

Menstrual poverty among young women: a cross-sectional study in the urban context of Barcelona, Spain.

Pedro Gallo¹, Albert Julià¹, Marga Mari-Klose¹, Julia Serra¹, Joan Bellavista¹, Sandra Escapa¹

¹Department of Sociology, University of Barcelona, Barcelona, Spain.

Abstract:

Menstrual poverty has become a global issue, affecting women who do not have access to the menstrual products they need. Most of the related literature is based on low and middle-income countries' facts and experiences. Using the 2020 Youth Survey in Barcelona, this cross-sectional study provides novel data on the prevalence and the factors associated with menstrual poverty in an urban context (Barcelona) in a high-income country (Spain) with a randomly selected representative sample of 700 young women aged 15 to 34. Descriptive statistics and logistic regression models were used in the analysis. Results show that 15,3% of young women in Barcelona reported facing financial barriers to access menstrual products. Further, those young women with a high level of material deprivation (OR=4.42; CI=2.14-9.16), those who are not living independently from their parents (OR=0.50; CI=0.28-0.90) and women with a non-UE origin (Latin-Americans: OR=0.54; CI=0.31-0.93; Others: OR=0.06; CI=0.01-0.46) are associated with a greater probability of suffering from menstrual poverty. Our findings advocate that the measurement of poverty should consider individual aspects and needs, and not only the household income level as the reference. Further, we would encourage rethinking poverty measurement with a gender perspective, as well as identifying how deprivations overlap to aggravate the experience of poverty.

Keywords:

Menstrual poverty, young women, material deprivation, Spain, Youth Survey

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Introduction

Menstrual poverty has become a globally recognized public health issue (The World Bank, 2018). As stated by WHO-UNICEF, menstrual poverty includes lack of access to clean absorbents, or access to soap and water as well as to basic information about the menstrual cycle, and how to manage it with dignity without discomfort or fear (WHO-UNICEF, 2012; UNICEF, 2019). Despite this growing awareness, normative definitions related to menstrual poverty are relatively new and evolving. In this context, menstrual poverty is frequently associated with financial, social, cultural, and political barriers in accessing menstrual products, menstrual education, access to healthcare services (Angulo-Olaiz et al., 2014; Herbert et al., 2017; ACLU & Poverty Equity, 2019; Crockett et al., 2019), shame and stigma (Tull, 2019; Knight, 2020; Medina-Perucha et al., 2020; Rubinsky et al., 2020; Crawford & Waldman, 2021).

It has been reported that menstrual poverty might be associated with physical, emotional and social dysfunction resulting in a decline in school performance and attendance (Sivakami et al., 2019). School absenteeism, disengagement and the gender gap have been emphasized as important consequences of menstrual poverty in low, middle, and high-income countries (Houston et al., 2006; UNICEF, 2012; Sommer et al., 2015; Hennegan et al., 2016; Hennegan & Montgomery, 2016; Sommer et al., 2016a; Cotropia, 2019). To a lesser extent, some studies have also examined the effect of menstrual poverty on the loss of job opportunities and productivity losses (Sommer et al., 2016b; Schoep et al., 2019). Health-related outcomes have also been reported as a result of menstrual poverty (So-Kum Tang et al., 2003, Farage et al., 2011; Sumpter & Torondel, 2013; Cardoso et al., 2021), particularly an increased risk of both poor physical health (infections, quality-of-life, infertility, recurrent abortions and ectopic pregnancies) and emotional wellbeing (psychosocial consequences including shame, insecurity, anxiety, and fear of stigma). This situation might have been recently aggravated by the Covid-19 health and socioeconomic crisis (Jahan, 2020; Crawford & Waldman, 2021) making menstrual poverty a rather more visible phenomenon.

