health as a tool for health promotion. A good menstrual health also includes tackling menstruation-related taboos, stigma and discrimination[4]. Promoting menstrual health is key to reach gender equity and promote health among people who menstruate, and it has even been suggested that menstrual health should be incorporated as a vital sign,[5,6]. Despite a growing international commitment to focus on menstrual health, there is still much to be done[2]. In this study, we will focus on “people who menstruate” rather than “women” not to exclude those who have a menstrual cycle but are not women/do not identify as women (i.e., male transsexual or male transgender).

Activist-led movements have increased awareness on the negative impact that the cost of menstrual products, socio-cultural practices and views on menstruation have on women’s health and wellbeing. These movements aim at promoting a “menstrual culture” that demystifies the menstrual cycle and are based on feminist and socio-cultural paradigms. Together with some health professionals, activism in Spain is already suggesting body awareness and knowledge about one’s menstrual cycle as tools for health promotion. Menstrual health education is crucial to understand and improve how people who menstruate relate to their menstrual cycle,[4,7]. The role of the “menstrual products” and pharmaceutical industries in women’s menstrual health is however strong. It is precisely these companies the ones often delivering menstrual health education in schools in Spain. Considering these events enough for “menstrual health education” is questionable, as these companies rather focus on selling their products and medicalising menstruation instead of delivering high quality education on the menstrual cycle and the wide range of products available. In the meantime, many people who menstruate in Spain seem to still be unaware of how their menstrual cycle works and the relationship with their overall health.

Focusing on young people is crucial to understand their conceptions and experiences of menarche (first menstruation). Good health education among young people is a priority as their bodies are changing and leading to adulthood. As previously reported in a study by Plan International UK[4], it is essential that young people get access to menstrual health education, health services and products that protect their health and wellbeing. In this study, menstrual-related myths and taboos were prevalent among young people. Stigma and embarrassment were also still a reality for many girls as, for example, most girls did not feel comfortable discussing

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3 menstruation with their school teachers. Besides and very importantly, most girls explained how
4 they were unaware of what was happening and what to do when they first got their period[4].
5 Another reason to focus on children and adolescents is that they are vulnerable groups to
6 experiencing stigma, discrimination, and social and health inequities.
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10 Inequities between people who menstruate and people who do not menstruate are also to be
11 highlighted. These are for example visible through the (still prevailing) stigma and
12 discrimination towards people who menstruate and menstruation itself[4]. In line with this,
13 productivity loss due to presentism and absenteeism at schools and workplaces among people
14 who experience menstrual pain needs to be considered too[8]. Apart from the social and
15 financial impacts of productivity loss, social and health inequities among people who
16 menstruate (compared to people who do not menstruate) can be also explained when
17 menstruating is a source of social (e.g., normalisation of menstrual pain) and structural (e.g., not
18 being able to get sick leave for menstrual pain) sanctions.
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25 The menstrual cycle is not a health condition to be medicalised. However, this is not how it
26 seems to be conceived within society and healthcare systems. This project stems from an
27 opposition to the predominant androcentrism in health science and healthcare systems. The
28 concept of androcentrism refers to having men (male humans) as the reference, the norm and the
29 example for all humans. In the health context this has translated into the invisibilisation of
30 women, the female body and women's health in health science, policy and practice,[9–12]. As
31 briefly mentioned already, this project also questions the role of the industry (menstrual
32 products and pharmaceutical) in the medicalisation and socio-cultural conceptualisations of the
33 menstrual cycle and menstruation[9]. Instead, it is important that the menstrual cycle is
34 understood as a natural process that is associated with good health. This means that educating
35 society and professionals is a priority to promote health among young people who menstruate
36 (YPM). Increased education and a more positive conceptualisation of the menstrual cycle and
37 menstruation could help YPM being more aware of their bodies and health. In turn, this could
38 help encourage menstruators to care for their menstrual and general health, and aid the
39 identification of some health conditions such as endometriosis[13]. Improved education could
40 also lead the disassociation of menstruation and pain, and challenge myths and beliefs around
41 the menstrual cycle and the use of hormonal contraception. Last but not least, education could
42 reduce menstruation-related stigma and discrimination.
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54 One aspect of menstrual health is the access to menstrual products. Research in other countries,
55 such as Uganda[3] and the United Kingdom[4] has highlighted experiences of *period poverty*
56 among young women. This term refers to barriers (financial, social, cultural and political) in
57 accessing menstrual products, menstrual education and access to healthcare services. Plan
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3 International UK[4] recently explored period poverty in a high-income country through focus
4 groups with 64 adolescents. Their report revealed that 1 in 10 adolescents experienced period
5 poverty in the United Kingdom. However, and to our knowledge, there have been no attempts to
6 identify the prevalence of period poverty at a community or population level.
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10 Despite social movements to promote menstrual culture and reduce taxes of menstrual products
11 in the last few years, menstrual health in Spain continues to be ignored. This is reflected in
12 national and regional public health strategies, in which menstrual health is never present. Even
13 if 27,7% of children were at risk of poverty in Catalunya in 2017[14], experiences of period
14 poverty have not been explored. Social, cultural, financial and political barriers to promote
15 menstrual health, tackle stigma and discrimination and eliminate period poverty have also been
16 overlooked. Besides, menstrual products are not considered a necessity by law in Spain, holding
17 a 10% tax (Spanish Law 37/1992, 28th December 2018). Despite in October 2018 the Spanish
18 government guaranteed that tax retentions on menstrual product should be reduced to 4%, this
19 tax reduction has not yet been applied.
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27 For the reasons stated above, this study will mainly explore menstrual health and experiences of
28 period poverty among YPM. We also hope to identify barriers and facilitators that could
29 promote menstrual health through the access of good-quality education and healthcare. Also, to
30 explore ways to improve menstrual health experiences in YPM and reduce period poverty. This
31 study will provide recommendations for future research, policy and practice, aiming at
32 addressing social inequities of health in YPM (and especially amongst those that may be
33 experiencing period poverty). The views of young people who do not menstruate and
34 professionals will also be considered in this project. Through this research, our team aims to
35 start a line of research on menstrual health and period poverty in the area of Barcelona, hoping
36 to scale the study up to other areas in Spain.
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43 **AIMS AND OBJECTIVES**

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46 This project aims to explore menstrual health and experiences of period poverty among young
47 people who menstruate (YPM) (11-16 years old). The study will be conducted in the Barcelona
48 metropolitan area between 2019 and 2021.
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51 The objectives will be:

- 52 1. To identify the prevalence of period poverty in YPM.
- 53 2. To explore socio-cultural understandings of menstruation and menstrual health in YPM,
54 young people who do not menstruate (YNM) of the same age, health professionals,
55 teachers, activists and policymakers.
- 56 3. To explore experiences of menstruation and period poverty among YPM.
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4. To explore menstruation-related stigma and discrimination.
5. To identify barriers and facilitators to promote menstrual health, and to access education and healthcare for menstrual health.
6. To identify opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.
7. Provide recommendations for future research, policy and practice.

METHODS AND ANALYSIS

The study will be coordinated by the research team at the [Research Centre name]. However, a working group of women that includes health professionals, educators, youth representatives and menstrual health activists has been composed, considering Responsible Research and Innovation (RRI) guidelines[15]. The members of the working group will regularly contribute to the development of the project attending regular meetings. They will also be involved in developing key study materials (e.g., study protocol, non-validated questionnaire, topic guides) and writing research publications and other dissemination materials. Taking this Responsible and Research Innovation (RRI) approach will be key to conducting inclusive research not only *for* but *with* the community and other key agents. This research is based on gender-based and intercultural approach.

Study design

This research is a convergent mixed-methods study that will include a quantitative study and a qualitative study. It will start in September 2019 and end in September 2021. A Gantt Chart is provided in Figure 1.

Quantitative study

This is a cross-sectional questionnaire-based study. A non-standardised questionnaire will be mainly used to calculate the composite main variable “period poverty”. Other variables that will be measured, and that will contribute to develop the variable “period poverty” will be: 1) use of menstrual products, 2) financial (and other) barriers to access menstrual products, 3) use of hormonal contraception, 4) period pain and menstrual disorders, 5) mental health, 6) access to menstrual health consultations, 7) menstruation-related school absenteeism, 8) menstruation-related interference on school performance and other activities, 9) menstruation-related stigma and discrimination, 10) access to menstrual health education.

Sociodemographic data will also be collected (age, school, primary healthcare centre, deprivation index, household composition). All variables and sociodemographic data (except for the deprivation index) will be collected using the self-reported questionnaire. The deprivation

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3 index will be calculated based on available databases such as the MEDEA deprivation
4 index[16].
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6 7 Qualitative study 8

9 There will be three phases of data collection for the qualitative study:
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11 Phase I. Semi-structured interviews using photo elicitation techniques[17]: 20 YPM will take
12 part in semi-structured interviews using photo elicitation techniques. These interviews will take
13 place in schools making sure that participants are in a familiar and comfortable environment.
14 The interviews will focus on objectives 2-4.
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17 Phase II. Group discussions: Nine group discussions (three with YPM only, three with YNM,
18 and three mixed) will be run with an estimate of 45 YPM and 45 YNM. Participants for the
19 group discussions will be stratified by age (11-12 years old, 13-14 years old, and 15-16 years
20 old). Group discussions will be conducted within the natural context of a classroom.
21 Observation and group discussion techniques will be used to collect data. Objectives 2-6 will be
22 covered in this phase of data collection.
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25 Phase III. World Café[18]: Health professionals, teachers, policymakers, activists and youth
26 representatives will be invited to participate in a world café. There will be a maximum of 12
27 professionals in the session. The aim of phase III will be to mainly address objectives 4-6.
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30 31 32 33 34 **Materials**

35 36 37 Quantitative study 38

39 A non-standarised questionnaire will be devised for this study by the working group. Several
40 meetings will be organised to work on the development of the variables and the questionnaire,
41 following the guidance of previous research and published work on questionnaire design[19].
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44 45 46 Qualitative study 47

48 Topic guides will be developed for each phase of the qualitative study. Developing the topic
49 guides will be a collaborative process between the research team and the working group. The
50 topic guides will be based on the aims of this research, previous evidence, the team's expertise
51 and data previously collected for this study (for Phase II and Phase III).
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54 The main topic areas will be 1) socio-cultural understandings of menstruation and menstrual
55 health; 2) personal experiences of menstruation; 3) experiences of period poverty; 4)
56 experiences of menstruation-related stigma and discrimination; 5) barriers and facilitators to
57 promote menstrual health, and to access education and healthcare for menstrual health; and 6)
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opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.

Participants

There will be different groups of participants: YPM, YNM, and professionals (health professionals, teachers, policymakers, activists, and youth representatives).

Participant selection

For both the quantitative and qualitative studies recruitment will be non-probabilistic (as not all schools and individuals will have the same probability of being recruited) and purposive (as schools and participants will be selected based on the requirements of the study).

YPM and YNM will be recruited from (public, private and charter) schools in the Barcelona metropolitan area. Schools will be identified to be representative of the socioeconomic diversity in the Barcelona metropolitan area. The MEDEA index[16] will be used to determine the socioeconomic level of each school. Considering that around 18 schools will be recruited, we will aim to recruit three or four schools of each of the five MEDEA levels. First, permission will be requested from the council of each municipality where recruitment will take place. Then, schools will be contacted and informed about the study, based on a list of schools in the Barcelona metropolitan area and professional contacts of the working group of school staff. The researcher team will organise meetings at participating schools to inform the staff and children about the study. Information sheets and consent forms will be given to children to inform and ask parents and legal tutors consent to participate. An adapted information sheet will be given to minors, apart from the information sheets and consent forms for parents and legal tutors. Parents and legal tutors will be asked to return a signed copy of the consent form if they are willing for their children to participate. This procedure will be used for each stage of the project involving children (quantitative study and Phase I and II of the qualitative study).

In Phase III of the qualitative study, professionals will be recruited using snowballing techniques and through identifying key informants for this study. Diversity in the professionals' background and expertise will be considered to ensure diversity in the discourses. Participants will be required to sign an informed consent to take part in the study.

Inclusion and exclusion criteria

The inclusion and exclusion criteria are available in Tables 1-3.

Table 1

Inclusion and exclusion criteria of young people who menstruate (YPM)

Young people who menstruate (YPM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have not (and will not) menstruate
Have (or will) menstruate	Cannot understand and/or provide consent
Have given their consent to participate	Cannot communicate well in Catalan or Spanish
Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 2

Inclusion and exclusion criteria of young people who do not menstruate (YNM)

Young people who do not menstruate (YNM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have (or will) menstruate
Have not (and will not) menstruate	Cannot understand and/or provide consent
Have given their consent to participate	Cannot communicate well in Catalan or Spanish
Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 3

Inclusion and exclusion criteria of professionals

Professionals	
Inclusion criteria	Exclusion criteria
Have experiences working in relevant areas of/for menstrual health	Do not have experiences working in relevant areas of/for menstrual health
Have signed the consent form	Cannot understand and/or provide consent
Have a good command of Catalan or Spanish	Cannot communicate well in Catalan or Spanish

Sample size

Quantitative study

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3 A total of 871 YPM will be recruited for the quantitative study in 18 schools in the Barcelona
4 Metropolitan area. The sample size is based on power calculations considering the composite
5 variable “period poverty” as the main variable. Maximum indetermination of the main variable
6 (proportion of 50%) was assumed. It was also considered that there are 53,354 young girls
7 attending schools in the Barcelona metropolitan area between 11 and 16 years old. These
8 assumptions were in order to obtain a precision of 5%, expecting that 50 young girls of each
9 participating school will take part in the study. Also, due to the effect of the design an interclass
10 correlation of 0,026 [3] will required a minimum of 871 participants (and 18 schools). These
11 estimates have been calculated assuming an alfa risk of 5%. PASS software was used for the
12 sample size calculations [PASS 15 Power Analysis and Sample Size Software (2017). NCSS,
13 LLC. Kaysville, Utah, USA].
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20 21 Qualitative study

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23 Sixty-five YPM, 45 YNM and 12 professionals (health professionals, teachers, policymakers,
24 activists, and youth representatives) will be recruited for the qualitative study. The sample size
25 will be dependent on data saturation.
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29 **Data analysis plan**

30 31 Quantitative study

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33 Descriptive statistics will be used for each variable to identify asymmetric distributions. The
34 continuous variables will be analysed as mean (SD) or median (25th and 75th centiles) based on
35 the normality/non-normality of the distribution, and categorical variables will be described as
36 percentages. To evaluate differences among groups, the appropriate statistics will be applied
37 based on the type of variable and their distribution (χ^2 , F-distribution, Student’s t-distribution,
38 analysis of variance, Mann-Whitney U and Kruskal-Wallis). To estimate the magnitude of the
39 associations between the selected variables and period poverty, prevalence ratios and their 95%
40 confidence intervals will be computed by general linear models (Poisson regression models with
41 robust variance and logistics models).
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49 50 Qualitative study

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52 Qualitative data will be analysed using Thematic Content Analysis[18]. Once the audio
53 recordings are transcribed, the researchers will familiarise themselves with the data. This will
54 lead to pre-analytical insights of the data. The next step will be to 1) identify relevant themes
55 within the text, 2) divide the text into units of meaning, 3) coding of the data, 4) generation of
56 categories by grouping codes, 5) analysis of each category, and 6) elaboration of new text. The
57 results will be then discussed with the working group until consensus is reached (triangulation).
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Ethical considerations

We have obtained the necessary ethical approvals prior to the start of the research from our organisation (IDIAPJGoL) [19/178-P]. We have considered a number of ethical issues. A main consideration is that this research involves the participation of individuals who are not able to give consent (minors). Child consent will be granted through representation (i.e., parents or legal tutors) according to the Spanish Law on Biomedical Research (14/2007).

All activities included in the study will be carried out according to existing guidance in ethics as indicated in the Universal Declaration on Bioethics and Human Rights adopted by UNESCO (19/10/2005); the Council of Europe Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine (1997) and its additional protocol on biomedical research (2005); the Helsinki Declaration (2013) and relevant EU laws (European Parliament and Council Directive 2001/20/EC); the Spanish Law on Biomedical Research (14/2007); and the LOPD (Spanish Law on Personal Data Protection) (3/2018).

