

Exploring Menstrual Blood Narratives on Social Media: A Social Media Listening Analysis on Facebook, Reddit, Instagram and TikTok

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Abstract

Background: Menstrual blood (MB) has historically been treated as a hygiene issue, largely excluded from clinical discourse and diagnostic consideration. However, menstruating individuals are increasingly discussing the appearance of MB online, particularly on social media platforms, where they seek advice, share experiences, and assign health-related meaning to menstrual characteristics.

Objective: This study aimed to examine how MB is represented in social media discourse and to explore individuals' perceptions of its potential use as a diagnostic tool.

Methods: A qualitative social media listening study was conducted using data collected from TikTok, Facebook, Instagram, and Reddit via Mention and Apify. After transcription and filtering, 349 posts were included in the final dataset. Data were coded and analysed using Atlas.ti, with additional network and sentiment analyses conducted to identify patterns and associations.

Results: Most posts originated from Reddit and Facebook, with a majority focused on seeking help. Descriptions of MB centred on colour (especially brown, bright red, pink, and black), consistency (notably coagulation), and, to a lesser extent, smell. These visual and sensory attributes were frequently associated with self-assessed health conditions—including endometriosis, miscarriage, hormonal changes, and infections—as well as with perceived fluctuations in the normal menstrual cycle. Discussion of MB as a diagnostic tool was less frequent but predominantly positive, highlighting interest in non-invasive, home-based diagnostics.

Conclusions: Social media users already engage in informal diagnostic reasoning based on MB appearance. These lay insights offer valuable clues to clinicians and researchers, suggesting the need to integrate patient-described menstrual characteristics into diagnostic frameworks.

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Original Manuscript

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Word count: 2499

Keywords: menstrual blood, social media, menstrual health

Introduction

Menstruation has long been framed as a private hygiene issue, with products and messaging focused on concealment and disposal. This has contributed to a culture of silence, leaving menstrual health underrepresented in both public discourse and medical research (1). This narrative is beginning to shift. In 2022, the World Health Organization called for a reframing of menstruation as a health issue, the promotion of menstrual education, and the integration of menstrual health into policy and funding structures (2). Additionally, the renewed popularity of reusable menstrual products has further contributed to this shift. These products encourage closer observation of menstrual blood (MB) - its colour, texture, and volume - which in turn raises questions about what constitutes “normal” and when symptoms may be cause for concern. In these times, social media has become an increasingly visible space where menstruating individuals share personal experiences, seek advice, promote products, and challenge taboos (3–7). Parallel to these public perception shifts, medical interest in MB is growing. Research is beginning to explore its potential for detecting biomarkers associated with reproductive and systemic conditions such as endometriosis and diabetes, as well as its regenerative applications in stem cell therapy (1,8).

Social Media Listening (SML) is a valuable method for studying health-related conversations beyond clinical settings, offering accessible, tailored information, emotional support, and insights by analysing social media discussions (9). While originally developed for commercial use, SML is increasingly applied in academic and medical research to explore patient perspectives and digital health behaviours. Recent studies have used SML to investigate infertility, endometriosis, chronic pain, and perceptions of screening procedures across platforms like Instagram, Reddit, and X, and have outlined the importance of listening to patients’ opinions and unmet needs for disease

management and the development of new diagnostic tools (7,10–13).

In this context, the present study aims to explore how MB is discussed on social media, with two specific research questions: (1) *How is the appearance of MB - such as colour, texture, or smell - described and interpreted?* and (2) *How is the potential use of MB as a diagnostic tool perceived and discussed?*

Methods

To address these questions, we conducted a content analysis of posts on TikTok, Facebook, Instagram, and Reddit.

Patient and Public Involvement

This study is part of the MAI study, a citizen science project analysing MB images from women with and without endometriosis using AI. By analysing publicly available and unfiltered social media content, this study captures diverse perspectives, offering insight into public perceptions of MB and its diagnostic potential. This approach fosters public involvement and enhances the relevance of this research by reflecting a global, community-driven discourse. The research questions were developed within this context. A project website shares background, study details and SML results (<https://menstrualbloodai.my.canva.site/mai>), and is regularly updated to ensure transparency and communication.