Most of the published literature to date is based on low and middle-income countries' data and experiences in countries such as India, Kenya, Tanzania, Ghana, Uganda, Bolivia, Malawi, Iran, Saudi-Arabia, Zimbabwe, or Nepal (Sommer et al., 2015; Hennegan & Montgomery, 2016; Tull, 2019; Crawford & Waldman, 2021). The World Bank (2018) estimates that 500 million women and girls globally lack access to adequate facilities for menstrual hygiene management, and most of them are concentrated in low and middle-income countries. While the overwhelming majority of research on menstrual hygiene needs focuses on the experiences of women in low and middle-income countries, recent research suggests that the experience of menstrual poverty may be a common affair for low-income women in high-income countries, too (Hall, 2018; Sebert Kuhlmann et al., 2019;

Thornton, 2020; Wall, 2020; Barrington et al., 2021; Briggs, 2021; Cardoso et al., 2021; Ennis et al., 2021; IdiapGol, 2021; Khan & Oveisi, 2021; Schmitt et al., 2021). In recent years some studies concerning menstrual poverty in high-income countries (Australia, Canada, Netherlands, Spain, UK, USA), have come to light, from which a high proportion are qualitative studies, largely using interviews and focus groups techniques to uncover lived experiences, perceptions, views and attitudes towards menstrual poverty (Vora, 2017; Hall, 2018; Plan International UK, 2018; Kuhlmann et al., 2019; Barrington et al., 2021; Briggs, 2021). Indeed, despite we have witnessed a number of relevant policy decisions in Canada, US and UK (England and Scotland) in this area such as public coverage of menstrual products in schools, removing taxes on such products, awareness and information campaigns, there are not many published studies based on survey data with a representative sample covering this issue.

We hereby account for five referenced studies that manage quantitative data on the topic. Some of these have been published as original pieces of research and others remain as datasets or research reports on the web. The 2017 Plan International UK survey on menstruation, reports that 10% of 14-21 year-old girls were unable to afford menstrual products in England (Tingle & Vora, 2018). More recently, during the coronavirus pandemic, Plan International UK carried out another survey and found that 3 in 10 girls struggled to afford or access menstrual products and 54% had used toilet paper as an alternative (Plan International UK, 2021). Similarly, a 2018 study in the city of London revealed that 17% of 16-24-year-olds girls have experienced menstrual poverty (Mayor of London, 2018). This same survey continues reporting that 30% of young women say they have had to use a less suitable menstrual product due to cost. In Canada, a 2019 survey conducted by Plan International Canada found that almost two-thirds of the female population aged 14 to 55 have had to miss out on an activity because of concerns about not being able to access menstrual products during their menstruation (Plan International Canada, 2019). Cardoso et al. (2021) report on a national online survey conducted in the US in 2019 on the frequency of menstrual poverty. They report that 14.2% of undergraduate women aged 18-24 had experienced menstrual poverty in the past year. Finally, an ongoing online survey with a self-selected sample in Spain (Medina-Perucha et al., 2020; IdiapGol, 2021) has recently reported that 2 in 10 women 18 to 55 years old had faced some difficulty in purchasing/accessing menstruation products. In this respect, the primary objective of this paper would be to provide the first published data on the prevalence of menstrual poverty among young women in an urban context in southern Europe using a cross-sectional study with a randomly selected and representative sample.

A second paramount purpose of our study is to identify key socio-demographic and economic factors associated with menstrual poverty in this population. In this regard, menstrual poverty may well be situated within the wider problem of growing risk of poverty particularly among children and young

adults in Spain as well as in other high-income countries (OECD, 2008; Mari-Klose and Mari-Klose, 2010). In 2020 almost one out of every four adults aged 16-29 live in households experiencing difficulties to make ends meet, and 9.3% were facing severe material hardship (INE, 2020). This percentage is higher than the general population (7%), which reveals a higher concentration of young people living in households under financial strain. It is likely that menstrual products are often less affordable for these households. We thus expect that those young women experiencing high levels of material deprivation and lower income levels are more likely to be exposed to menstrual poverty.