Informed consent

Verbal and written informed consent will be requested from all participants prior to their participation in the study. Most participants will be minors. This has important ethical implications. All information will be given to underage participants in a comprehensive way, and study materials will be adapted to ensure readability and comprehensiveness. Parents or legal guardians will be notified of their children's invitation to the study. A signed written consent will be requested from all parents or legal guardians for all underage participants. The researchers will ensure that participants are able to consent, and that they understand what their participation entails.

Confidentiality and anonymity

Confidentiality and anonymity will be carefully ensured. Contact details will only be requested to those participants that are willing to take part in succeeding stages of the study. Physical identifiable data will be securely stored at the IDIAPJGoL in a locked cabinet. Digital information will be securely stored at the IDIAPJGoL secure portal. Only the research team will have access to the data. All data presented when disseminating the findings from this study will be anonymised. Anonymised data will be made available upon request to the authors.

Potential risks

Taking part in this study will involve the discussion of sensitive topics (i.e., menstrual health, situations of inequity, sexual relationships, and other related topics) and involves the inclusion

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3 of a vulnerable group (minors). Discussing sensitive topics and the inclusion of minors are
4 necessary for the purposes of this study. In order to minimise these issues, information about the
5 nature of the study will be disclosed prior to seeking consent and before initiating the data
6 collection. The researchers will conduct the study sensitively at all times.
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10 A protocol has been prepared in case the researchers had immediate concerns of harm, or a
11 participant gets distressed during their participation in the study. If this happened with underage
12 participants, their school tutor and parents will be informed (with the participants' permission).
13 Participation will be paused or stopped if a participant gets distressed. It will be the participant's
14 decision whether they decide to continue taking part in the study. The research team will ensure
15 that all participants are able to seek support and/or advice if needed.
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20 All participants will be made aware of their right to withhold information that they are not
21 willing to share, as well as withdrawing from the study or removing their data at any time (prior
22 to data analyses).
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26 Participants taking part in the interviews, group discussion and World Café will receive a 10€
27 voucher as a token of thanks for their participation.
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30 **Dissemination strategy**

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32 The findings will be disseminated to key audiences. These will be YPM, YNM, parents and
33 legal tutors, health professionals, educators, youth (and other relevant) organisations, general
34 community members, stakeholders and policymakers, and academia.
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38 The dissemination strategy will include a dissemination project produced by YPM and YNM,
39 with the support of the research team. The content and format will be chosen by YPM and
40 YNM involved in the development of this dissemination project. Examples of formats would be
41 an art exhibition or a book.
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45 The working group will also organise meetings and workshops at "citizen science" events and
46 schools, aimed at several key audiences. These meetings and workshops will involve study
47 participants (YPM, YNM, and professionals) who will co-lead the sessions.
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51 The working group will prepare short reports, policy briefs, presentations and meetings with
52 stakeholders and policymakers, activists, health professionals, educators and youth (and other
53 relevant) organisations. The materials, presentations and meetings will be prepared in
54 collaboration with study participants.
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On the other hand, scientific publications will be prepared. The study will also be presented at national and international conferences. This part of the strategy will be led by the research team, with the collaboration of the working group and study participants.

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AUTHORS’ CONTRIBUTIONS

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51 LMP has led and coordinated the conception and design of this study. She has written this
52 manuscript. ABO has been involved in the conception and design in this study. She has
53 reviewed and made substantial contributions to this manuscript. TLJ has contributed to the
54 design of the quantitative study, performed power calculations and written the plan for the
55 quantitative data analyses. He has reviewed and made substantial contributions to this
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3 manuscript. CJA, CVL, RTV, DP, LH, PBC, ESL and JMF have contributed to the design of
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17

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FIGURES

STUDY PHASES	TASKS	TEAM	Year 1												Year 2											
			Months												Months											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Transversal	Meetings research group	Research team	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█		
	Meetings working group	Working group	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█		
Study preparation	Ethical approvals	Research team	█																							
	Creation of working group	Research team	█																							
	Development of study protocol	Working group	█																							
	Development of study materials	Working group	█	█	█																					
	Establish contacts for recruitment	Working group	█	█	█	█																				
Recruitment and data collection	Recruitment schools	Working group					█																			
	Recruitment participants	Research team					█																			
	Completion of questionnaires	Research team					█	█																		
	Individual interviews	Research team					█	█	█																	
	Group discussions	Research team								█	█															
	World Café	Research team										█	█													
Data analyses	Transcribing	Research team; transcriber					█	█	█	█	█	█														
	Quantitative analyses	Research team					█	█																		
	Qualitative analyses	Research team										█	█													
	Discussion of results	Working group					█	█	█	█	█	█	█													
Dissemination	Dissemination project	Participants; working group															█	█	█							
	Dissemination of final product	Participants; working group																█	█	█	█	█	█	█		
	Dissemination of results	Working group	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█		

BMJ Open

Menstrual health and period poverty among young people who menstruate in the Barcelona metropolitan area (Spain): protocol of a mixed-methods study.

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4 **Barcelona metropolitan area (Spain): protocol of a mixed-methods study.**
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7 Medina-Perucha, L.¹, Jacques-Aviñó, C.^{1,2,3}, Valls-Llobet, C.⁴, Turbau-Valls, R.⁵, Pinzón, D.^{2,6},
8 Hernández, L.⁷, Briales Canseco, P.⁸, López-Jiménez, T.^{1,2}, Solana Lizarza, E., Munrós Feliu,
9 J.⁹, Berenguera-Ossó, A.^{1,2,10}
10
11

12
13 ¹ Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
14 (IDIAPJGol), Barcelona, Spain.
15

16
17 ² Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Vallès), Spain.
18

19
20 ³ Medical Anthropological Research Center (MARC-URV), Tarragona,
21 Spain.
22

23
24 ⁴ Centro de Análisis y Programas Sanitarios (CAPS), Barcelona, Spain.
25

26
27 ⁵ Institut Català de la Salut (ICS), Barcelona, Spain.
28

29
30 ⁶ SomiArte Taller, Barcelona, Spain.
31

32
33 ⁷ La Caravana Roja, Murcia, Spain.
34

35
36 ⁸ Consejería de Educación, Comunidad de Madrid, Madrid, Spain.
37

38
39 ⁹ Atenció a la Salut Sexual i Reproductiva (ASSIR) Muntanya/La Mina. Institut Català de la
40 Salut (ICS), Barcelona, Spain.
41

42
43 ¹⁰ Departament d'Infermeria, Universitat de Girona, Girona, Spain
44
45

46 **Corresponding author**
47

48 Dr Laura Medina-Perucha

49 Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
50 (IDIAPJGol)

51 Gran Via de les Corts Catalanes, 591, attic

52 08007 Barcelona (Spain)

53 lmedina@idiapjgol.info

54 (0034) 93 482 46 17
55
56
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60

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4 **ABSTRACT**

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6
7 **Introduction.** The importance of menstrual health has been historically neglected, mostly due to
8 taboos and misconceptions around menstruation and androcentrism within health knowledge and
9 health systems around the world. There has also been a lack of attention on “period poverty”,
10 which refers to the financial, social, cultural and political barriers to access menstrual products
11 and education. The main aim of this research is to explore menstrual health and experiences of
12 period poverty among young people who menstruate (YPM). **Methods and analysis.** This is a
13 convergent mixed-methods study which will combine a quantitative transversal study to identify
14 the prevalence of period poverty among YPM (11-16 years old), and a qualitative study that will
15 focus on exploring menstruation-related experiences of YPM and other groups (young people
16 who do not menstruate (YNM); primary healthcare professionals; educators; and policymakers).
17 The study will be conducted in the Barcelona metropolitan area between 2020 and 2021. Eighteen
18 schools and 871 YPM will be recruited for the quantitative study. Sixty-five YPM will participate
19 in the qualitative study. Forty-five YNM and 12 professionals will also be recruited to take part
20 in the qualitative study. Socioeconomic and cultural diversity will be main vectors for recruitment,
21 to ensure the findings are representative to the social and cultural context. Descriptive statistics
22 will be performed for each variable to identify asymmetric distributions and it will be evaluated
23 differences among groups. Thematic analysis will be used for qualitative data analyses. **Ethics**
24 **and dissemination.** Several ethical issues have been considered, especially as this study includes
25 the participation of underage participants. The study has received ethical approval by the
26 IDIAPJGol Research Ethics Committee [19/178-P]. Research findings will be disseminated to
27 key audiences, such as YPM, YNM, parents/legal tutors, health professionals, educators, youth
28 (and other relevant) organisations, general community members, stakeholders and policymakers,
29 and academia.

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44 **STRENGTHS AND LIMITATIONS OF THIS STUDY**

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- This study will address an important research gap on menstrual health and period poverty in high-income settings, from a gender and intercultural approach.
 - A mixed-methods design will allow for the integration of quantitative (descriptive) and qualitative (in-depth) data.
 - This study includes collaborations with a variety of key actors, following Responsible and Research Innovation (RRI) guidelines.
 - The dissemination strategy includes a variety of audiences and will be co-created with study participants.

- The combination of data collection methods, and using a RRI and participatory research approach will require increased resources and time.

KEYWORDS

Menstrual health; period poverty; health services; education; young people

INTRODUCTION

Research on menstrual health is still scarce. Moreover, most research has been conducted in low-income countries,[1–3], neglecting its need in high-income regions. Menstrual health is associated with the access of people who menstruate to accurate information on menstruation, menstrual products and clean and safe wash facilities. Also, with experiences related to the menstrual cycle and the use of menstrual health as a tool for health promotion. A good menstrual health also includes tackling menstruation-related taboos, stigma and discrimination[4]. Promoting menstrual health is key to reach gender equity and promote health among people who menstruate, and it has even been suggested that menstrual health should be incorporated as a vital sign,[5,6]. Despite a growing international commitment to focus on menstrual health, there is still much to be done[2]. In this study, we will focus on “people who menstruate” rather than “women” not to exclude those who have a menstrual cycle but are not women/do not identify as women (e.g., male transsexual or male transgender).

Activist-led movements have increased awareness on the negative impact that the cost of menstrual products, socio-cultural practices and views on menstruation have on women’s health and wellbeing. These movements aim at promoting a “menstrual culture” that demystifies the menstrual cycle and are based on feminist and socio-cultural paradigms. Together with some health professionals, activism in Spain is already suggesting body awareness and knowledge about one’s menstrual cycle as tools for health promotion. Menstrual health education is crucial to understand and improve how people who menstruate relate to their menstrual cycle,[4,7]. The role of the “menstrual products” and pharmaceutical industries in women’s menstrual health is however strong. It is precisely these companies the ones often delivering menstrual health education in schools in Spain. Considering these events enough for “menstrual health education” is questionable, as these companies rather focus on selling their products and medicalising menstruation instead of delivering high quality education on the menstrual cycle and the wide range of products available. In the meantime, many people who menstruate in Spain seem to still be unaware of how their menstrual cycle works and the relationship with their overall health.

Focusing on young people is crucial to understand their conceptions and experiences of menarche (first menstruation). Good health education among young people is a priority as their bodies are

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3 changing and leading to adulthood. As previously reported in a study by Plan International UK[4],
4 it is essential that young people get access to menstrual health education, health services and
5 products that protect their health and wellbeing. In this study, menstrual-related myths and taboos
6 were prevalent among young people. Stigma and embarrassment were also still a reality for many
7 girls as, for example, most girls did not feel comfortable discussing menstruation with their school
8 teachers. Besides and very importantly, most girls explained how they were unaware of what was
9 happening and what to do when they first got their period[4]. Another reason to focus on children
10 and adolescents is that they are vulnerable groups to experiencing stigma, discrimination, and
11 social and health inequities.
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18 Inequities between people who menstruate and people who do not menstruate are also to be
19 highlighted. These are for example visible through the (still prevailing) stigma and discrimination
20 towards people who menstruate and menstruation itself[4]. In line with this, productivity loss due
21 to presentism and absenteeism at schools and workplaces among people who experience
22 menstrual pain needs to be considered too[8]. Apart from the social and financial impacts of
23 productivity loss, social and health inequities among people who menstruate (compared to people
24 who do not menstruate) can be also explained when menstruating is a source of social (e.g.,
25 normalisation of menstrual pain) and structural (e.g., not being able to get sick leave for menstrual
26 pain) sanctions.
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The menstrual cycle is not a health condition to be medicalised. However, this is not how it seems
to be conceived within society and healthcare systems. This project stems from an opposition to
the predominant androcentrism in health science and healthcare systems. The concept of
androcentrism refers to having men (male humans) as the reference, the norm and the example
for all humans. In the health context this has translated into the invisibilisation of women, the
female body and women's health in health science, policy and practice,[9–12]. As briefly
mentioned already, this project also questions the role of the industry (menstrual products and
pharmaceutical) in the medicalisation and socio-cultural conceptualisations of the menstrual cycle
and menstruation[9]. Instead, it is important that the menstrual cycle is understood as a natural
process that is associated with good health. This means that educating society and professionals
is a priority to promote health among young people who menstruate (YPM). Increased education
and a more positive conceptualisation of the menstrual cycle and menstruation could help YPM
being more aware of their bodies and health. In turn, this could help encourage menstruators to
care for their menstrual and general health, and aid the identification of some health conditions
such as endometriosis[13]. Improved education could also lead the disassociation of menstruation
and pain, and challenge myths and beliefs around the menstrual cycle and the use of hormonal
contraception. Last but not least, education could reduce menstruation-related stigma and
discrimination.

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3 One aspect of menstrual health is the access to menstrual products. Research in other countries,
4 such as Uganda[3] and the United Kingdom[4] has highlighted experiences of *period poverty*
5 among young women. This term refers to barriers (financial, social, cultural and political) in
6 accessing menstrual products, menstrual education and access to healthcare services. Plan
7 International UK[4] recently explored period poverty in a high-income country through focus
8 groups with 64 adolescents. Their report revealed that 1 in 10 adolescents experienced period
9 poverty in the United Kingdom. However, and to our knowledge, there have been no attempts to
10 identify the prevalence of period poverty at a community or population level.
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17 Despite social movements to promote menstrual culture and reduce taxes of menstrual products
18 in the last few years, menstrual health in Spain continues to be ignored. This is reflected in
19 national and regional public health strategies, in which menstrual health is never present. Even if
20 27,7% of children were at risk of poverty in Catalunya in 2017[14], experiences of period poverty
21 among children and adolescents have not been explored. Social, cultural, financial and political
22 barriers to promote menstrual health, tackle stigma and discrimination and eliminate period
23 poverty have also been overlooked. Besides, menstrual products are not considered a necessity
24 by law in Spain, holding a 10% tax (Spanish Law 37/1992, 28th December 2018). Despite in
25 October 2018 the Spanish government guaranteed that tax retentions on menstrual product should
26 be reduced to 4%, this tax reduction has not yet been applied.
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34 For the reasons stated above, this study will mainly explore menstrual health and experiences of
35 period poverty among YPM. We also hope to identify barriers and facilitators that could promote
36 menstrual health through the access of good-quality education and healthcare. Also, to explore
37 ways to improve menstrual health experiences in YPM and reduce period poverty. This study will
38 provide recommendations for future research, policy and practice, aiming at addressing social
39 inequities of health in YPM (and especially amongst those that may be experiencing period
40 poverty) in Spain and other high-income countries with similar sociocultural contexts. The views
41 of young people who do not menstruate and professionals will also be considered in this project.
42 Through this research, our team aims to start a line of research on menstrual health and period
43 poverty in the area of Barcelona, hoping to scale the study up to other areas in Spain.
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50 **AIMS AND OBJECTIVES**

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52 This project aims to explore menstrual health and experiences of period poverty among young
53 people who menstruate (YPM) (11-16 years old). The study will be conducted in the Barcelona
54 metropolitan area between 2019 and 2021.
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58 The objectives will be:

- 59 1. To identify the prevalence of period poverty in YPM.
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3. To explore socio-cultural understandings of menstruation and menstrual health in YPM, young people who do not menstruate (YNM) of the same age, health professionals, teachers, activists and policymakers.
4. To explore experiences of menstruation and period poverty among YPM.
5. To explore menstruation-related stigma and discrimination.
6. To identify barriers and facilitators to promote menstrual health, and to access education and healthcare for menstrual health.
7. To identify opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.
8. Provide recommendations for future research, policy and practice.