Data extraction

Data extraction was conducted following principles of SML analysis in health research as previously described (4,10,14). New user profiles were created on Instagram, TikTok, Reddit, and Facebook to minimise algorithmic bias. The profiles were gender-neutral and unlabeled, with the exception of the Instagram account, which required a gender designation and was therefore registered as 'female'. To improve data quality through triangulation, we used three methods to extract content from these social media platforms (15). Data were extracted in February 2025. First, four groups on Facebook and Reddit were scraped for relevant content. Second, two hashtags were used to find content on Instagram and TikTok. Third, six alerts were created to scrape social media platforms to identify relevant content. Data was downloaded via Apify and Mention. All data was anonymised. A detailed description of each search method can be found in the Multimedia Appendix 1, Table S1-S6.

Data Preparation

A total of 6,263 posts and videos were collected using Mention and Apify across TikTok, Instagram, Facebook, and Reddit. X content was extracted exclusively through the alert search and was therefore excluded due to low data quality and the lack of triangulation. After removing duplicates and X content, 4,138 posts remained. Data were categorised by type (images, videos, text). Images were excluded as they could not be objectively analysed. A total of 392 videos from Instagram and TikTok were transcribed using OpenAI whisper in Python. Posts in other languages rather than English were excluded. Using a keyword search for the term “blood,” 2878 non-relevant posts were removed. A final relevance screening yielded 349 posts for analysis. Figure 1 shows the data preparation workflow.

Figure 1: Identification and Downloading Process

Data analysis

We conducted a content analysis to examine how MB was described (RQ1), which companies working with MB were mentioned, and what benefits and concerns were discussed regarding its diagnostic use (RQ2) (4,6,16,17). To address RQ1, we additionally performed a network

analysis, a methodological approach that examines the relationships between individual actors, in order to explore how specific characteristics of menstrual blood were associated with various health conditions (18). We also carried out a sentiment analysis to investigate public perceptions of using MB as a diagnostic tool (RQ2) (11,13). To examine the distribution of posts by platform, research question, search type, and country, we performed a descriptive statistical analysis.

Coding followed a four-step deductive process. First, Atlas.ti's AI Coding tool generated preliminary themes. Second, the first author manually coded the entire dataset, applying and adapting the AI-generated codes. In the third step, the first author independently recoded the dataset to enhance reliability, and the last author revised the codes. Finally, the coded data were refined, duplicates removed, similar codes merged, and a structured codebook was created. To address RQ1 on the appearance of MB, four code groups were developed: 'Consistency Description', 'Colour Description', 'Smell Description', and 'Other Appearance Description'. For RQ2, seven groups were used: 'Benefits', 'Companies', 'Hopes for the Future', 'Concerns', 'Diagnostic Methods', 'Research', and 'Other'. Additional cross-cutting categories included 'Type of Post', 'Sentiment', and 'Reasons for MB Changes', supporting contextual analysis of content and tone. In total, 295 individual codes were generated and are detailed in the Multimedia Appendix 2.

Results

General post analysis

In total, 349 social media posts discussing MB were analysed. Table 1 shows the distribution of search terms, sources, and geography.

Seeking help was the most common post type (154 mentions), followed by *comment* (73 mentions), mainly on Reddit and Facebook. *Explaining* posts (47 mentions) were found across all platforms, especially Facebook and Instagram, while *advertising* (35 mentions) occurred mostly on Facebook. Less common were *patient reports*, *spiritual*, and *menstrual awareness*.

Platform-specific trends showed Reddit posts were largely focused on *seeking help* (64%), while Facebook featured more *advertising* (30%) and *explaining* (23%). Instagram and TikTok posts were primarily *explaining* (54% and 86%, respectively). See Multimedia Appendix 3.