We understand, however, that the young population in Barcelona, as well as in most urban settings, is not a homogeneous one (Antón-Alonso et al., 2018; Ajuntament de Barcelona, 2021). Likely, menstrual poverty may be conditioned by other variables that represent youth's life transitions to adulthood, such as getting a job or living independently from their parents (Gentile, 2005; Verd et al., 2019). Indeed, the economic capacity of young people is closely related to its position in the labor market as their main source of income. The economic crisis pushed youth unemployment rates to unsustainable levels in Spain reaching its maximum value (42.4%) in 2013 (Martínez-García, 2015). Since then, this rate has gradually declined to 23.8% in 2019, but the health and economic crisis resulting from the Covid-19 pandemic has raised unemployment again. Youth unemployment in Spain accounts for over 40% of the population under 25, which places Spain at the forefront of Europe (Informe de la Juventud, 2020). Unemployed young women, as well as those other women living in low-income households, would be rather more exposed to experiencing menstrual poverty when compared to those other in employment. Similarly, high and growing rates of youth residential dependency may embellish the figures of youth poverty (Mari-Klose et al., 2008). Late residential independence is in part associated to the strategy of young people to improve their education level, and to cope with the insecurity and the structural instability of the labor market (Moreno et al., 2012). Emancipation is thus frequently deferred until sufficient resources are accumulated (Valls, 2015). Accordingly, we would expect emancipated young women to be less exposed to menstrual poverty.

This study aims therefore at the identification of both menstrual poverty prevalence among young women in Barcelona, and its association to socioeconomic characteristics of the population affected. This will assist in the design of tailored policies and, thereupon, foster that women and girls participate equally in society, with dignity and comfort.

Methods

Study Design

To carry out this research, we made use of the database resulting from the *2020 Youth Survey* in Barcelona (*Enquesta a la Joventut de Barcelona*), and was provided to us by the Barcelona City

Council. The questionnaire used in the survey counted with the approval of the Research Unit in the Àrea de Drets Socials, Justícia Global, Feminismes i LGTBI (Barcelona City Council responsible department for the 2020 Barcelona Youth Survey). This is a cross-sectional individual-level study. It is based on a representative survey of individuals aged 15 to 34 in the city of Barcelona. The overall objective of the survey is to provide knowledge about the living conditions, lifestyles and values of young people in the city of Barcelona. The 2020 Youth Survey is the fifth edition of the survey (conducted every four to five years). The information gathered by the survey was registered using Anonymous-CAPI face-to-face data collection method (Computer-Assisted Personal Interviewer). Data were collected in the period March-June 2020. Interviewers visited a number of households randomly selected according to a set of route maps in different neighbourhoods in Barcelona. The households were therefore previously identified for each interviewer, and the selected individuals were informed on the purpose of the survey and all agreed to participate. The interviewer read out the questions face-to-face to the interviewee and then wrote down the answers in a tablet. Part of the questionnaire was self-administered to avoid response conditioning and possible bias. Self-administered questions included menstrual poverty; tobacco, alcohol and drugs consumption; sexuality; being or not in a relationship; and suffering discrimination, harassment and/or violence.

Sample

The survey sample was comprised of 1,407 subjects who were selected through a stratified random sampling method from the municipal census. The sample was first stratified according to the household average income of the neighbourhood of residence (low, middle, and high income). Then, crossed quotas were established by nationality (Spanish and rest), sex and age (15 to 19 years, 20 to 24 years, 25 to 29 years, and 30 to 34 years), following the distribution of the study population. Proportional quota sampling was used. The sample group of young women in this study represented 50.5% of the initial sample (n=711). The selection of variables used in the regression models lowered the sample to 700 women from 15 to 34 years old. A descriptive analysis was performed to verify that the lost cases (n=11) do not correspond to any specific social profile.

Menstrual poverty indicator

We take menstrual poverty as financial and material barriers to accessing menstrual products (Period Poverty Taskforce, 2019; Sommer et al., 2019; Holst et al., 2022). The indicator of *menstrual poverty* was created from three questions in the survey. The three questions were framed in the context of financial constraints faced by the participants in the survey: “Have you ever had difficulties in accessing products for your menstrual hygiene (pads, tampons, menstrual cup...) for economic reasons? Have you ever used some menstrual hygiene products longer than recommended because you had no replacement? Have you ever used other products, not specific for menstruation (WC paper, towels, etc.), for economic reasons?”. All three questions have dichotomous answers (1=Yes, 0=No).