METHODS AND ANALYSIS

The study will be coordinated by the research team at the [Research Centre name]. However, a working group of women that includes health professionals, educators, youth representatives and menstrual health activists has been composed, considering Responsible Research and Innovation (RRI) guidelines[15]. The members of the working group will regularly contribute to the development of the project attending regular meetings. They will also be involved in developing key study materials (e.g., study protocol, non-validated questionnaire, topic guides) and writing research publications and other dissemination materials. Taking this Responsible and Research Innovation (RRI) approach will be key to conducting inclusive research not only *for* but *with* the community and other key agents. This research is based on gender-based [9,16,17] and intercultural approach [18–20]. These approaches go in line with acknowledging sociocultural differences and embracing a respectful and non-discriminatory perspective on research.

Study design

This research is a convergent mixed-methods study that will include a quantitative study and a qualitative study. Quantitative research will allow to quantify the extent of period poverty and some menstrual health experiences. Qualitative research will provide an in-depth exploration of these phenomena. It will start in September 2019 and end in September 2021. A Gantt Chart is provided in Figure 1. Data will be collected in Catalan and Spanish, both mother tongues in the Barcelona metropolitan area.

Quantitative study

This is a cross-sectional questionnaire-based study. A non-standardised questionnaire will be used to calculate the composite main variable “period poverty”. Other variables that will be measured and will be used to develop the variable “period poverty”. These will be: 1) use of menstrual

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3 products, 2) financial (and other) barriers to access menstrual products, 3) use of hormonal
4 contraception, 4) period pain and menstrual disorders, 5) mental health, 6) access to menstrual
5 health consultations, 7) menstruation-related school absenteeism, 8) menstruation-related
6 interference on school performance and other activities, 9) menstruation-related stigma and
7 discrimination, 10) access to menstrual health education, and 11) menstrual hygiene and
8 management.
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13 Sociodemographic data will also be collected (age, school, primary healthcare centre, deprivation
14 index, household composition). All variables and sociodemographic data (except for the
15 deprivation index) will be collected using the self-reported questionnaire. The deprivation index
16 will be calculated based on available databases such as the MEDEA deprivation index[21].
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20 Qualitative study

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23 There will be three phases of data collection for the qualitative study:
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25 Phase I. Semi-structured interviews using photo elicitation techniques[22]: 20 YPM will take part
26 in semi-structured interviews using photo elicitation techniques. These interviews will take place
27 in schools making sure that participants are in a familiar and comfortable environment. The
28 interviews will focus on objectives 2-4.
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32 Phase II. Group discussions: Nine group discussions (three with YPM only, three with YNM, and
33 three mixed) will be run with an estimate of 45 YPM and 45 YNM. Participants for the group
34 discussions will be stratified by age (11-12 years old, 13-14 years old, and 15-16 years old). Group
35 discussions will be conducted within the natural context of a classroom. Observation and group
36 discussion techniques will be used to collect data. Objectives 2-6 will be covered in this phase of
37 data collection.
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41 Phase III. World Café[23]: Health professionals, teachers, policymakers, activists and youth
42 representatives will be invited to participate in a world café. There will be a maximum of 12
43 professionals in the session. The aim of phase III will be to mainly address objectives 4-6.
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48 **Materials**

49 Quantitative study

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51 A non-standardised questionnaire has been devised for this study by the working group (see
52 supplementary material). Several meetings were organised to work on the development of the
53 variables and the questionnaire, following the guidance of previous research and published work
54 on questionnaire design [24].
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Qualitative study

Topic guides will be developed for each phase of the qualitative study. Developing the topic guides will be a collaborative process between the research team and the working group. The topic guides will be based on the aims of this research, previous evidence, the team's expertise and data previously collected for this study (for Phase II and Phase III).

The main topic areas will be 1) socio-cultural understandings of menstruation and menstrual health; 2) personal experiences of menstruation; 3) experiences of period poverty; 4) experiences of menstruation-related stigma and discrimination; 5) barriers and facilitators to promote menstrual health, and to access education and healthcare for menstrual health; and 6) opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.

All materials for the quantitative and qualitative studies will be piloted with the target population before using them for data collection.

Participants

There will be different groups of participants: YPM, YNM, and professionals (health professionals, teachers, policymakers, activists, and youth representatives).

Participant selection

For both the quantitative and qualitative studies recruitment will be non-probabilistic (as not all schools and individuals will have the same probability of being recruited) and purposive (as schools and participants will be selected based on the requirements of the study).

YPM and YNM will be recruited from (public, private and charter) schools in the Barcelona metropolitan area. Schools will be identified to be representative of the socioeconomic diversity in the Barcelona metropolitan area. The MEDEA index[21] will be used to determine the socioeconomic level of each school. Cultural diversity will also be a factor for recruiting schools and individuals. The team will ensure that the experiences of socially excluded communities, such as the gipsy community and migrants, are represented in this research. Considering that around 18 schools will be recruited, we will aim to recruit three or four schools of each of the five MEDEA levels. First, permission will be requested from the council of each municipality where recruitment will take place. Then, schools will be contacted and informed about the study, based on a list of schools in the Barcelona metropolitan area and professional contacts of the working group of school staff. The researcher team will organise meetings at participating schools to inform the staff and children about the study. Information sheets and consent forms will be given to children to inform and ask parents and legal tutors consent to participate. An adapted information sheet will be given to minors, apart from the information sheets and consent forms

for parents and legal tutors. Parents and legal tutors will be asked to return a signed copy of the consent form if they are willing for their children to participate. This procedure will be used for each stage of the project involving children (quantitative study and Phase I and II of the qualitative study).

In Phase III of the qualitative study, professionals will be recruited using snowballing techniques and through identifying key informants for this study. Diversity in the professionals' background and expertise will be considered to ensure diversity in the discourses. Participants will be required to sign an informed consent to take part in the study.

Inclusion and exclusion criteria

The inclusion and exclusion criteria are available in Tables 1-3.

Table 1

Inclusion and exclusion criteria of young people who menstruate (YPM)

Young people who menstruate (YPM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have not (and will not) menstruate
Have (or will) menstruate	Cannot understand and/or provide consent
Have given their consent to participate	Cannot communicate well in Catalan or Spanish
Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 2

Inclusion and exclusion criteria of young people who do not menstruate (YNM)

Young people who do not menstruate (YNM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have (or will) menstruate
Have not (and will not) menstruate	Cannot understand and/or provide consent
Have given their consent to participate	Cannot communicate well in Catalan or Spanish

Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 3

Inclusion and exclusion criteria of professionals

Professionals	
Inclusion criteria	Exclusion criteria
Have experiences working in relevant areas of/for menstrual health	Do not have experiences working in relevant areas of/for menstrual health
Have signed the consent form	Cannot understand and/or provide consent
Have a good command of Catalan or Spanish	Cannot communicate well in Catalan or Spanish

Sample size

Quantitative study

A total of 871 YPM will be recruited for the quantitative study in 18 schools in the Barcelona Metropolitan area. The sample size is based on power calculations considering the composite variable “period poverty” as the main variable. Maximum indetermination of the main variable (proportion of 50%) was assumed. It was also considered that there are 53,354 young girls attending schools in the Barcelona metropolitan area between 11 and 16 years old. These assumptions were in order to obtain a precision of 5%, expecting that 50 young girls of each participating school will take part in the study. Also, due to the effect of the design an interclass correlation of 0,026 [3] will required a minimum of 871 participants (and 18 schools). These estimates have been calculated assuming an alfa risk of 5%. PASS software was used for the sample size calculations [PASS 15 Power Analysis and Sample Size Software (2017). NCSS, LLC. Kaysville, Utah, USA].

Qualitative study

Sixty-five YPM, 45 YNM and 12 professionals (health professionals, teachers, policymakers, activists, and youth representatives) will be recruited for the qualitative study. The sample size will be dependent on data saturation.

Data analysis plan

Quantitative study

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3 Descriptive statistics will be used for each variable to identify asymmetric distributions. The
4 continuous variables will be analysed as mean (SD) or median (25th and 75th centiles) based on
5 the normality/non-normality of the distribution, and categorical variables will be described as
6 percentages. To evaluate differences among groups, the appropriate statistics will be applied
7 based on the type of variable and their distribution (χ^2 , F-distribution, Student's t-distribution,
8 analysis of variance, Mann-Whitney U and Kruskal-Wallis). To estimate the magnitude of the
9 associations between the selected variables and period poverty, prevalence ratios and their 95%
10 confidence intervals will be computed by general linear models (Poisson regression models with
11 robust variance and logistics models).
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17 Qualitative study

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20 Qualitative data will be analysed using Thematic Content Analysis[23]. Once the audio
21 recordings are transcribed, the researchers will familiarise themselves with the data. This will lead
22 to pre-analytical insights of the data. The next step will be to 1) identify relevant themes within
23 the text, 2) divide the text into units of meaning, 3) coding of the data, 4) generation of categories
24 by grouping codes, 5) analysis of each category, and 6) elaboration of new text. The results will
25 be then discussed with the working group until consensus is reached (triangulation).
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31 **Patient and Public Involvement**

32
33 The research questions and aims of this study were driven by community-led social movements
34 on menstrual health and period poverty. Key agents and community members were consulted to
35 design the study, being some of these agents part of the working group. The working group will
36 be actively involved in all stages of the study. Together with participants, the working group will
37 also contribute to the communication and dissemination of the findings (see Dissemination
38 Strategy section on page 12). All materials used for this study (e.g., questionnaire and topic
39 guides) will be designed and piloted with the target population.
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46 **Ethical considerations**

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48 We have obtained the necessary ethical approvals prior to the start of the research from our
49 organisation (IDIAPJGoL) [19/178-P]. We have considered a number of ethical issues. A main
50 consideration is that this research involves the participation of individuals who are not able to
51 give consent (minors). Child consent will be granted through representation (i.e., parents or legal
52 tutors) according to the Spanish Law on Biomedical Research (14/2007).
53
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56

57 All activities included in the study will be carried out according to existing guidance in ethics as
58 indicated in the Universal Declaration on Bioethics and Human Rights adopted by UNESCO
59 (19/10/2005); the Council of Europe Convention for the Protection of Human Rights and Dignity
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3 of the Human Being with regard to the Application of Biology and Medicine (1997) and its
4 additional protocol on biomedical research (2005); the Helsinki Declaration (2013) and relevant
5 EU laws (European Parliament and Council Directive 2001/20/EC); the Spanish Law on
6 Biomedical Research (14/2007); and the LOPD (Spanish Law on Personal Data Protection)
7 (3/2018).
8
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10

11 Informed consent

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13
14 Verbal and written informed consent will be requested from all participants prior to their
15 participation in the study. Most participants will be minors. This has important ethical
16 implications. All information will be given to underage participants in a comprehensive way, and
17 study materials will be adapted to ensure readability and comprehensiveness. Parents or legal
18 guardians will be notified of their children's invitation to the study. A signed written consent will
19 be requested from all parents or legal guardians for all underage participants. The researchers will
20 ensure that participants are able to consent, and that they understand what their participation
21 entails.
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27 Confidentiality and anonymity

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30 Confidentiality and anonymity will be carefully ensured. Contact details will only be requested
31 to those participants that are willing to take part in succeeding stages of the study. Physical
32 identifiable data will be securely stored at the IDIAPJGoL in a locked cabinet. Digital information
33 will be securely stored at the IDIAPJGoL secure portal. Only the research team will have access
34 to the data. All data presented when disseminating the findings from this study will be
35 anonymised. All identifiable data will be removed from transcriptions and participants will be
36 assigned a participant code. Anonymity in the photographs used in the photo-elicitation
37 interviews will also be ensured. The team will do this by not using photographs in which people
38 are identifiable, unless written consent is given from identifiable people in the photographs.
39 Anonymised data will be made available upon request to the authors.
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47 Potential risks

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49 Taking part in this study will involve the discussion of sensitive topics (i.e., menstrual health,
50 situations of inequity, sexual relationships, and other related topics) and involves the inclusion of
51 a vulnerable group (minors). Discussing sensitive topics and the inclusion of minors are necessary
52 for the purposes of this study. In order to minimise these issues, information about the nature of
53 the study will be disclosed prior to seeking consent and before initiating the data collection. The
54 researchers will conduct the study sensitively at all times.
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3 A protocol has been prepared in case the researchers had immediate concerns of harm, or a
4 participant gets distressed during their participation in the study. If this happened with underage
5 participants, their school tutor and parents will be informed (with the participants' permission).
6 Participation will be paused or stopped if a participant gets distressed. It will be the participant's
7 decision whether they decide to continue taking part in the study. The research team will ensure
8 that all participants are able to seek support and/or advice if needed.
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13 All participants will be made aware of their right to withhold information that they are not willing
14 to share, as well as withdrawing from the study or removing their data at any time (prior to data
15 analyses).
16
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19 Participants taking part in the interviews, group discussion and World Café will receive a 10€
20 voucher as a token of thanks for their participation. Participants will also receive a debriefing
21 form that includes a list of resources (books, websites and Instagram accounts) to learn about
22 menstrual health.
23
24

25 26 **Dissemination strategy**

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28 The findings will be disseminated to key audiences. These will be YPM, YNM, parents and legal
29 tutors, health professionals, educators, youth (and other relevant) organisations, general
30 community members, stakeholders and policymakers, and academia.
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34 The dissemination strategy will include a dissemination project produced by YPM and YNM,
35 with the support of the research team. The content and format will be chosen by YPM and YNM
36 involved in the development of this dissemination project. Examples of formats would be an art
37 exhibition or a book.
38
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40
41 The working group will also organise meetings and workshops at "citizen science" events and
42 schools, aimed at several key audiences. These meetings and workshops will involve study
43 participants (YPM, YNM, and professionals) who will co-lead the sessions.
44
45

46
47 The working group will prepare short reports, policy briefs, presentations and meetings with
48 stakeholders and policymakers, activists, health professionals, educators and youth (and other
49 relevant) organisations. The materials, presentations and meetings will be prepared in
50 collaboration with study participants.
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52

53
54 On the other hand, scientific publications will be prepared. The study will also be presented at
55 national and international conferences. This part of the strategy will be led by the research team,
56 with the collaboration of the working group and study participants.
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59 AUTHORS' CONTRIBUTIONS

1
2
3 LMP has led and coordinated the conception and design of this study. She has written this
4 manuscript. ABO has been involved in the conception and design in this study. She has reviewed
5 and made substantial contributions to this manuscript. TLJ has contributed to the design of the
6 quantitative study, performed power calculations and written the plan for the quantitative data
7 analyses. He has reviewed and made substantial contributions to this manuscript. CJA, CVL,
8 RTV, DP, LH, PBC, ESL and JMF have contributed to the design of this study. She has reviewed
9 and made substantial contributions to this manuscript.
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16
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19
20

21 **COMPETING INTEREST STATEMENT**

22
23 The authors declare no conflict of interest.
24
25

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27
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30 Ortiz López and Mònica Isido Albaladejo for their contributions to elaborating the materials and
31 setting up recruitment and data collection.
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36 **FIGURE LEGEND**

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38 Figure 1. Gantt Chart.
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FIGURE

STUDY PHASES	TASKS	TEAM	Year 1												Year 2											
			Months												Months											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Transversal	Meetings research group	Research team	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Meetings working group	Working group																								
Study preparation	Ethical approvals	Research team	■																							
	Creation of working group	Research team	■																							
	Development of study protocol	Working group	■																							
	Development of study materials	Working group	■	■																						
	Establish contacts for recruitment	Working group		■	■	■																				
Recruitment and data collection	Recruitment schools	Working group					■																			
	Recruitment participants	Research team					■																			
	Completion of questionnaires	Research team					■	■																		
	Individual interviews	Research team						■	■																	
	Group discussions	Research team								■	■															
	World Café	Research team										■														
Data analyses	Transcribing	Research team; transcriber						■	■	■	■	■														
	Quantitative analyses	Research team						■	■	■	■	■														
	Qualitative analyses	Research team											■	■	■											
	Discussion of results	Working group							■	■	■	■	■	■	■											
Dissemination	Dissemination project	Participants; working group															■	■	■	■	■	■	■	■		
	Dissemination of final product	Participants; working group																		■	■	■	■	■		
	Dissemination of results	Working group	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Publication 1 (study protocol)	Working group	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Publication 2 (quantitative data)	Working group									■	■	■	■	■											
	Publication 3 (qualitative data; interviews and group discussions)	Working group															■	■	■	■	■	■	■	■		
	Publication 4 (qualitative data; world café)	Working group																	■	■	■	■	■	■		
Evaluation and impact	Impact evaluation	Working group							■												■			■		

Figure 1. Gantt Chart

MENSTRUAL HEALTH QUESTIONNAIRE

You will need to complete all questions if you have menstruated already. Please complete questions 1 to 16 if you have not had the menstruation yet.