Regarding the research focus, 293 posts addressed appearance-related aspects of MB, and 81 discussed its diagnostic potential, with some overlapping. RQ1 content was mainly sourced from Reddit, whereas Facebook contributed more evenly to both questions.

	Nr.	% (all posts)	% (within category)
Total included posts	349	100	
Search tool and Search terms			
Apify	27	8	100
GS_Facebook	7	2	26
GS_Reddit	7	2	26
HS_TikTok	6	2	22
HS_Insta_Post	4	1	15
HS_Insta_Video	3	1	11
Mention	322	92	100
HS_MB+Endo	192	55	60
HS_PB and period facts	13	4	4
MB and Endo	102	29	32
MB+ #	9	3	3
MB+colour+diagnostics	6	2	2
Source			
Facebook	92	26	
Instagram	24	7	
Reddit	226	65	
TikTok	7	2	
Geographies			
unknown	278	80	
known	71	20	100
Austria	7	2	10
Botswana	1	0	1
Canada	2	1	3
Cameroon	2	1	3
Egypt	1	0	1
Spain	1	0	1
Great Britain	8	2	11
India	8	2	11
Luxembourg	3	1	4
Malaysia	1	0	1
Nigeria	5	1	7
Netherlands	1	0	1
New Zealand	2	1	3
Philippines	1	0	1
Portugal	1	0	1
Taiwan	1	0	1
United States	25	7	35
Zimbabwe	1	0	1

Table 1: Search tools, Sources, Geography

GS: group search, HS: hashtag search

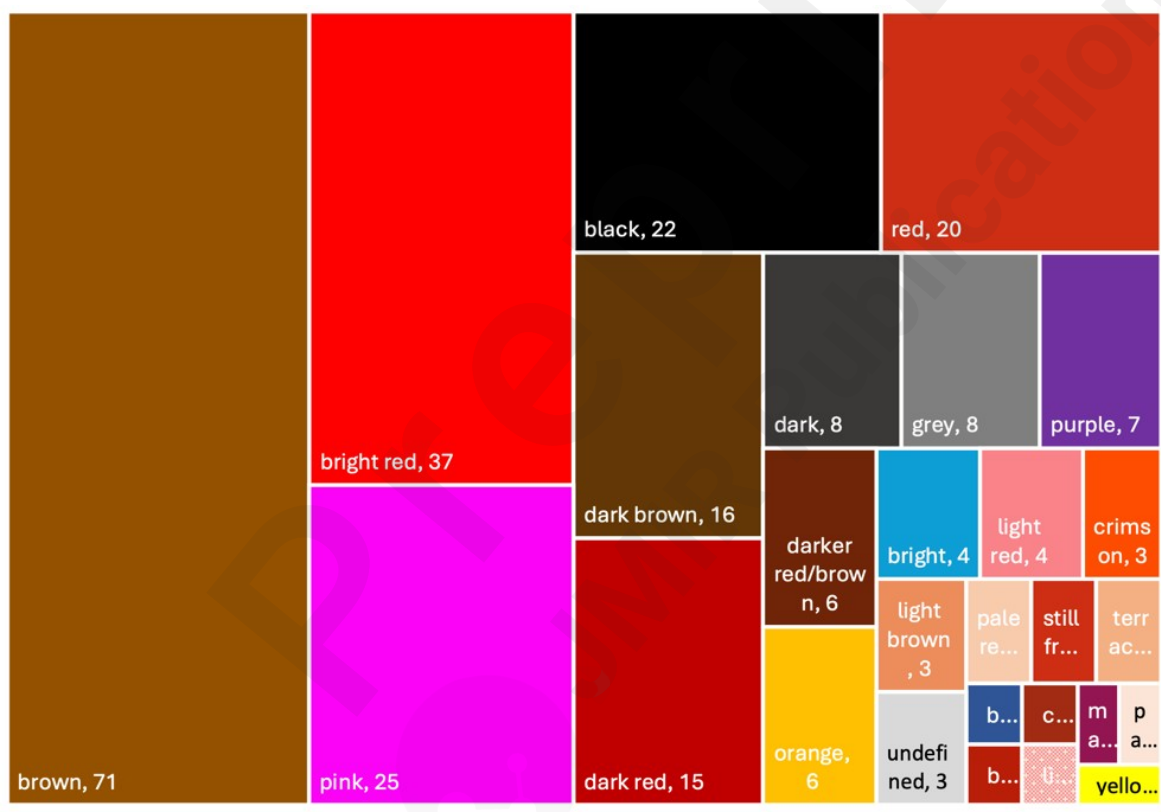
Appearance Description of Menstrual Blood