The resulting menstrual poverty variable takes the value “1” if an individual had ever experienced any of these three previous situations, and “0” if she experienced none of them. This group of questions is based on the Mayor of London-YouGov pioneer research from the London City Council (Mayor of London, 2018).

Variables and Data Analysis

As stated, one of the study objectives is to analyse whether the socioeconomic and demographic characteristics of young women are associated with experiencing menstrual poverty. Two relevant independent socioeconomic variables were used in our analysis: household equivalent income, and a deprivation scale. According to OECD's adjusted consumption unit (Anyaegebu, 2010), *household equivalent income* is calculated by dividing the household income by the household size. The Department of Social Rights of the Barcelona City Council provided the information on the household income average. We entered the variable into the model using quartiles (being Q1 the lowest income quartile and was used as the reference category). We decided to add a fifth category labelled “No information” due to the high percentage of missing data in the household income variable (31.1% of subjects do not report to the household income question). Since poverty and social exclusion have a multidimensional nature and income is sometimes considered unreliable as an indicator of poverty (Nolan & Whelan, 2010), we introduced in the analysis the *Deprivation scale* variable as a non-monetary indicator of life conditions. This variable is based on the EU-SILC set of material deprivation indicators (Eurostat, 2018). The deprivation scale indicator results from the combination of five items (questions) in the questionnaire: a) “Do you consider that your household can cope with an unexpected expense of 700 euros with its resources?”; b) “Can the household afford to go on holiday away from home for at least one week a year?”; c) “Can you afford to eat meat, chicken or fish (or equivalent for vegetarians), at least every two days?”; d) “Are you able to keep your home adequately warm?”; e) “Have you had any delay in the payment of the rent or mortgage, or the payment of any of the household supplies (water, gas, electricity) in the last 12 months?”. The final deprivation scale indicator is a sum of these five types of deprivations and is recoded in five categories (“0” identifying no deprivations and used here as a reference category, “1”, “2”, “3 or more”, and “No information”).

In our models we further include two variables associated with inequalities among youngsters. The first of them is the *Employment status* of young women. This variable has six categories according to their main labour market situation at the time of the survey (“studying” is used as a reference category, “working”, “unemployed”, “ERTE” –this is the Spanish acronym of Record of Temporary Employment Regulation, that is, temporal layoff–, “Inactive”, and “No information”). The second variable is whether the individual was *Emancipated* or not (“living with a parent or other type of tutor” as a reference category, and “not living with parents or another type of tutor”). “Emancipated” is thus

taken here as living independently from their parents. Other variables, of a rather more socio-demographic nature, were added to the model: *Age* (with four categories: “15-19 years old”, “20-24”, “25-29”, and “30-34”) and *Country of origin* (“Spain” as a reference category, “other EU country”, “Latin America”, and “Other”). According to published literature, these control variables are all associated with young living conditions. Some studies have shown that older youth has slightly more risk of poverty than younger youth in Spain (Cantó & Mercader, 2000), particularly those young parents with children and/or unemployed (Aassve et al., 2007; Ayllón, 2009). Further, according to Ayllón (2013), migrant young people are found to have a greater probability of worse living conditions and higher poverty persistence.

By means of a logistic regression model, we disentangle which are the effects of a range of socioeconomic characteristics on the probability of facing menstrual poverty, and hence to confirm or refute findings coming from previous studies. We include all the variables mentioned above and use SPSS 25 as statistical software to assist the analysis.

Results

Table 1 shows the main characteristics of the study sample. Up to 15.3% of 15-34 years-old women in Barcelona reported facing financial barriers to adequate management of their menstruation. Further, the prevalence of menstrual poverty seems to be greater among younger age groups 15-19 (18.9%) and 20-24 (21.9%) years old women, among those who were born in Spain (18.7%) and those who are economically dependent and live with their parents or relatives (21.4%).