Your answers are anonymous so nobody will be able to associate your answers with you. It is very important for you to know that there are no right or wrong answers, they are all welcome!

Date: _____

Indicate with an X or write your answer the following questions

1. How old are you? _____
2. What city do you live in? _____
3. What is the name of your school? _____
4. What are you studying? _____
5. What country were you born in? _____
6. What countries were your parents born in? *You do not need to answer if you do not know.*
 - My mum was born in _____
 - My dad was born in _____
8. Do you feel part of any of these communities? *Tick all options that are true for you*

<input type="radio"/> Gipsy	<input type="radio"/> Buddhist
<input type="radio"/> Christian	<input type="radio"/> Jewish
<input type="radio"/> Catholic	<input type="radio"/> Other _____
<input type="radio"/> Islamic	<input type="radio"/> None of these
<input type="radio"/> Hinduist	<input type="radio"/> I don't know
9. Have you ever had the menstruation?
 - Yes
 - No
 - I don't know

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10. Do you think menstrual pain is “normal”?
- Yes, it always hurts
 - Yes, it hurts sometimes
 - No, it shouldn't hurt too much
 - No, it doesn't hurt
 - I don't know
11. Where have you learnt about the menstruation? *Tick all options that are true for you*
- Family
 - School
 - Friends
 - Internet
 - Social networks (e.g. Instagram)
 - TV
 - Magazines or books
 - Other _____
 - I don't know
12. Would you like to have more information about the menstruation? *Tick all options that are true for you*
- Yes, on what the menstruation is
 - Yes, on the duration of the menstruation
 - Yes, on how the menstruation can have an impact on my daily life
 - Yes, on menstruation delays
 - Yes, on menstrual products
 - Yes, on something else: _____
 - No, I have enough
 - No, I am not interested
 - I don't know
13. Are you embarrassed to talk about the menstruation?
- Yes
 - No
 - I don't know
14. What is the menstruation? *Tick all the options that you think are correct.*
- Blood that comes out of the vagina
 - People have them every 3 weeks
 - It is common to have it over 10 days or more
 - Women have the menstruation all their life
 - It has something to do with the menstrual cycle
 - I don't know

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15. What menstrual products do you know of (even if you have not used them)?
- Tampons
 - Single-use pads
 - Cloth menstrual pads (you need to wash and re-use)
 - Menstrual cup
 - Menstrual underwear (menstrual-proof underwear that you need to wash and re-use)
 - Menstrual sponges
 - Other: _____
 - I don't know
16. What is the menstrual cycle? *Tick all the options that you think are correct.*
- It has 3 phases
 - It has something to do with the hormones
 - There are no changes in the body during the menstrual cycle
 - It has something to do with ovulation
 - I don't know

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IF YOU HAVEN'T HAD THE MENSTRUATION, YOU HAVE FINISHED!

Thank you very much for participating!

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PLEASE, CONTINUE ANSWERING IF YOU HAVE HAD THE MENSTRUATION 

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17. How old were you when you had the menstruation for the first time? _____
18. Do you have menstrual pain?
- Yes, always
 - Yes, sometimes
 - Very few times
 - No, never
 - I don't know
19. What do you do when you have menstrual pain? *Tick all the things that you do.*
- I take painkillers (e.g. Ibuprofen, paracetamol...)
 - I take hormonal contraceptives every day for menstrual pain
 - I use natural remedies
 - I cannot buy products for menstrual pain
 - I don't do anything
 - I do something else: _____
 - I don't have menstrual pain
 - I don't know

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20. Have you every spoken to someone about menstrual pain?
- Yes, with _____ (*e.g., my mother*)
 - No, with anyone
 - I don't know
21. Do you stop going to school when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
22. Do you stop exercising or going to physical education when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
23. Do you stop doing activities such as going to the pool or to the beach when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
24. Do you miss any plans with your friends when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
25. Do you have trouble concentrating at school when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
23. Do you feel less capable of doing an exam or evaluated activity when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
24. Did you know what the menstruation was before having it for the first time?
- Yes
 - No
 - I don't know
25. Did you feel ready to have the menstruation when you had it for the first time?
- Yes
 - No
 - I don't know

26. How do you usually feel when you have the menstruation? Tick all options that are true for you.

- Happy Embarrassed Other: _____
 Sad Relaxed
 Dirty Tired I don't know
 Angry Sensitive

27. Are you scared of staining your clothes with blood when you have the menstruation?

- Yes
 No
 I don't know

28. How often have you made an excuse not to say that you were menstruating?

- Always Very few times I don't know
 Sometimes Never

29. Has anyone ever made fun of you for having the menstruation?

- Yes
 No
 I don't know

30. Have you ever seen someone making fun of someone else for having the menstruation?

- Yes
 No
 I don't know

31. Are you embarrassed of buying or asking for menstrual products?

- Yes, always No, never
 Yes, sometimes I don't know
 Very few times Someone else buys them for me

32. What menstrual products do you use? Tick all the products that you use.

- Tampons I wear more than one piece of underwear
 Single-use pads Nappies
 Cloth menstrual pads I don't use anything (free bleeding)
 Menstrual cup Other: _____
 Toilet paper I don't know
 Menstrual underwear
 Menstrual sponge

33. Do you think menstrual products are too expensive?

- Yes
 No
 I don't know



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34. Have you ever lacked any money to buy menstrual products?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
35. Have you ever had to use menstrual products that you don't like because the ones you like are too expensive?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
36. Can you ask for menstrual products for free in your school?
- Yes
 - No
 - I don't know
37. Do you feel comfortable to ask for menstrual products in the following places? *Tick all options that are true for you.*
- School
 - Sports club
 - Youth centre
 - No, I don't feel comfortable
38. Have you ever gone to a health centre or pharmacy to ask about the menstruation?
- Yes
 - No, but I would like to go
 - No, but I would not like to go
 - I don't know
39. Have you ever used menstrual products for longer than it is recommended because you did not have a replacement?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
40. Have you ever used menstrual products for longer than it is recommended because you do could not find appropriate facilities to (e.g., individual bathroom, soap to wash your hands, clean bathroom,...)?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
41. In the last 6 months, have you had any of these symptoms?
- Genital rash
 - I haven't had any of these symptoms
 - Vaginal irritation
 - Other symptoms: _____
 - Genital redness or inflammation
 - Unusual vaginal discharge (colour/odour)
 - I don't know



42. If you have had symptoms, have you spoken about it with anyone?

- Yes, with _____
- No
- I don't know
- I haven't had any symptoms

43. If you have had symptoms, have you received any treatment?

- Yes, at _____ (e.g., health centre)
- No
- I don't know
- I haven't had any symptoms

Would you like to add anything about the menstruation?

Let us know here:

THANK YOU VERY MUCH FOR YOUR PARTICIPATION!

For peer review only

BMJ Open

Menstrual health and period poverty among young people who menstruate in the Barcelona metropolitan area (Spain): protocol of a mixed-methods study.

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4 **Barcelona metropolitan area (Spain): protocol of a mixed-methods study.**
5

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7 Medina-Perucha, L.¹, Jacques-Aviñó, C.^{1,2,3}, Valls-Llobet, C.⁴, Turbau-Valls, R.⁵, Pinzón, D.^{2,6},
8 Hernández, L.⁷, Briales Canseco, P.⁸, López-Jiménez, T.^{1,2}, Solana Lizarza, E.⁹, Munrós Feliu,
9 J.¹⁰, Berenguera, A.^{1,2,11}
10
11

12 ¹ Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
13 (IDIAPJGol), Barcelona, Spain.
14
15

16 ² Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Vallès), Spain.
17
18

19 ³ Medical Anthropological Research Center (MARC-URV), Tarragona,
20 Spain.
21

22 ⁴ Centro de Análisis y Programas Sanitarios (CAPS), Barcelona, Spain.
23
24

25 ⁵ Institut Català de la Salut (ICS), Barcelona, Spain.
26
27

28 ⁶ SomiArte Taller, Barcelona, Spain.
29
30

31 ⁷ La Caravana Roja, Murcia, Spain.
32
33

34 ⁸ Consejería de Educación, Comunidad de Madrid, Madrid, Spain.
35
36

37 ⁹ Universidad Internacional de La Rioja, Department of Education, Logroño, Spain
38
39

40 ¹⁰ Atenció a la Salut Sexual i Reproductiva (ASSIR) Muntanya/La Mina. Institut Català de la
41 Salut (ICS), Barcelona, Spain.
42
43

44 ¹¹ Departament d'Infermeria, Universitat de Girona, Girona, Spain
45
46
47

48 **Corresponding author**
49

50 Dr Laura Medina-Perucha
51

52 Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
53 (IDIAPJGol)
54

55 Gran Via de les Corts Catalanes, 591, attic
56

57 08007 Barcelona (Spain)
58

59 lmedina@idiapjgol.info
60

(0034) 93 482 46 17

1
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3
4
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6 **ABSTRACT**

7
8 **Introduction.** The importance of menstrual health has been historically neglected, mostly due to
9 taboos and misconceptions around menstruation and androcentrism within health knowledge and
10 health systems around the world. There has also been a lack of attention on “period poverty”,
11 which refers to the financial, social, cultural and political barriers to access menstrual products
12 and education. The main aim of this research is to explore menstrual health and experiences of
13 period poverty among young people who menstruate (YPM). **Methods and analysis.** This is a
14 convergent mixed-methods study which will combine a quantitative transversal study to identify
15 the prevalence of period poverty among YPM (11-16 years old), and a qualitative study that will
16 focus on exploring menstruation-related experiences of YPM and other groups (young people
17 who do not menstruate (YNM); primary healthcare professionals; educators; and policymakers).
18 The study will be conducted in the Barcelona metropolitan area between 2020 and 2021. Eighteen
19 schools and 871 YPM will be recruited for the quantitative study. Sixty-five YPM will participate
20 in the qualitative study. Forty-five YNM and 12 professionals will also be recruited to take part
21 in the qualitative study. Socioeconomic and cultural diversity will be main vectors for recruitment,
22 to ensure the findings are representative to the social and cultural context. Descriptive statistics
23 will be performed for each variable to identify asymmetric distributions and it will be evaluated
24 differences among groups. Thematic analysis will be used for qualitative data analyses. **Ethics**
25 **and dissemination.** Several ethical issues have been considered, especially as this study includes
26 the participation of underage participants. The study has received ethical approval by the
27 IDIAPJGol Research Ethics Committee [19/178-P]. Research findings will be disseminated to
28 key audiences, such as YPM, YNM, parents/legal tutors, health professionals, educators, youth
29 (and other relevant) organisations, general community members, stakeholders and policymakers,
30 and academia.

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45 **STRENGTHS AND LIMITATIONS OF THIS STUDY**

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- This study will address an important research gap on menstrual health and period poverty in high-income settings, from a gender and intercultural approach.
 - A mixed-methods design will allow for the integration of quantitative (descriptive) and qualitative (in-depth) data.
 - This study includes collaborations with a variety of key actors, following Responsible and Research Innovation (RRI) guidelines.
 - The dissemination strategy includes a variety of audiences and will be co-created with study participants.

- The combination of data collection methods, and using a RRI and participatory research approach will require increased resources and time.

KEYWORDS

Menstrual health; period poverty; health services; education; young people

INTRODUCTION

Research on menstrual health is still scarce. Moreover, most research has been conducted in low-income countries[1–3], neglecting its need in high-income regions. Menstrual health is associated with the access of people who menstruate to accurate information on menstruation, menstrual products and clean and safe wash facilities. Menstrual health also needs to be understood as a tool for health promotion, and it is linked to experiences related to the menstrual cycle. Good menstrual health also includes tackling menstruation-related taboos, stigma and discrimination[4]. Promoting menstrual health is key to reach gender equity and promote health among people who menstruate. Menstrual health has even been suggested as a vital sign[5,6]. Despite the growing international commitment to focus on promoting menstrual health, there is still much to be done[2]. In this study, we will focus on “people who menstruate” rather than “women” not to exclude people who have a menstrual cycle but are not women/do not identify as women (e.g., male transsexual or male transgender).

Activist-led movements have increased awareness on the negative impact that the cost of menstrual products, socio-cultural practices and views on menstruation have on women’s health and wellbeing. These movements aim at promoting a “menstrual culture” that demystifies the menstrual cycle and are based on feminist and socio-cultural paradigms. Together with some health professionals, activism in Spain is already suggesting body awareness and knowledge about one’s menstrual cycle as tools for health promotion. Menstrual health education is crucial to understand and improve how people who menstruate relate to their menstrual cycle[4,7]. The role of the “menstrual products” and pharmaceutical industries in women’s menstrual health is however strong. It is precisely these companies the ones often delivering menstrual health education in schools in Spain. Considering these events enough for “menstrual health education” is questionable, as these companies rather focus on selling their products and medicalising menstruation instead of delivering high quality education on the menstrual cycle and the wide range of products available[8]. In the meantime, many people who menstruate in Spain seem to still be unaware of how their menstrual cycle works and the relationship with their overall health[8].

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3 Focusing on young people is crucial to understand their conceptions and experiences of menarche
4 (first menstruation). Good health education among young people is a priority as their bodies are
5 changing as reaching adulthood. As previously reported in a study by Plan International UK[4],
6 it is essential that young people get access to menstrual health education, health services and
7 products that protect their health and wellbeing. In this study, menstrual-related myths and taboos
8 were prevalent among young people. Stigma and embarrassment were a reality for many girls as,
9 for example, most of them did not feel comfortable discussing menstruation with their school
10 teachers. Besides and very importantly, most girls explained how they were unaware of what was
11 happening in their bodies and what to do when they first got their menstruation[4]. Another reason
12 to focus on children and adolescents is that they are vulnerable groups to experiencing stigma,
13 discrimination, and social and health inequities.
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21 Inequities between people who menstruate and people who do not menstruate are also to be
22 highlighted. These are for example visible through the (still prevailing) stigma and discrimination
23 towards people who menstruate and menstruation itself[4]. In line with this, productivity loss due
24 to presentism and absenteeism at schools and workplaces among people who experience
25 menstrual pain needs to be considered too[9]. Apart from the social and financial impacts of
26 productivity loss, social and health inequities among people who menstruate (compared to people
27 who do not menstruate) can be also explained when menstruating is a source of social (e.g.,
28 normalisation of menstrual pain) and structural (e.g., not being able to get sick leave for menstrual
29 pain) sanctions.
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38 The menstrual cycle is not a health condition to be medicalised. However, this is not how it seems
39 to be conceived within society and healthcare systems. This project stems from an opposition to
40 the predominant androcentrism in health science and healthcare systems. The concept of
41 androcentrism refers to having men (male humans) as the reference, the norm and the example
42 for all humans. In the health context this has translated into the invisibilisation of women, the
43 female body and women's health in health science, policy and practice[8,10–12]. As briefly
44 mentioned already, this project also questions the role of the industry (menstrual products and
45 pharmaceutical) in the medicalisation and socio-cultural conceptualisations of the menstrual cycle
46 and menstruation[8]. Instead, it is important that the menstrual cycle is understood as a natural
47 process that is associated with good health. This means that educating society and professionals
48 is a priority to promote health among young people who menstruate (YPM). Increased education
49 and a more positive conceptualisation of the menstrual cycle and menstruation could help YPM
50 being more aware of their bodies. In turn, this could help encourage menstruators to care for their
51 menstrual and general health, and aid the identification of some health conditions such as
52 endometriosis[13]. Improved education could also lead the disassociation of menstruation and
53 pain, and challenge myths and beliefs around the menstrual cycle and the use of hormonal
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3 contraception. Last but not least, education could reduce menstruation-related stigma and
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5 discrimination.