Content analysis revealed that MB appearance was described across four key aspects: colour, consistency, smell, and other characteristics.

Colour, Consistency, Smell, and Other Descriptions

Colour was the most frequently described aspect (189 mentions), with *brown* (37.6%), *bright red* (19.6%), *pink* (13.2%), and *black* (11.2%) among the most common. Other colours included *dark red*, *grey*, *purple*, *orange*, and unique terms like *cranberry red* and *terracotta*, as shown in Figure 2.

Figure 2: Tree map visualisation of colour descriptions mentioned in posts



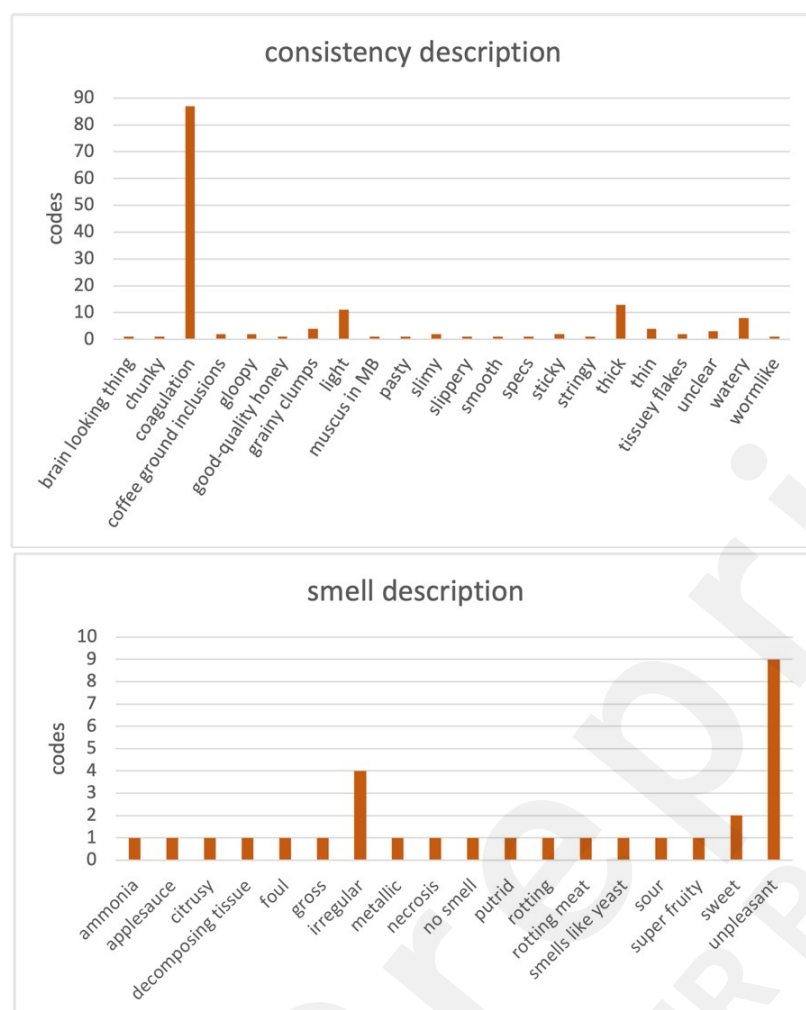
* Each rectangle represents a different colour, and the size is proportional to the number of posts mentioning that colour. The number after the colour indicates the number of mentions.