[Table 1 here]

Menstrual poverty shows substantial variation when looking into material deprivation, too. Indeed, 28% of women who report three or more material deprivations reported menstrual poverty, while this percentage drops to 10.9% among those who do not report any material deprivation. Further, unemployed women and those classified as students reveal as the two groups with the highest prevalence of menstrual poverty (17.7% and 23.3% respectively).

Table 2 shows the results of the logistic regressions analysis. As stated in the methods section we have built up a regression model that incorporates what we consider are key explanatory and control variables to menstrual poverty. The logistic regression analysis partially confirms our hypothesis. Having one or more material deprivations has an effect on menstrual poverty but the only significant category at a $p < 0.05$ level, when compared to “no deprivation”, is having 3 or more material deprivations. Indeed, higher levels of deprivation skyrocket menstrual poverty (OR=4.42; $p < 0.001$;

CI=0.52-1.95). Although other levels of material deprivation are not significant in the model, results show that the probability of risk of menstrual poverty increases as the level of material deprivation increases. A larger sample may confirm this gradient at a statistically significant level.

Differently, equivalent income levels (adjusted by other variables) have very little explanatory power in the model. No statistical differences are found between Q1 to Q4 as regards their probability of suffering from menstrual poverty.

[Table 2 here]

Living independently from parents, that is, released from parental care and responsibility, either living alone or with other people, is a factor that decreases the odds of experiencing menstrual poverty (OR=0.50; $p < 0.05$; CI=0.28-0.90). Further, when controlling for all other variables in the model, the fact of having one or another labour status has little effect on menstrual poverty. Indeed, no differences were found between being a student and other categories such as working, being unemployed, inactive or in an ERTE (temporal layoff). We observe a significant increase in OR (OR=7.38; $p < 0.05$; CI=1.20-45.83) in the employment status category labelled as “No info”, but as showed in Table 1 there are very few cases in this particular category. Again, it would be pertinent to see whether a larger sample size may change these results.

Our findings point to age not being a significant variable in explaining menstrual poverty. All age categories seem to be exposed similarly to this phenomenon once controlled for other variables in the model. However, surprisingly, the model confirms that being a Spanish native is associated with a greater probability of suffering from menstrual poverty when compared to other origins, particularly Latin Americans and Others as categories. No statistically significant differences were found between Spanish women and those coming from other EU countries. In addition, other variables were tested in the model including parents' education attainment levels (see supplementary material section Table 3). Neither of them was found to be statistically significant nor to improve the explanatory capacity of the model.

Discussion

In this section we aim to discuss the relevance of the results reported and point out some possible explanations. A first aspect to discuss from the reported results is the prevalence of menstrual poverty itself (15.33%). If we project that prevalence to the 2020 Barcelona census population we estimate 30,900 15-34 years-old women in the city of Barcelona are potentially affected. This is particularly important insofar as menstrual poverty could be associated with poor health, especially poor mental

health (Cardoso et al., 2021), as well as with other unfair and avoidable disadvantages at school and work (WorldBank, 2016; Hall, 2018; Knight, 2020; Sebert Kuhlmann et al., 2020), although more research is needed in all these respects (Henneman et al., 2017).

Such prevalence seems consistent with those published in other studies in high-income countries. For example, an on-line survey by Cardoso et al. (2021) reports 14.2% of college attending women (sample size=471) had experienced menstrual poverty ever in the past year in the US. Similarly, the IdiapGol (2021) study (sample size=1.892) states 19,2% of women and people who menstruate living in Spain could not afford menstrual-related products. The latter study reports on a web-based survey among 18-55-year-old women. Further, the London City Hall study (Mayor of London, 2018) (sample size not reported) reveals that 17% of women aged 16-24 say they have experienced menstrual poverty. In addition, the Plan International UK (2021) (sample size=1,000) point to similar figures when disclosing that 17% of girls who said they have been unable to or struggled to afford menstrual products in lockdown. Despite these similarities, three relevant observations must be made. First, not all published studies on the prevalence of menstrual poverty refer to the same subgroup of the population. Second, the wording of the questionnaire used to identify menstrual poverty may vary from study to study. Third, none of these published studies were based on a randomly selected and representative sample of the population under study.