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7 One aspect of menstrual health is the access to menstrual products. Research in other countries,
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9 such as Uganda[3] and the United Kingdom[4] has highlighted experiences of *period poverty*
10 among young women. This term refers to barriers (financial, social, cultural and political) in
11 accessing menstrual products, menstrual education and access to healthcare services. Plan
12 International UK[4] recently explored period poverty in a high-income country through focus
13 groups with 64 adolescents. Their report revealed that 1 in 10 adolescents experience period
14 poverty in the United Kingdom. However, and to our knowledge, there have been no attempts to
15 identify the prevalence of period poverty at a community or population level.
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21 Despite social movements to promote menstrual health and to reduce menstrual products' taxes
22 in the last few years, menstrual health in Spain continues to be ignored. This is reflected in
23 national and regional public health strategies, in which menstrual health is never present. Even if
24 27,7% of children were at risk of poverty in Catalunya in 2017[14], experiences of period poverty
25 among children and adolescents have not been explored. Social, cultural, financial and political
26 barriers to promote menstrual health, tackle stigma and discrimination and eliminate period
27 poverty have also been overlooked. Besides, menstrual products are not considered necessity
28 goods by law in Spain, holding a 10% tax (Spanish Law 37/1992, 28th December 2018). Despite
29 in October 2018 the Spanish government guaranteed that tax retentions on menstrual products
30 should be reduced to 4%, this tax reduction has not yet been applied.
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38 This study will explore menstrual health and experiences of period poverty among YPM. We also
39 hope to identify barriers and facilitators that could promote menstrual health through the access
40 of good-quality education and healthcare. Also, to explore ways to improve menstrual health
41 experiences in YPM and reduce period poverty. This study will provide recommendations for
42 future research, policy and practice, aiming at addressing social inequities of health in YPM (and
43 especially amongst those that may be experiencing period poverty) in Spain and other high-
44 income countries with similar sociocultural contexts. The views of young people who do not
45 menstruate and professionals will also be considered in this project. Through this research, our
46 team aims to start a line of research on menstrual health and period poverty in the area of
47 Barcelona, hoping to scale up the study to other areas in Spain.
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54 **AIMS AND OBJECTIVES**

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56 This project aims to explore menstrual health and experiences of period poverty among young
57 people who menstruate (YPM) (11-16 years old). The study will be conducted in the Barcelona
58 metropolitan area between 2019 and 2021.
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The objectives will be:

1. To identify the prevalence of period poverty in YPM.
2. To explore socio-cultural understandings of menstruation and menstrual health in YPM, young people who do not menstruate (YNM) of the same age, health professionals, teachers, activists and policymakers.
3. To explore experiences of menstruation and period poverty among YPM.
4. To explore menstruation-related stigma and discrimination.
5. To identify barriers and facilitators to promote menstrual health, and to access education and healthcare for menstrual health.
6. To identify opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.
7. Provide recommendations for future research, policy and practice.

METHODS AND ANALYSIS

The study will be coordinated by the research team at the [Research Centre name]. However, a working group of women that includes health professionals, educators, youth representatives and menstrual health activists has been composed, considering Responsible Research and Innovation (RRI) guidelines[15]. The members of the working group will regularly contribute to the development of the project attending regular meetings. They will also be involved in developing key study materials (e.g., study protocol, non-validated questionnaire, topic guides) and writing research publications and other dissemination materials. Taking this Responsible and Research Innovation (RRI) approach will be key to conducting inclusive research not only *for* but *with* the community and other key agents. This research is based on a gender-based [8,16,17] and intercultural approach [18–20]. These approaches go in line with acknowledging sociocultural differences and embracing a respectful and non-discriminatory perspective on research.

Study design

This research is a convergent mixed-methods study that will include a quantitative study and a qualitative study. Quantitative research will allow to quantify the extent of period poverty and some menstrual health experiences. Qualitative research will provide an in-depth exploration of these phenomena. It will start in September 2019 and end in September 2021. A Gantt Chart is provided in Figure 1. Data will be collected in Catalan and Spanish, the two official language in the Barcelona metropolitan area.

Quantitative study

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3 This is a cross-sectional questionnaire-based study. A non-standardised questionnaire (see
4 supplementary material) will be used to calculate the composite main variable “period poverty”.
5 Other variables that will be measured and will be used to develop the variable “period poverty”.
6 These will be: 1) use of menstrual products, 2) financial (and other) barriers to access menstrual
7 products, 3) use of hormonal contraception, 4) period pain and menstrual disorders, 5) mental
8 health, 6) access to menstrual health consultations, 7) menstruation-related school absenteeism,
9 8) menstruation-related interference on school performance and other activities, 9) menstruation-
10 related stigma and discrimination, 10) access to menstrual health education, and 11) menstrual
11 hygiene and management.
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14 Sociodemographic data will also be collected (age, school, primary healthcare centre, deprivation
15 index, household composition). All variables and sociodemographic data (except for the
16 deprivation index) will be collected using the self-reported questionnaire. The deprivation index
17 will be calculated based on available databases such as the MEDEA deprivation index[21].
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20 Qualitative study

21 There will be three phases of data collection for the qualitative study:
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24 Phase I. Semi-structured interviews using photo elicitation techniques[22]: 20 YPM will take part
25 in semi-structured interviews using photo elicitation techniques. These interviews will take place
26 in schools making sure that participants are in a familiar and comfortable environment. The
27 interviews will focus on objectives 2-4.
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30 Phase II. Group discussions: Nine group discussions (three with YPM only, three with YNM, and
31 three mixed) will be run with an estimate of 45 YPM and 45 YNM. Participants for the group
32 discussions will be stratified by age (11-12 years old, 13-14 years old, and 15-16 years old). Group
33 discussions will be conducted within the natural context of a classroom. Observation and group
34 discussion techniques will be used to collect data. Objectives 2-6 will be covered in this phase of
35 data collection.
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38 Phase III. World Café[23]: Health professionals, teachers, policymakers, activists and youth
39 representatives will be invited to participate in a world café. There will be a maximum of 12
40 professionals in the session. The aim of phase III will be to mainly address objectives 4-6.
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43 Materials

44 Quantitative study

45 A non-standardised questionnaire has been devised for this study by the working group (see
46 supplementary material). Several meetings were organised to work on the development of the
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3 variables and the questionnaire, following the guidance of previous research and published work
4 on questionnaire design [24].
5

6 7 Qualitative study 8

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10 Topic guides will be developed for each phase of the qualitative study. Developing the topic
11 guides will be a collaborative process between the research team and the working group. The
12 topic guides will be based on the aims of this research, previous evidence, the team's expertise
13 and data previously collected for this study (Phase II and Phase III).
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17 The main topic areas will be 1) socio-cultural understandings of menstruation and menstrual
18 health; 2) personal experiences of menstruation; 3) experiences of period poverty; 4) experiences
19 of menstruation-related stigma and discrimination; 5) barriers and facilitators to promote
20 menstrual health, and to access education and healthcare for menstrual health; and 6)
21 opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.
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25 All materials for the quantitative and qualitative studies will be piloted with the target population
26 before using them for data collection.
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29 30 **Participants** 31

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33 There will be different groups of participants: YPM, YNM, and professionals (health
34 professionals, teachers, policymakers, activists, and youth representatives).
35

36 37 Participant selection

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39 For both the quantitative and qualitative studies recruitment will be non-probabilistic (as not all
40 schools and individuals will have the same probability of being recruited) and purposive (as
41 schools and participants will be selected based on the requirements of the study).
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45 YPM and YNM will be recruited from (public, private and charter) schools in the Barcelona
46 metropolitan area. Schools will be identified to be representative of the socioeconomic diversity
47 in the Barcelona metropolitan area. The MEDEA index[21] will be used to determine the
48 socioeconomic level of each school. Cultural diversity will also be a factor for recruiting schools
49 and individuals. The team will ensure that the experiences of socially excluded communities, such
50 as the gipsy community and migrants, are represented in this research. Considering that around
51 18 schools will be recruited, we will aim to recruit three or four schools from each of the five
52 MEDEA levels. First, permission will be requested from the council of each municipality where
53 recruitment will take place. Then, schools will be contacted and informed about the study, based
54 on a list of schools in the Barcelona metropolitan area and professional contacts of the working
55 group. The research team will organise meetings at participating schools to inform staff and
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children about the study. Information sheets and consent forms will be given to children to inform and ask parents and legal tutors consent to participate. An adapted information sheet will be given to minors. Parents and legal tutors will be asked to return a signed copy of the consent form if they are willing for their children to participate. This procedure will be used for each stage of the project involving children (quantitative study and Phase I and II of the qualitative study).

In Phase III of the qualitative study, professionals will be recruited using snowballing techniques and by identifying key informants for this study. Diversity in the professionals' background and expertise will be considered to ensure diversity in the discourses. Participants will be required to sign an informed consent to take part in the study.

Inclusion and exclusion criteria

The inclusion and exclusion criteria are available in Tables 1-3. The researchers will not actively exclude people with functional diversities, unless they do not meet the inclusion criteria (e.g., they cannot give consent or communicate with the researchers).

Table 1

Inclusion and exclusion criteria of young people who menstruate (YPM)

Young people who menstruate (YPM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have not (and will not) menstruate
Have (or will) menstruate	Cannot understand and/or provide consent
Have given their consent to participate	Cannot communicate well in Catalan or Spanish
Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 2

Inclusion and exclusion criteria of young people who do not menstruate (YNM)

Young people who do not menstruate (YNM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have (or will) menstruate
Have not (and will not) menstruate	Cannot understand and/or provide consent

Have given their consent to participate	Cannot communicate well in Catalan or Spanish
Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 3

Inclusion and exclusion criteria of professionals

Professionals	
Inclusion criteria	Exclusion criteria
Have experiences working in relevant areas of/for menstrual health	Do not have experiences working in relevant areas of/for menstrual health
Have signed the consent form	Cannot understand and/or provide consent
Have a good command of Catalan or Spanish	Cannot communicate well in Catalan or Spanish

Sample size

Quantitative study

A total of 871 YPM will be recruited for the quantitative study in 18 schools in the Barcelona Metropolitan area. The sample size is based on power calculations considering the composite variable “period poverty” as the main variable. Maximum indetermination of the main variable (proportion of 50%) was assumed. It was also considered that there are 53,354 young girls attending schools in the Barcelona metropolitan area between 11 and 16 years old. These assumptions were in order to obtain a precision of 5%, expecting that 50 young girls of each participating school will take part in the study. Also, due to the effect of the design an interclass correlation of 0,026 [3] will required a minimum of 871 participants (and 18 schools). These estimates have been calculated assuming an alfa risk of 5%. PASS software was used for the sample size calculations [PASS 15 Power Analysis and Sample Size Software (2017). NCSS, LLC. Kaysville, Utah, USA].

Qualitative study

Sixty-five YPM, 45 YNM and 12 professionals (health professionals, teachers, policymakers, activists, and youth representatives) will be recruited for the qualitative study. The sample size will be dependent on data saturation.

Data analysis plan

Quantitative study

Descriptive statistics will be used for each variable to identify asymmetric distributions. The continuous variables will be analysed as mean (SD) or median (25th and 75th centiles) based on the normality/non-normality of the distribution, and categorical variables will be described as percentages. To evaluate differences among groups, the appropriate statistics will be applied based on the type of variable and their distribution (χ^2 , F-distribution, Student's t-distribution, analysis of variance, Mann-Whitney U and Kruskal-Wallis). To estimate the magnitude of the associations between the selected variables and period poverty, prevalence ratios and their 95% confidence intervals will be computed by general linear models (Poisson regression models with robust variance and logistics models).

Qualitative study

Qualitative data will be analysed using Thematic Content Analysis[23]. Once the audio recordings are transcribed, the researchers will familiarise themselves with the data. This will lead to pre-analytical insights of the data. The next step will be to 1) identify relevant themes within the text, 2) divide the text into units of meaning, 3) coding of the data, 4) generation of categories by grouping codes, 5) analysis of each category, and 6) elaboration of new text. Results will then be discussed with the working group until consensus is reached (triangulation).

Patient and Public Involvement

The research questions and aims of this study were driven by community-led social movements on menstrual health and period poverty. Key agents and community members were consulted to design the study, being some of these agents part of the working group. The working group will be actively involved in all stages of the study. Together with participants, the working group will also contribute to the communication and dissemination of the findings (see Dissemination Strategy section on page 12). All materials used for this study (e.g., questionnaire and topic guides) will be designed and piloted with the target population.

Ethical considerations

We have obtained the necessary ethical approvals prior to the start of the research from our organisation (IDIAPJGoL) [19/178-P]. We have considered a number of ethical issues. A main consideration is that this research involves the participation of individuals who are not able to give consent (minors). Child consent will be granted through representation (i.e., parents or legal tutors) according to the Spanish Law on Biomedical Research (14/2007).

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3 All activities included in the study will be carried out according to existing guidance in ethics as
4 indicated in the Universal Declaration on Bioethics and Human Rights adopted by UNESCO
5 (19/10/2005); the Council of Europe Convention for the Protection of Human Rights and Dignity
6 of the Human Being with regard to the Application of Biology and Medicine (1997) and its
7 additional protocol on biomedical research (2005); the Helsinki Declaration (2013) and relevant
8 EU laws (European Parliament and Council Directive 2001/20/EC); the Spanish Law on
9 Biomedical Research (14/2007); and the LOPD (Spanish Law on Personal Data Protection)
10 (3/2018).

11 12 13 14 15 16 Informed consent

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19 Verbal and written informed consent will be requested from all participants prior to their
20 participation in the study. Most participants will be minors. This has important ethical
21 implications. All information will be given to underage participants in a comprehensive way, and
22 study materials will be adapted to ensure readability and comprehensiveness. Parents or legal
23 guardians will be notified of their children's invitation to the study. A signed written consent will
24 be requested from all parents or legal guardians for all underage participants. The researchers will
25 ensure that participants are able to consent, and that they understand what their participation
26 entails.
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32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 Confidentiality and anonymity

Confidentiality and anonymity will be carefully ensured. Contact details will only be requested to those participants that are willing to take part in succeeding stages of the study. Physical identifiable data will be securely stored at the IDIAPJGoL in a locked cabinet. Digital information will be securely stored at the IDIAPJGoL secure portal. Only the research team will have access to the data. All data presented when disseminating the findings from this study will be anonymised. All identifiable data will be removed from transcriptions and participants will be assigned a participant code. Anonymity in the photographs used in the photo-elicitation interviews will also be ensured. The team will do this by not using photographs in which people are identifiable, unless written consent is given from identifiable people in the photographs. Anonymised data will be made available upon request to the authors.