The model displayed in the results section points out key variables that contribute to explain menstrual poverty among youngsters in a southern European urban area. Material deprivation, living independently from parents, and origin stand out as three key dimensions that need to be accounted for. On the contrary, age, labour status and household equivalent income were found to explain very little of the risk of menstrual poverty among young adults in Barcelona.

If we take a look at income inequality related variables such as material deprivation and equivalent household income the picture is blurry. While material deprivation is clearly associated with menstrual poverty in our model, income inequality does not seem to have a strong explanatory power. The reasoning behind this could be that material deprivation is more strongly related to purchasing power in this age group than household equivalent income. Although menstrual poverty might well be a strong expression of poverty itself, conventional poverty indicators such as household equivalent income are not that effective in explaining the phenomenon. A key assumption of household equivalent income is equal sharing of resources within the household, which is an assumption that has been widely rejected by numerous empirical studies (Browning et al., 2014). This misleading assumption results, for example, in female poverty being seriously underestimated (Findlay and Wright, 1996). Our study contributes to the literature that draws attention to the importance of analysing some dimensions of poverty and deprivation from a gender perspective (Bessell, 2015), and

represents an important advance in identifying menstrual poverty as a distinctive dimension of deprivation, beyond the household economic extent. Our findings support the idea that under equal economic conditions those women that are more exposed to severe material deprivation are more likely to suffer from menstrual poverty.

Our results also reveal there are no differences among origin categories in the model. This could be argued as a contradictory finding since in the vast majority of poverty and inequality studies the variable “origin” is frequently associated with economic disadvantages (Mari-Klose et al., 2016; Bruquetas & Moreno Fuentes, 2015). Further, it does not seem to be a matter of low statistical power of the sample. However, there may be other reasons that could explain such an outcome. At the time of reporting menstrual poverty Latin-Americans and Others categories in our study may be facing some sort of stigma and/or shame regarding menstruation, may share values and beliefs different from those of European citizens, or may manage knowledge and information about menstruation differently. In this respect, Ussher et al., (2017), for example, report on the importance of identifying migrant and refugee women's experiences in understanding sexual subjectivity and the provision of culturally safe sexual health information. Metusela et al. (2017) in a qualitative study about recent migrants and refugee women in Australia and Canada found that across all cultural groups many women had inadequate knowledge of sexual and reproductive health due to taboos associated with the construction and experience of menstruation and sexuality. Chandra-Mouli et al. (2017) review disclosed that exclusion and shame lead to misconceptions and unhygienic practices during menstruation among women in low and medium income countries. Holmes et al. (2021) on a recent narrative review of studies on adolescent menstrual health literacy revealed that particularly women from low- and medium-income countries report detrimental impacts in relation to menstrual hygiene and cultural issues. Overall, we understand that further research is needed to disentangle the reasons behind perceptions and attitudes in this respect, preferably by means of qualitative studies exploring the role of cultural variables and trends in the context of interest.

In brief, this study contributes to the published literature by providing an estimate of the prevalence of menstrual poverty among young adults using a randomly selected and representative sample, by disclosing the role played by specific socioeconomic variables in explaining menstrual poverty, and by pinpointing some areas of research that could benefit the comprehension of this phenomenon.

This research has some limitations that should be noted. Menstrual poverty is a relatively novel concept in high-income countries. There is no standard way to assess menstrual poverty. There are very few quantitative pieces of research using this indicator, and thus there is a lack of an in-depth study that investigates the validity and robustness of the chosen questions to accurately capture the phenomenon. Therefore, further scale development research is warranted. The selection of individuals

answering the menstrual poverty questions could be argued as a limitation. We have considered women suffering from menstrual poverty as those that answered “yes” to any of the three questions included in the survey. We acknowledge the fact that one of these questions could be labelled as a menstrual management question, despite being framed in a context of financial barriers. We cannot disregard the fact that all women answering positively to that question, that is, extending the use of menstrual products, did not suffer from menstrual poverty as well. It is however unclear how many of those that reported an extended use of menstrual products fall into each category. It seems reasonable to expect that the 15,3% figure reported might be reduced to some extent as a result.

Second, the sample size in the study (N=700) may have limited in some cases the statistical power of the model analysed. We would have liked the sample size to be larger, and we acknowledge some results might be affected. However, it is paramount to think of the sample as a randomly selected and representative sample of the young population in the city of Barcelona, and we believe our results have high reliability and validity.

Finally, it is worth mentioning that the 2020 Youth Survey in Barcelona is not a survey specifically designed to capture all relevant aspects and dimensions of menstrual poverty. It is not a menstrual poverty survey so to speak. This is a limitation insofar we have been limited in our analysis by the variables present in the survey. If additional variables had been included, the analysis and discussion would have been greatly benefitted.

Although we do not think of it as a limitation, it is worth mentioning that the 2020 Youth Survey in Barcelona is not a self-administered survey. Only a reduced number of questions in the survey were self-administered. Those self-administered questions included menstrual poverty; tobacco, alcohol and drugs consumption; sexuality; being or not in a relationship; and suffering discrimination, harassment and/or violence. The literature points to some disadvantages of not having a self-administered survey such as making respondents less comfortable in responding by the presence of an interviewer. This was avoided by including menstrual poverty questions in the set of questions that were self-administered. We trust the survey was conducted with due respect to diversity of opinion, anonymity and confidentiality, and sensitive questions and dimensions such as the ones listed above were self-administered to avoid response conditioning and possible bias.

Notwithstanding these limitations, we believe that a closer understanding of the socioeconomic and demographic characteristics of those in menstrual poverty, such as the one provided by this study, would allow for a more effective design and implementation of policies addressing target groups. Along with other published studies, we would encourage the implementation of policies and programs targeting health and menstruation literacy and management, and policies aimed at reducing financial

barriers and access to menstrual products. Some high-income countries have already started to move in that direction, as is the case of the UK where a number of local grassroots initiatives have begun to proliferate, raising awareness and resources to make menstrual products available to schools, colleges, women's refuges and food banks (BBC News, 2017). In January 2020, the UK Conservative government introduced a scheme to enable schools and colleges in England to access funding for menstrual products (Department for Education, 2020). In Spain, the Catalan Department of Equality and Feminism, together with and eight other departments, have recently promoted the National Strategy for Sexual and Reproductive Rights, which includes the Menstrual Equity Plan (Generalitat de Catalunya, 2021). The latter started May 2022 distributing menstrual packs with a cup, panties and reusable pads to third-year ESO students from high schools all over the territory. It goes without saying that the effectiveness of these high-income countries policies must be assessed. The data from our study may encourage decision-makers to trigger the design and implementation of additional specific policies addressing this phenomenon.

Concluding remarks

In conclusion, we have estimated the magnitude of menstrual poverty among young people in an urban context such as Barcelona, Spain to be 15,3%. This study also sought to assess the relationship between different socio-demographic and socioeconomic variables and menstrual poverty. Findings reveal that severe material deprivation was significantly associated with menstrual poverty (adjusting by household income) pointing to the need for better indicators to detect poverty in menstruating youngsters. Feminist researchers have long challenged the idea of the household as a site of pooled resources (Bessel, 2015). Menstrual poverty is a phenomenon that requires, in our opinion, indicators that collect rather more personal information both at individual and household levels. The nature of such poverty is gender based, which raises questions on how household budgets are allocated among members, who decides that, which is the number of menstruating persons in the household and so on. To that aim we would probably require rethinking poverty measurement with a gender perspective, as well as identifying how deprivations overlap to aggravate the experience of poverty. This information would provide policy-makers with evidence not only on the percentage of population that lives above or below a specific income or consumption-based poverty line, but with the detail and nuance that is required for the design and development of effective policies and interventions. Finally, we should refer to the need of more conclusive research to prove the relationship between menstrual poverty and other relevant outcomes such as quality of life, mental health, and school and work absenteeism.