Potential risks

Taking part in this study will involve the discussion of sensitive topics (i.e., menstrual health, situations of inequity, sexual relationships, and other related topics) and involves the inclusion of a vulnerable group (minors). Discussing sensitive topics and the inclusion of minors are necessary for the purposes of this study. In order to minimise these issues, information about the nature of

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3 the study will be disclosed prior to seeking consent and before data collection. The researchers
4 will conduct the study sensitively at all times.
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7 A protocol has been prepared in case the researchers had immediate concerns of harm, or a
8 participant gets distressed during their participation in the study. If this happened with underage
9 participants, their school tutor and parents will be informed (with the participants' permission).
10 Participation will be paused or stopped if a participant gets distressed. It will be the participant's
11 decision whether they decide to continue taking part in the study. The research team will ensure
12 that all participants are able to seek support and/or advice if needed.
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17 All participants will be made aware of their right to withhold information that they are not willing
18 to share, as well as withdrawing from the study or removing their data at any time (prior to data
19 analyses).
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23 Participants taking part in the interviews, group discussions and World Café will receive a 10€
24 voucher as a token of thanks for their participation. Participants will also receive a debriefing
25 form that includes a list of resources (books, websites and Instagram accounts) to learn about
26 menstrual health.
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30 **Dissemination strategy**

31 Findings will be disseminated to key audiences. These will be YPM, YNM, parents and legal
32 tutors, health professionals, educators, youth (and other relevant) organisations, general
33 community members, stakeholders and policymakers, and academia. Back translation methods
34 will be used to ensure the quality of any translations to English.
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39 The dissemination strategy will include a dissemination project produced by YPM and YNM,
40 with the support of the research team. The content and format will be chosen by YPM and YNM
41 involved in the development of this dissemination project. Examples of formats would be an art
42 exhibition or a book.
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47 The working group will also organise meetings and workshops at "citizen science" events and
48 schools, aimed at several key audiences. These meetings and workshops will involve study
49 participants (YPM, YNM, and professionals) who will co-lead the sessions.
50
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52 The working group will prepare short reports, policy briefs, presentations and meetings with
53 stakeholders and policymakers, activists, health professionals, educators and youth (and other
54 relevant) organisations. The materials, presentations and meetings will be prepared in
55 collaboration with study participants.
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On the other hand, scientific publications will be prepared. The study will also be presented at national and international conferences. This part of the strategy will be led by the research team, with the collaboration of the working group and study participants.

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8 **AUTHORS' CONTRIBUTIONS**

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10
11 LMP has led and coordinated the conception and design of this study. She has written this
12 manuscript. ABO has been involved in the conception and design in this study. She has reviewed
13 and made substantial contributions to this manuscript. TLJ has contributed to the design of the
14 quantitative study, performed power calculations and written the plan for the quantitative data
15 analyses. He has reviewed and made substantial contributions to this manuscript. CJA, CVL,
16 RTV, DP, LH, PBC, ESL and JMF have contributed to the design of this study. She has reviewed
17 and made substantial contributions to this manuscript.
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23
24
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27
28

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30
31 The authors declare no conflict of interest.
32
33

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35
36
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40 setting up recruitment and data collection.
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44 **FIGURE LEGEND**

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46 Figure 1. Gantt Chart.
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FIGURE

STUDY PHASES	TASKS	TEAM	Year 1												Year 2											
			Months												Months											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Transversal	Meetings research group	Research team	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Meetings working group	Working group																								
Study preparation	Ethical approvals	Research team	■																							
	Creation of working group	Research team	■																							
	Development of study protocol	Working group	■																							
	Development of study materials	Working group	■	■																						
	Establish contacts for recruitment	Working group		■	■	■																				
Recruitment and data collection	Recruitment schools	Working group					■																			
	Recruitment participants	Research team					■																			
	Completion of questionnaires	Research team					■	■																		
	Individual interviews	Research team						■	■																	
	Group discussions	Research team								■	■															
	World Café	Research team										■														
Data analyses	Transcribing	Research team; transcriber						■	■	■	■	■														
	Quantitative analyses	Research team						■	■	■	■	■														
	Qualitative analyses	Research team											■	■	■											
	Discussion of results	Working group							■	■	■	■	■	■	■											
Dissemination	Dissemination project	Participants; working group															■	■	■	■	■	■	■	■		
	Dissemination of final product	Participants; working group																		■	■	■	■	■		
	Dissemination of results	Working group	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Publication 1 (study protocol)	Working group	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Publication 2 (quantitative data)	Working group									■	■	■	■												
	Publication 3 (qualitative data; interviews and group discussions)	Working group															■	■	■	■	■	■	■	■		
	Publication 4 (qualitative data; world café)	Working group																	■	■	■	■	■	■		
Evaluation and impact	Impact evaluation	Working group							■												■			■		

Figure 1. Gantt Chart

MENSTRUAL HEALTH QUESTIONNAIRE

You will need to complete all questions if you have menstruated already. Please complete questions 1 to 16 if you have not had the menstruation yet.

Your answers are anonymous so nobody will be able to associate your answers with you. It is very important for you to know that there are no right or wrong answers, they are all welcome!

Date: _____

Indicate with an X or write your answer the following questions

1. How old are you? _____
2. What city do you live in? _____
3. What is the name of your school? _____
4. What are you studying? _____
5. What country were you born in? _____
6. What countries were your parents born in? *You do not need to answer if you do not know.*
 - My mum was born in _____
 - My dad was born in _____
8. Do you feel part of any of these communities? *Tick all options that are true for you*

<input type="radio"/> Gipsy	<input type="radio"/> Buddhist
<input type="radio"/> Christian	<input type="radio"/> Jewish
<input type="radio"/> Catholic	<input type="radio"/> Other _____
<input type="radio"/> Islamic	<input type="radio"/> None of these
<input type="radio"/> Hinduist	<input type="radio"/> I don't know
9. Have you ever had the menstruation?
 - Yes
 - No
 - I don't know

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10. Do you think menstrual pain is “normal”?
- Yes, it always hurts
 - Yes, it hurts sometimes
 - No, it shouldn't hurt too much
 - No, it doesn't hurt
 - I don't know
11. Where have you learnt about the menstruation? *Tick all options that are true for you*
- Family
 - School
 - Friends
 - Internet
 - Social networks (e.g. Instagram)
 - TV
 - Magazines or books
 - Other _____
 - I don't know
12. Would you like to have more information about the menstruation? *Tick all options that are true for you*
- Yes, on what the menstruation is
 - Yes, on the duration of the menstruation
 - Yes, on how the menstruation can have an impact on my daily life
 - Yes, on menstruation delays
 - Yes, on menstrual products
 - Yes, on something else: _____
 - No, I have enough
 - No, I am not interested
 - I don't know
13. Are you embarrassed to talk about the menstruation?
- Yes
 - No
 - I don't know
14. What is the menstruation? *Tick all the options that you think are correct.*
- Blood that comes out of the vagina
 - People have them every 3 weeks
 - It is common to have it over 10 days or more
 - Women have the menstruation all their life
 - It has something to do with the menstrual cycle
 - I don't know

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15. What menstrual products do you know of (even if you have not used them)?
- Tampons
 - Single-use pads
 - Cloth menstrual pads (you need to wash and re-use)
 - Menstrual cup
 - Menstrual underwear (menstrual-proof underwear that you need to wash and re-use)
 - Menstrual sponges
 - Other: _____
 - I don't know
16. What is the menstrual cycle? *Tick all the options that you think are correct.*
- It has 3 phases
 - It has something to do with the hormones
 - There are no changes in the body during the menstrual cycle
 - It has something to do with ovulation
 - I don't know

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IF YOU HAVEN'T HAD THE MENSTRUATION, YOU HAVE FINISHED!

Thank you very much for participating!

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PLEASE, CONTINUE ANSWERING IF YOU HAVE HAD THE MENSTRUATION 

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17. How old were you when you had the menstruation for the first time? _____
18. Do you have menstrual pain?
- Yes, always
 - Yes, sometimes
 - Very few times
 - No, never
 - I don't know
19. What do you do when you have menstrual pain? *Tick all the things that you do.*
- I take painkillers (e.g. Ibuprofen, paracetamol...)
 - I take hormonal contraceptives every day for menstrual pain
 - I use natural remedies
 - I cannot buy products for menstrual pain
 - I don't do anything
 - I do something else: _____
 - I don't have menstrual pain
 - I don't know

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20. Have you every spoken to someone about menstrual pain?
- Yes, with _____ (*e.g., my mother*)
 - No, with anyone
 - I don't know
21. Do you stop going to school when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
22. Do you stop exercising or going to physical education when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
23. Do you stop doing activities such as going to the pool or to the beach when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
24. Do you miss any plans with your friends when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
25. Do you have trouble concentrating at school when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
23. Do you feel less capable of doing an exam or evaluated activity when you have the menstruation?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
24. Did you know what the menstruation was before having it for the first time?
- Yes
 - No
 - I don't know
25. Did you feel ready to have the menstruation when you had it for the first time?
- Yes
 - No
 - I don't know



26. How do you usually feel when you have the menstruation? Tick all options that are true for you.

- Happy Embarrassed Other: _____
 Sad Relaxed
 Dirty Tired I don't know
 Angry Sensitive

27. Are you scared of staining your clothes with blood when you have the menstruation?

- Yes
 No
 I don't know

28. How often have you made an excuse not to say that you were menstruating?

- Always Very few times I don't know
 Sometimes Never

29. Has anyone ever made fun of you for having the menstruation?

- Yes
 No
 I don't know

30. Have you ever seen someone making fun of someone else for having the menstruation?

- Yes
 No
 I don't know

31. Are you embarrassed of buying or asking for menstrual products?

- Yes, always No, never
 Yes, sometimes I don't know
 Very few times Someone else buys them for me

32. What menstrual products do you use? Tick all the products that you use.

- Tampons I wear more than one piece of
 Single-use pads underwear
 Cloth menstrual pads Nappies
 Menstrual cup I don't use anything (free bleeding)
 Toilet paper Other: _____
 Menstrual underwear I don't know
 Menstrual sponge

33. Do you think menstrual products are too expensive?

- Yes
 No
 I don't know



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34. Have you ever lacked any money to buy menstrual products?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
35. Have you ever had to use menstrual products that you don't like because the ones you like are too expensive?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
36. Can you ask for menstrual products for free in your school?
- Yes
 - No
 - I don't know
37. Do you feel comfortable to ask for menstrual products in the following places? *Tick all options that are true for you.*
- School
 - Sports club
 - Youth centre
 - No, I don't feel comfortable
38. Have you ever gone to a health centre or pharmacy to ask about the menstruation?
- Yes
 - No, but I would like to go
 - No, but I would not like to go
 - I don't know
39. Have you ever used menstrual products for longer than it is recommended because you did not have a replacement?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
40. Have you ever used menstrual products for longer than it is recommended because you do could not find appropriate facilities to (e.g., individual bathroom, soap to wash your hands, clean bathroom,...)?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
41. In the last 6 months, have you had any of these symptoms?
- Genital rash
 - I haven't had any of these symptoms
 - Vaginal irritation
 - Other symptoms: _____
 - Genital redness or inflammation
 - Unusual vaginal discharge (colour/odour)
 - I don't know



42. If you have had symptoms, have you spoken about it with anyone?

- Yes, with _____
- No
- I don't know
- I haven't had any symptoms

43. If you have had symptoms, have you received any treatment?

- Yes, at _____ (e.g., health centre)
- No
- I don't know
- I haven't had any symptoms

Would you like to add anything about the menstruation?

Let us know here:

THANK YOU VERY MUCH FOR YOUR PARTICIPATION!

For peer review only

BMJ Open

Menstrual health and period poverty among young people who menstruate in the Barcelona metropolitan area (Spain): protocol of a mixed-methods study.

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2019-035914.R3
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Complete List of Authors:	Medina-Perucha, Laura; IDIAP Jordi Gol, Jacques-Aviñó, Constanza; IDIAP Jordi Gol; Universitat Autònoma de Barcelona Valls-Llobet, Carme; Centro de Análisis y Programas Sanitarios (CAPS) Turbau-Valls, Rosa; Institut Català de la Salut Pinzón, Diana; SomiArte Taller; Universitat Autònoma de Barcelona Hernández, Lola; La Caravana Roja Briales Canseco, Paula; Comunidad de Madrid Consejería de Educación López-Jiménez, Tomàs; Institut de Recerca en Atenció Primària Jordi Gol, Unitat Central de Recerca Solana Lizarza, Enara; Universidad Internacional de la Rioja - Campus de Logrono, Department of Education Munros Feliu, Jordina; Institut Català de la Salut, Atenció a la Salut Sexual i Reproductiva (ASSIR) Muntanya/La Mina Berenguera, Anna; Institut Universitari d'Investigació en Atenció Primària (IDIAP-Jordi Gol), ; Universitat Autònoma de Barcelona,
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3 **Menstrual health and period poverty among young people who menstruate in the**
4 **Barcelona metropolitan area (Spain): protocol of a mixed-methods study.**
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7 Medina-Perucha, L.¹, Jacques-Aviñó, C.^{1,2}, Valls-Llobet, C.³, Turbau-Valls, R.⁴, Pinzón, D.^{2,5},
8 Hernández, L.⁶, Briales Canseco, P.⁷, López-Jiménez, T.^{1,2}, Solana Lizarza, E.⁸, Munrós Feliu,
9 J.⁹, Berenguera, A.^{1,2,10}
10
11

12
13 ¹ Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
14 (IDIAPJGol), Barcelona, Spain.
15

16
17 ² Universitat Autònoma de Barcelona, Bellaterra (Cerdanyola del Vallès), Spain.
18

19
20 ³ Centro de Análisis y Programas Sanitarios (CAPS), Barcelona, Spain.
21

22
23 ⁴ Institut Català de la Salut (ICS), Barcelona, Spain.
24

25
26 ⁵ SomiArte Taller, Barcelona, Spain.
27

28
29 ⁶ La Caravana Roja, Murcia, Spain.
30

31
32 ⁷ Consejería de Educación, Comunidad de Madrid, Madrid, Spain.
33

34
35 ⁸ Universidad Internacional de La Rioja, Department of Education, Logroño, Spain.
36

37
38 ⁹ Atenció a la Salut Sexual i Reproductiva (ASSIR) Muntanya/La Mina. Institut Català de la
39 Salut (ICS), Barcelona, Spain.
40

41
42 ¹⁰ Departament d'Infermeria, Universitat de Girona, Girona, Spain.
43

44
45 **Corresponding author**
46

47 Dr Laura Medina-Perucha

48 Fundació Institut Universitari per a la recerca a l'Atenció Primària de Salut Jordi Gol i Gurina
49 (IDIAPJGol)

50 Gran Via de les Corts Catalanes, 591, attic

51 08007 Barcelona (Spain)

52 lmedina@idiapjgol.info

53 (0034) 93 482 46 17
54
55

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57 **Word count:** 5,115.
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ABSTRACT

Introduction. The importance of menstrual health has been historically neglected, mostly due to taboos and misconceptions around menstruation and androcentrism within health knowledge and health systems around the world. There has also been a lack of attention on “period poverty”, which refers to the financial, social, cultural and political barriers to access menstrual products and education. The main aim of this research is to explore menstrual health and experiences of period poverty among young people who menstruate (YPM). **Methods and analysis.** This is a convergent mixed-methods study which will combine a quantitative transversal study to identify the prevalence of period poverty among YPM (11-16 years old), and a qualitative study that will focus on exploring menstruation-related experiences of YPM and other groups (young people who do not menstruate (YNM); primary healthcare professionals; educators; and policymakers). The study will be conducted in the Barcelona metropolitan area between 2020 and 2021. Eighteen schools and 871 YPM will be recruited for the quantitative study. Sixty-five YPM will participate in the qualitative study. Forty-five YNM and 12 professionals will also be recruited to take part in the qualitative study. Socioeconomic and cultural diversity will be main vectors for recruitment, to ensure the findings are representative to the social and cultural context. Descriptive statistics will be performed for each variable to identify asymmetric distributions and differences among groups will be evaluated. Thematic analysis will be used for qualitative data analyses. **Ethics and dissemination.** Several ethical issues have been considered, especially as this study includes the participation of underage participants. The study has received ethical approval by the IDIAPJGol Research Ethics Committee [19/178-P]. Research findings will be disseminated to key audiences, such as YPM, YNM, parents/legal tutors, health professionals, educators, youth (and other relevant) organisations, general community members, stakeholders and policymakers, and academia.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- This study will address an important research gap on menstrual health and period poverty in high-income settings, from a gender and intercultural approach.
- A mixed-methods design will allow for the integration of quantitative (descriptive) and qualitative (in-depth) data.
- This study includes collaborations with a variety of key actors, following Responsible and Research Innovation (RRI) guidelines.
- The dissemination strategy includes a variety of audiences and will be co-created with study participants.
- The combination of data collection methods, and using a RRI and participatory research approach will require increased resources and time.