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Tables

Table 1. Characteristics of young women (15-34 years old) in the survey and those reporting menstrual poverty.

	All sample		Menstrual poverty	
	%	N	% ^(*)	N
Menstrual poverty				
Yes	15.3	107		
No	84.7	593		
Age				
15 to 19 years	17.4	122	18.9	23
20 to 24 years	20.8	146	21.9	32
25 to 29 years	30.3	212	12.7	27
30 to 34 years	31.5	220	11.4	25
Origin				
Spain	55.7	390	18.7	73
Other EU countries	6.0	42	14.3	6
Latin America	30.2	212	12.8	27
Other	8.0	56	1.8	1
Living arrangement				
Emancipated	62.7	439	11.6	51
Not emancipated	37.3	261	21.4	56
Employment status				
Studying	32.0	224	17.7	40
Working	48.7	341	11.5	39
Unemployed	10.5	74	23.3	17
ERTE	3.5	24	12.5	4
Inactive	4.2	30	13.3	3
No info	1.0	7	57.1	4
Deprivation scale				
No deprivation	43.1	302	10.9	33
1 deprivation	21.6	151	15.9	24
2 deprivations	12.9	91	14.4	13
3 or more deprivations	13.4	94	28.0	26
No info	9.0	62	17.5	11
Equivalent income				
Q1	17.1	120	19.3	23
Q2	17.6	123	19.5	24
Q3	17.5	123	10.6	13
Q4	16.6	116	12.0	14
No info	31.1	218	15.1	33
Note: N=700. (*) shows the % of youngsters in menstrual poverty from the total sample in each category.				

Source: Own elaboration based on data from the 2020 Barcelona Youth Survey (sample size=1,407)

Table 2. Relationship between menstrual poverty in 15-34 years old women and key socioeconomic variables: results from logistic regression analysis

	OR	(S.E.)	(C.I.)
Age (Ref. 15 to 19 years)			
20 to 24 years	1.38	(0.36)	(0.68-2.79)
25 to 29 years	0.83	(0.44)	(0.35-1.97)
30 to 34 years	0.83	(0.46)	(0.34-2.06)
Origin (Ref. Spain)			
Other EU countries	0.89	(0.50)	(0.34-2.36)
Latin America	0.54*	(0.28)	(0.31-0.93)
Other	0.06**	(1.04)	(0.01-0.46)
Emancipated (Ref. No)			
Yes	0.50*	(0.30)	(0.28-0.90)
Employment status (Ref. Studying)			
Working	0.96	(0.33)	(0.50-1.84)
Unemployed	1.46	(0.41)	(0.65-3.27)
ERTE	1.19	(0.74)	(0.27-3.50)
Inactive	0.98	(0.65)	(0.28-5.09)
No info	7.38*	(0.93)	(1.20-45.83)
Deprivation scale (Ref. No deprivation)			
1 deprivation	1.75†	(0.31)	(0.96-3.19)
2 deprivations	1.84	(0.39)	(0.85-3.96)
3 or more deprivations	4.42***	(0.37)	(2.14-9.16)
No info	1.82	(0.42)	(0.80-4.12)
Equivalent income (Ref. Q1)			
Q2	1.47	(0.37)	(0.72-3.01)
Q3	0.91	(0.44)	(0.38-2.18)
Q4	1.30	(0.47)	(0.52-3.25)
No info	0.99	(0.35)	(0.50-1.95)
Constant	0.19***	(0.40)	
R2 Nagelkerke	0.15		
-2 Log likelihood	536.15		
Notes: N = 700. OR: Odds Ratio. SE: Standard Error. CI: Confidence Interval. Ref.: Reference category. Significance levels: †p < 0.1, *p < 0.05, **p < 0.01, ***p < 0.001.			

Source: Own elaboration based on data from the 2020 Barcelona Youth Survey (sample size=1,407)