KEYWORDS

Menstrual health; period poverty; health services; education; young people

INTRODUCTION

Research on menstrual health is still scarce. Moreover, most research has been conducted in low-income countries[1–3], neglecting its need in high-income regions. Menstrual health is associated with the access of people who menstruate to accurate information on menstruation, menstrual products and clean and safe washing facilities. Menstrual health also needs to be understood as a tool for health promotion, and it is linked to experiences related to the menstrual cycle. Good menstrual health also includes tackling menstruation-related taboos, stigma and discrimination[4]. Promoting menstrual health is key to reach gender equity and promote health among people who menstruate. Menstrual health has even been suggested as a vital sign[5,6]. Despite the growing international commitment to focus on promoting menstrual health, there is still much to be done[2]. In this study, we will focus on “people who menstruate” rather than “women” not to exclude people who have a menstrual cycle but are not women/do not identify as women (e.g., male transsexual or male transgender).

Activist-led movements have increased awareness on the negative impact on the cost of menstrual products, socio-cultural practices and views on menstruation have on women’s health and wellbeing. These movements aim at promoting a “menstrual culture” that demystifies the menstrual cycle and are based on feminist and socio-cultural paradigms. Together with some health professionals, activism in Spain is already suggesting body awareness and knowledge about one’s menstrual cycle as tools for health promotion. Menstrual health education is crucial to understand and improve how people who menstruate relate to their menstrual cycle[4,7]. However, the role of the “menstrual products” and pharmaceutical industries in women’s menstrual health is strong. These are the companies which are delivering menstrual health education in schools in Spain. Considering that these events are enough for “menstrual health education” is questionable, as these companies rather focus on selling their products and on medicalising menstruation instead of delivering high quality education on the menstrual cycle and the wide range of products available[8]. In the meantime, many people who menstruate in Spain seem to still be unaware of how their menstrual cycle works and its relationship with their overall health[8].

Focusing on young people is crucial to understand their conceptions and experiences of menarche (first menstruation). Good health education among young people is a priority as their bodies are changing while reaching adulthood. As previously reported in a study by Plan International UK[4], it is essential that young people get access to menstrual health education, health services

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3 and products that protect their health and wellbeing. In this study, menstrual-related myths and
4 taboos were prevalent among young people. Stigma and embarrassment were a reality for many
5 girls as, for example, most of them did not feel comfortable discussing menstruation with their
6 school teachers. Besides and very importantly, most girls explained how they were unaware of
7 what was happening in their bodies and what to do when they first got their menstruation[4].
8 Another reason to focus on children and adolescents is that they are vulnerable groups to
9 experience stigma, discrimination, and social and health inequities.
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15 Inequities between people who menstruate and people who do not menstruate are also to be
16 highlighted. These are, for example, visible through the (still prevailing) stigma and
17 discrimination towards people who menstruate and menstruation itself[4]. In line with this
18 argument, productivity loss due to presentism and absenteeism at schools and workplaces among
19 people who experience menstrual pain needs to be considered too[9]. Social and health inequities
20 among people who menstruate (compared to people who do not menstruate) can be also explained
21 when menstruating is a source of social (e.g., normalisation of menstrual pain) and structural (e.g.,
22 not being able to get sick leave for menstrual pain) sanctions.
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29 The menstrual cycle is not a health condition to be medicalised. However, this is not how it seems
30 to be conceived within society and healthcare systems. This project stems from an opposition to
31 the predominant androcentrism in health science and healthcare systems. The concept of
32 androcentrism refers to having men (male humans) as the reference, the norm and the example
33 for all humans. In the health context this has translated into the invisibilisation of women, the
34 female body and women's health in health science, policy and practice[8,10–12]. As briefly
35 mentioned already, this project also questions the role of the industry (menstrual products and
36 pharmaceutical) in the medicalisation and socio-cultural conceptualisations of the menstrual cycle
37 and menstruation[8]. Instead, it is important that the menstrual cycle is understood as a natural
38 process that is associated with good health. This means that educating society and professionals
39 is a priority to promote health among young people who menstruate (YPM). Increased education
40 and a more positive conceptualisation of the menstrual cycle and menstruation could help YPM
41 being more aware of their bodies. In turn, this could help encourage menstruators to care for their
42 menstrual and general health, and aid the identification of some health conditions such as
43 endometriosis[13]. Improved education could also lead the disassociation of menstruation and
44 pain, and challenge myths and beliefs around the menstrual cycle and the use of hormonal
45 contraception. Last but not least, education could reduce menstruation-related stigma and
46 discrimination.
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57 One aspect of menstrual health is the access to menstrual products. Research in other countries,
58 such as Uganda[3] and the United Kingdom[4] has highlighted experiences of *period poverty*
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3 among young women. This term refers to barriers (financial, social, cultural and political) in
4 accessing menstrual products, menstrual education and access to healthcare services. Plan
5 International UK[4] recently explored period poverty in a high-income country through focus
6 groups with 64 adolescents. Their report revealed that 1 in 10 adolescents experience period
7 poverty in the United Kingdom. However, and to our knowledge, there have been no attempts to
8 identify the prevalence of period poverty at a community or population level.
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13 Despite social movements to promote menstrual health and to reduce menstrual products' taxes
14 in the last few years, menstrual health in Spain continues to be ignored. This is reflected in
15 national and regional public health strategies, in which menstrual health is never present. Even
16 when 27,7% of children were at risk of poverty in Catalunya in 2017[14], experiences of period
17 poverty among children and adolescents have not been explored. Social, cultural, financial and
18 political barriers to promote menstrual health, stigma and discrimination and the elimination of
19 period poverty have also been overlooked. Besides, menstrual products are not considered
20 necessity goods by law in Spain, holding a 10% tax (Spanish Law 37/1992, 28th December 2018).
21 Although in October 2018 the Spanish government guaranteed that tax retentions on menstrual
22 products should be reduced to 4%, this tax reduction has not been applied yet.
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30 This study will explore menstrual health and experiences of period poverty among YPM. We also
31 hope to identify barriers and facilitators that could promote menstrual health through the access
32 of good-quality education and healthcare. Also, to explore ways to improve menstrual health
33 experiences in YPM and reduce period poverty. This study will provide recommendations for
34 future research, policy and practice, aiming at addressing social inequities of health in YPM (and
35 especially amongst those that may be experiencing period poverty) in Spain and other high-
36 income countries with similar sociocultural contexts. The views of young people who do not
37 menstruate and professionals will also be considered in this project. Through this research, our
38 team aims to start a line of research on menstrual health and period poverty in the area of
39 Barcelona, hoping to scale up the study to other areas in Spain.
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47 **AIMS AND OBJECTIVES**

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49 This project aims to explore menstrual health and experiences of period poverty among young
50 people who menstruate (YPM) (11-16 years old). The study will be conducted in the Barcelona
51 metropolitan area between 2019 and 2021.
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55 The objectives will be:

- 56
57 1. To identify the prevalence of period poverty in YPM.
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- 2.
3. To explore socio-cultural understandings of menstruation and menstrual health in YPM, young people who do not menstruate (YNM) of the same age, health professionals, teachers, activists and policymakers.
4. To explore experiences of menstruation and period poverty among YPM.
5. To explore menstruation-related stigma and discrimination.
6. To identify barriers and facilitators to promote menstrual health, and to access education and healthcare for menstrual health.
7. To identify opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.
8. Provide recommendations for future research, policy and practice.

METHODS AND ANALYSIS

The study will be coordinated by the research team at the [Research Centre name]. However, a working group of women that includes health professionals, educators, youth representatives and menstrual health activists has been composed, considering Responsible Research and Innovation (RRI) guidelines[15]. The members of the working group will regularly contribute to the development of the project attending regular meetings. They will also be involved in developing key study materials (e.g., study protocol, non-validated questionnaire, topic guides) and writing research publications and other dissemination materials. Taking this Responsible and Research Innovation (RRI) approach will be key to conduct inclusive research not only *for* but *with* the community and other key agents. This research is based on a gender-based [8,16,17] and intercultural approach [18–20]. These approaches go in line with acknowledging sociocultural differences and embracing a respectful and non-discriminatory perspective on research.

Study design

This research is a convergent mixed-methods study that will include a quantitative study and a qualitative study. Quantitative research will allow to quantify the extent of period poverty and some menstrual health experiences. Qualitative research will provide an in-depth exploration of these phenomena. It will start in September 2019 and end in September 2021. A Gantt Chart is provided in Figure 1. Data will be collected in Catalan and Spanish, the two official languages in the Barcelona metropolitan area.

Quantitative study

This is a cross-sectional questionnaire-based study. A non-standardised questionnaire (see supplementary material) will be used to calculate the composite main variable “period poverty”. Other variables that will be measured and will be used to develop the variable “period poverty”.

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3 These will be: 1) use of menstrual products, 2) financial (and other) barriers to access menstrual
4 products, 3) use of hormonal contraception, 4) period pain and menstrual disorders, 5) mental
5 health, 6) access to menstrual health consultations, 7) menstruation-related school absenteeism,
6 8) menstruation-related interference on school performance and other activities, 9) menstruation-
7 related stigma and discrimination, 10) access to menstrual health education, and 11) menstrual
8 hygiene and management.
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13 Sociodemographic data will also be collected (age, school, primary healthcare centre, deprivation
14 index, household composition). All variables and sociodemographic data (except for the
15 deprivation index) will be collected using the self-reported questionnaire. The deprivation index
16 will be calculated based on available databases such as the MEDEA deprivation index[21].
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20 21 Qualitative study

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23 There will be three phases of data collection for the qualitative study:
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25 Phase I. Semi-structured interviews using photo elicitation techniques[22]: 20 YPM will take part
26 in semi-structured interviews using photo elicitation techniques. These interviews will take place
27 in schools making sure that participants are in a familiar and comfortable environment. The
28 interviews will focus on objectives 2-4.
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32 Phase II. Group discussions: Nine group discussions (three with YPM only, three with YNM, and
33 three mixed) will be run with an estimate of 45 YPM and 45 YNM. Participants for the group
34 discussions will be stratified by age (11-12 years old, 13-14 years old, and 15-16 years old). Group
35 discussions will be conducted within the natural context of a classroom. Observation and group
36 discussion techniques will be used to collect data. Objectives 2-6 will be covered in this phase of
37 data collection.
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41 Phase III. World Café[23]: Health professionals, teachers, policymakers, activists and youth
42 representatives will be invited to participate in a world café. There will be a maximum of 12
43 professionals in the session. The aim of phase III will be to mainly address objectives 4-6.
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48 49 **Materials**

50 51 Quantitative study

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53 A non-standarised questionnaire has been devised for this study by the working group (see
54 supplementary material). Several meetings were organised to work on the development of the
55 variables and the questionnaire, following the guidance of previous research and published work
56 on questionnaire design [24].
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Qualitative study

Topic guides will be developed for each phase of the qualitative study. Developing the topic guides will be a collaborative process between the research team and the working group. The topic guides will be based on the aims of this research, previous evidence, the team's expertise and data previously collected for this study (Phase II and Phase III).

The main topic areas will be 1) socio-cultural understandings of menstruation and menstrual health; 2) personal experiences of menstruation; 3) experiences of period poverty; 4) experiences of menstruation-related stigma and discrimination; 5) barriers and facilitators to promote menstrual health, and to access education and healthcare for menstrual health; and 6) opportunities to improve menstrual health-related experiences of YPM and reduce period poverty.

All materials for the quantitative and qualitative studies will be piloted with the target population before using them for data collection.

Participants

There will be different groups of participants: YPM, YNM, and professionals (health professionals, teachers, policymakers, activists, and youth representatives).

Participant selection

For both the quantitative and qualitative studies recruitment will be non-probabilistic (as not all schools and individuals will have the same probability of being recruited) and purposive (as schools and participants will be selected based on the requirements of the study).

YPM and YNM will be recruited from (public, private and semi-private) schools in the Barcelona metropolitan area. Schools will be identified to be representative of the socioeconomic diversity in the Barcelona metropolitan area. The MEDEA index[21] will be used to determine the socioeconomic level of each school. Cultural diversity will also be a factor for recruiting schools and individuals. The team will ensure that the experiences of socially excluded communities, such as the gipsy community and migrants, are represented in this research. Considering that around 18 schools will be recruited, we will aim to recruit three or four schools from each of the five MEDEA levels. First, permission will be requested from the council of each municipality where recruitment will take place. Then, schools will be contacted and informed about the study, based on a list of schools in the Barcelona metropolitan area and professional contacts of the working group. The research team will organise meetings at participating schools to inform staff and adolescents about the study. Information sheets and consent forms will be given to adolescents to inform and ask parents and legal tutors for consent to participate. An adapted information sheet will be given to minors. Parents and legal tutors will be asked to return a signed copy of the

consent form if they want their children to participate. This procedure will be used for each stage of the project involving adolescents (quantitative study and Phase I and II of the qualitative study).

In Phase III of the qualitative study, professionals will be recruited using snowballing techniques and by identifying key informants for this study. Diversity in the professionals' background and expertise will be considered to ensure diversity in the discourses. Participants will be required to sign an informed consent to take part in the study.

Inclusion and exclusion criteria

The inclusion and exclusion criteria are available in Tables 1-3. The researchers will not actively exclude people with functional diversities, unless they do not meet the inclusion criteria (e.g., they cannot give consent or communicate with the researchers).

Table 1

Inclusion and exclusion criteria of young people who menstruate (YPM)

Young people who menstruate (YPM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have not (and will not) menstruate
Have (or will) menstruate	Cannot understand and/or provide consent
Have given their consent to participate	Cannot communicate well in Catalan or Spanish
Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 2

Inclusion and exclusion criteria of young people who do not menstruate (YNM)

Young people who do not menstruate (YNM)	
Inclusion criteria	Exclusion criteria
Are between 11 and 16 years old	Are below 11 or above 16 years old
Are attending a participating school	Have (or will) menstruate
Have not (and will not) menstruate	Cannot understand and/or provide consent
Have given their consent to participate	Cannot communicate well in Catalan or Spanish

Parents or legal tutors have signed the consent form	
Have a good command of Catalan or Spanish	

Table 3

Inclusion and exclusion criteria of professionals

Professionals	
Inclusion criteria	Exclusion criteria
Have experience working in relevant areas of/for menstrual health	Do not have experience working in relevant areas of/for menstrual health
Have signed the consent form	Cannot understand and/or provide consent
Have a good command of Catalan or Spanish	Cannot communicate well in Catalan or Spanish

Sample size

Quantitative study

A total of 871 YPM will be recruited for the quantitative study in 18 schools in the Barcelona Metropolitan area. The sample size is based on power calculations considering the composite variable “period poverty” as the main variable. Maximum indetermination of the main variable (proportion of 50%) was assumed. It was also considered that there are 53,354 young girls attending schools in the Barcelona metropolitan area between 11 and 16 years old. These assumptions were considered in order to obtain a precision of 5%, expecting that 50 young girls of each participating school will take part in the study. Also, due to the effect of the design an interclass correlation of 0,026 [3] will require a minimum of 871 participants (and 18 schools). These estimates have been calculated assuming an alfa risk of 5%. PASS software was used for the sample size calculations [PASS 15 Power Analysis and Sample Size Software (2017). NCSS, LLC. Kaysville, Utah, USA].

Qualitative study

Sixty-five YPM, 45 YNM and 12 professionals (health professionals, teachers, policymakers, activists, and youth representatives) will be recruited for the qualitative study. The sample size will be dependent on data saturation.

Data analysis plan

Quantitative study

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3 Descriptive statistics will be used for each variable to identify asymmetric distributions. The
4 continuous variables will be analysed as mean (SD) or median (25th and 75th centiles) based on
5 the normality/non-normality of the distribution, and categorical variables will be described as
6 percentages. To evaluate differences among groups, the appropriate statistics will be applied
7 based on the type of variable and their distribution (χ^2 , F-distribution, Student's t-distribution,
8 analysis of variance, Mann-Whitney U and Kruskal-Wallis). To estimate the magnitude of the
9 associations between the selected variables and period poverty, prevalence ratios and their 95%
10 confidence intervals will be computed by general linear models (Poisson regression models with
11 robust variance and logistics models).
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17 18 Qualitative study

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20 Qualitative data will be analysed using Thematic Content Analysis[23]. Once the audio
21 recordings are transcribed, the researchers will familiarise themselves with the data. This will lead
22 to pre-analytical insights of the data. The next step will be to 1) identify relevant themes within
23 the text, 2) divide the text into units of meaning, 3) coding of the data, 4) generation of categories
24 by grouping codes, 5) analysis of each category, and 6) elaboration of new text. Results will then
25 be discussed with the working group until consensus is reached (triangulation).
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31 32 **Patient and Public Involvement**

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34 The research questions and aims of this study were driven by community-led social movements
35 on menstrual health and period poverty. Key agents and community members were consulted to
36 design the study, being some of these agents part of the working group. The working group will
37 be actively involved in all stages of the study. Together with participants, the working group will
38 also contribute to the communication and dissemination of the findings (see Dissemination
39 Strategy section on page 12). All materials used for this study (e.g., questionnaire and topic
40 guides) will be designed and piloted with the target population.
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46 47 **Ethics and Dissemination**

48 49 **Ethical considerations**

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51 We have obtained the necessary ethical approvals prior to the start of the research from our
52 organisation (IDIAPJGoL) [19/178-P]. We have considered a number of ethical issues. A main
53 consideration is that this research involves the participation of individuals who are not able to
54 give consent (minors). Adolescents' consent will be granted through representation (i.e., parents
55 or legal tutors) according to the Spanish Law on Biomedical Research (14/2007).
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3 All activities included in the study will be carried out according to existing guidance in ethics as
4 indicated in the Universal Declaration on Bioethics and Human Rights adopted by UNESCO
5 (19/10/2005); the Council of Europe Convention for the Protection of Human Rights and Dignity
6 of the Human Being with regard to the Application of Biology and Medicine (1997) and its
7 additional protocol on biomedical research (2005); the Helsinki Declaration (2013) and relevant
8 EU laws (European Parliament and Council Directive 2001/20/EC); the Spanish Law on
9 Biomedical Research (14/2007); and the LOPD (Spanish Law on Personal Data Protection)
10 (3/2018).

11 12 13 14 15 16 Informed consent

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19 Verbal and written informed consent will be requested from all participants prior to their
20 participation in the study. Most participants will be minors. This has important ethical
21 implications. All information will be given to underage participants in a comprehensive way, and
22 study materials will be adapted to ensure readability and comprehensiveness. Parents or legal
23 guardians will be notified of their adolescents' invitation to the study. A signed written consent
24 will be requested from all parents or legal guardians for all underage participants. The researchers
25 will ensure that participants are able to consent, and that they understand what their participation
26 entails.
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32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 Confidentiality and anonymity

Confidentiality and anonymity will be carefully ensured. Contact details will only be requested to those participants that are willing to take part in succeeding stages of the study. Physical identifiable data will be securely stored at the IDIAPJGoL in a locked cabinet. Digital information will be securely stored at the IDIAPJGoL secure portal. Only the research team will have access to the data. All data presented when disseminating the findings from this study will be anonymised. All identifiable data will be removed from transcriptions and participants will be assigned a participant code. Anonymity in the photographs used in the photo-elicitation interviews will also be ensured. The team will do this by not using photographs in which people are identifiable, unless written consent is given from identifiable people in the photographs. Anonymised data will be made available upon request to the authors.

Potential risks

Taking part in this study will involve the discussion of sensitive topics (i.e., menstrual health, situations of inequity, sexual relationships, and other related topics) and involves the inclusion of a vulnerable group (minors). Discussing sensitive topics and the inclusion of minors are necessary for the purposes of this study. In order to minimise these issues, information about the nature of

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3 the study will be disclosed prior to seeking consent and before data collection. The researchers
4 will conduct the study sensitively at all times.
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7 A protocol has been prepared in case the researchers had immediate concerns of harm, or a
8 participant gets distressed during their participation in the study. If this happened with underage
9 participants, their school tutor and parents will be informed (with the participants' permission).
10 Participation will be paused or stopped if a participant gets distressed. It will be the participant's
11 decision whether they decide to continue taking part in the study. The research team will ensure
12 that all participants are able to seek support and/or advice if needed.
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17 All participants will be made aware of their right to withhold information that they are not willing
18 to share, as well as withdrawing from the study or removing their data at any time (prior to data
19 analyses).
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23 Participants taking part in the interviews, group discussions and World Café will receive a 10€
24 voucher as a token of thanks for their participation. Participants will also receive a debriefing
25 form that includes a list of resources (books, websites and Instagram accounts) to learn about
26 menstrual health.
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30 **Dissemination strategy**

31 Findings will be disseminated to key audiences. These will be YPM, YNM, parents and legal
32 tutors, health professionals, educators, youth (and other relevant) organisations, general
33 community members, stakeholders and policymakers, and academia. Back translation methods
34 will be used to ensure the quality of any translations to English.
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39 The dissemination strategy will include a dissemination project produced by YPM and YNM,
40 with the support of the research team. The content and format will be chosen by YPM and YNM
41 involved in the development of this dissemination project. Examples of formats would be an art
42 exhibition or a book.
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47 The working group will also organise meetings and workshops at "citizen science" events and
48 schools, aimed at several key audiences. These meetings and workshops will involve study
49 participants (YPM, YNM, and professionals) who will co-lead the sessions.
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52 The working group will prepare short reports, policy briefs, presentations and meetings with
53 stakeholders and policymakers, activists, health professionals, educators and youth (and other
54 relevant) organisations. The materials, presentations and meetings will be prepared in
55 collaboration with study participants.
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On the other hand, scientific publications will be prepared. The study will also be presented at national and international conferences. This part of the strategy will be led by the research team, with the collaboration of the working group and study participants.

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8 **AUTHORS' CONTRIBUTIONS**

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11 LMP has led and coordinated the conception and design of this study. She has written this
12 manuscript. AB has been involved in the conception and design in this study. She has reviewed
13 and made substantial contributions to this manuscript. TLJ has contributed to the design of the
14 quantitative study, performed power calculations and written the plan for the quantitative data
15 analyses. He has reviewed and made substantial contributions to this manuscript. CJA, CVL,
16 RTV, DP, LH, PBC, ESL and JMF have contributed to the design of this study. She has reviewed
17 and made substantial contributions to this manuscript.
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24
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27
28

29 **COMPETING INTEREST STATEMENT**

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32 The authors declare no conflict of interest.
33

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48 **FIGURE LEGEND**

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50 Figure 1. Gantt Chart.
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FIGURE

STUDY PHASES	TASKS	TEAM	Year 1												Year 2											
			Months												Months											
			1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Transversal	Meetings research group	Research team	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Meetings working group	Working group																								
Study preparation	Ethical approvals	Research team	■																							
	Creation of working group	Research team	■																							
	Development of study protocol	Working group	■																							
	Development of study materials	Working group	■	■																						
	Establish contacts for recruitment	Working group		■	■	■																				
Recruitment and data collection	Recruitment schools	Working group					■																			
	Recruitment participants	Research team					■																			
	Completion of questionnaires	Research team					■	■																		
	Individual interviews	Research team						■	■																	
	Group discussions	Research team								■	■															
	World Café	Research team										■														
Data analyses	Transcribing	Research team; transcriber						■	■	■	■	■														
	Quantitative analyses	Research team						■	■	■	■	■														
	Qualitative analyses	Research team											■	■	■											
	Discussion of results	Working group							■	■	■	■	■	■	■											
Dissemination	Dissemination project	Participants; working group															■	■	■	■	■	■	■	■		
	Dissemination of final product	Participants; working group																			■	■	■	■		
	Dissemination of results	Working group	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Publication 1 (study protocol)	Working group	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		
	Publication 2 (quantitative data)	Working group									■	■	■	■	■											
	Publication 3 (qualitative data; interviews and group discussions)	Working group															■	■	■	■	■	■	■	■		
	Publication 4 (qualitative data; world café)	Working group																			■	■	■	■		
Evaluation and impact	Impact evaluation	Working group							■													■	■			

Figure 1. Gantt Chart

MENSTRUAL HEALTH QUESTIONNAIRE

You will need to complete all questions if you have menstruated already. Please complete questions 1 to 16 if you have not had the menstruation yet.

Your answers are anonymous so nobody will be able to know that you have completed this questionnaire. It is very important for you to know that there are no right or wrong answers, all answers are welcome!

Date: _____

Indicate with an X or write your answer to the following questions

1. How old are you? _____
2. What city do you live in? _____
3. What is the name of your school? _____
4. What are you studying? _____
5. What country were you born in? _____
6. What countries were your carers (e.g. parents/tutors) born in?
 - My carer (e.g. parent/tutor) 1 was born in _____
 - My carer (e.g. parent/tutor) 2 was born in _____
 - I don't know
8. Do you feel part of any of these communities? *Tick all options that are true for you*

<ul style="list-style-type: none"> ○ Gipsy ○ Christian ○ Catholic ○ Islamic ○ Hinduist 	<ul style="list-style-type: none"> ○ Buddhist ○ Jewish ○ Other _____ ○ None of these ○ I don't know
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9. Have you ever menstruated before?
 - Yes
 - No
 - I don't know

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10. Do you think menstrual pain is “normal”?
- Yes, it always hurts
 - Yes, it hurts sometimes
 - No, it shouldn't hurt too much
 - No, it doesn't hurt
 - I don't know
11. Where have you learnt about menstruation? Tick all options that are true for you
- Family
 - School
 - Friends
 - Internet
 - Social networks (e.g. Instagram)
 - TV
 - Magazines or books
 - Other _____
 - I don't know
12. Would you like to have more information on menstruation? Tick all options that are true for you
- Yes, on what the menstruation is
 - Yes, on menstruation duration
 - Yes, on how menstruation can have an impact on my daily life
 - Yes, on menstruation delays
 - Yes, on menstrual products
 - Yes, on something else: _____
 - No, I have enough
 - No, I am not interested
 - I don't know
13. Are you embarrassed to talk about menstruation?
- Yes
 - No
 - I don't know
14. What is menstruation? Tick all the options that you think are correct.
- Blood that comes out of the vagina
 - People menstruate every 3 weeks
 - It is common to menstruate over 10 days or more
 - Women menstruate all their lives
 - It is related to the menstrual cycle
 - I don't know
15. What menstrual products have you heard of (even if you have not used them)?

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- Tampons
 - Single-use pads
 - Cloth menstrual pads (washable and re-usable)
 - Menstrual cup
 - Menstrual underwear (menstrual-proof underwear, washable and reusable)
 - Menstrual sponges
 - Other: _____
 - I don't know

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16. What is the menstrual cycle? *Tick all the options that you think are correct.*

- It has 3 phases
- It has something to do with hormones
- There are no changes in the body during the menstrual cycle
- It has something to do with ovulation
- I don't know

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IF YOU HAVE NOT MENSTRUATED ALREADY, YOU HAVE FINISHED!

Thank you very much for participating!

PLEASE, CONTINUE ANSWERING IF YOU HAVE MENSTRUATED BEFORE 

17. How old were you when you menstruated for the first time? _____

18. Do you get menstrual pain?

- Yes, always
- Yes, sometimes
- Very few times
- No, never
- I don't know

19. What do you do when you have menstrual pain? *Tick all the things that you do.*

- I take painkillers (e.g. Ibuprofen, paracetamol...)
- I take hormonal contraceptives every day for menstrual pain
- I use natural remedies
- I cannot buy products for menstrual pain
- I don't do anything
- I do something else: _____
- I don't get menstrual pain
- I don't know

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20. Have you every spoken with someone about menstrual pain?
- Yes, with _____ (e.g., my mother)
 - No
 - I don't know
21. Do you stop going to school when you menstruate?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
22. Do you stop exercising or going to physical education when you menstruate?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
23. Do you stop doing activities such as going to the pool or to the beach when you menstruate?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
24. Do you miss any plans with your friends when you menstruate?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
25. Do you have trouble concentrating at school when you menstruate?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
23. Do you feel less capable of taking an exam or evaluated activity when you menstruate?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never
24. Did you have information on menstruation before menstruating for the first time?
- Yes
 - No
 - I don't know
25. Did you feel ready to menstruate when you menstruated for the first time?
- Yes
 - No
 - I don't know
26. How do you usually feel when you have menstruate? *Tick all options that are true for you.*
- Happy
 - Embarrassed
 - Other: _____
 - Sad
 - Relaxed
 - Dirty
 - Tired
 - I don't know
 - Angry
 - Sensitive



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27. Are you scared of staining your clothes with blood when you menstruate?
- Yes
 - No
 - I don't know
28. How often have you made up an excuse not to say that you were menstruating?
- Always
 - Very few times
 - I don't know
 - Sometimes
 - Never
29. Has anyone ever made fun of you for menstruating?
- Yes
 - No
 - I don't know
30. Have you ever seen anyone making fun of someone else for menstruating?
- Yes
 - No
 - I don't know
31. Are you embarrassed of buying (or asking for) menstrual products?
- Yes, always
 - No, never
 - Yes, sometimes
 - I don't know
 - Very few times
 - Someone else buys them for me
32. What menstrual products do you use? Tick all the products that you use.
- Tampons
 - I wear more than one piece of
 - Single-use pads
 - underwear
 - Cloth menstrual pads
 - Nappies
 - Menstrual cup
 - I don't use anything (free bleeding)
 - Toilet paper
 - Other: _____
 - Menstrual underwear
 - I don't know
 - Menstrual sponge
33. Do you think menstrual products are expensive?
- Yes
 - No
 - I don't know
34. Have you ever lacked any money to buy menstrual products?
- Yes, always
 - Very few times
 - I don't know
 - Yes, sometimes
 - No, never



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35. Have you ever had to use menstrual products that you don't like because the ones you like are too expensive?
- Yes, always Very few times I don't know
- Yes, sometimes No, never
36. Can you get menstrual products for free in your school?
- Yes
- No
- I don't know
37. Do you feel comfortable asking for menstrual products in the following places? *Tick all options that are true for you.*
- School Sports club
- Youth centre No, I don't feel comfortable
38. Have you ever asked about menstruation in your health centre or pharmacy?
- Yes
- No, but I would like to
- No, but I would not like to
- I don't know
39. Have you ever used menstrual products for longer than it is recommended because you did not have a replacement?
- Yes, always Very few times I don't know
- Yes, sometimes No, never
40. Have you ever used menstrual products for longer than it is recommended because you could not find appropriate washing facilities (e.g., individual bathroom, soap to wash your hands, clean bathroom,...)?
- Yes, always Very few times I don't know
- Yes, sometimes No, never
41. Have you had any of these symptoms in the last 6 months?
- Genital rash I haven't had any of these symptoms
- Vaginal irritation Other symptoms:
- Genital redness or inflammation _____
- Unusual vaginal discharge (colour/odour) I don't know



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3 42. If you have had symptoms, have you spoken about it with anyone?
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- 5 ○ Yes, with _____
6 ○ No
7 ○ I don't know
8 ○ I haven't had any symptoms
9
10

11 43. If you have had symptoms, have you received any treatment?
12

- 13 ○ Yes, at _____ (e.g., health centre)
14 ○ No
15 ○ I don't know
16 ○ I haven't had any symptoms
17
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20
21
22 **Would you like to add anything?**

23 **Let us know here:**

24 _____
25 _____
26 _____
27 _____
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29 _____
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33 **THANK YOU VERY MUCH FOR YOUR PARTICIPATION!**
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