Consistency (123 mentions) was dominated by the term *coagulation* (70.7%), followed by *thick*, *light*, and *watery*. Less common were *chunky*, *gooey*, *pasty*, and others.

Smell (23 mentions) was less frequently addressed but included terms such as *unpleasant*, *irregular*, *metallic*, *sour*, *sweet*, and *yeast-like*. Figure 3 shows the mentions of consistency and smell descriptions. Other appearance-related descriptors included *spotting*, *irregular periods*, and *missed*

periods.

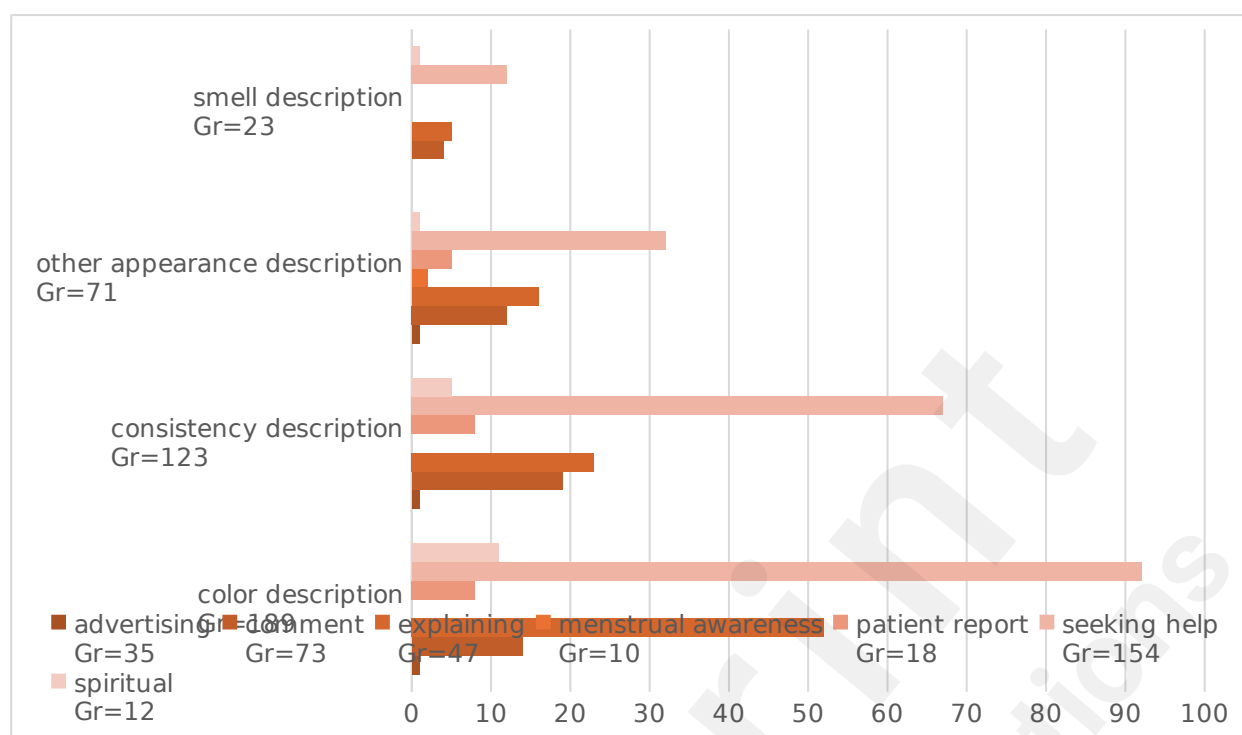
Figure 3: Bar charts of consistency (top) and smell (bottom) descriptors



Appearance Descriptions by Post Type

Appearance descriptions were most prominent in *seeking help* posts, which included the majority of *colour* and *consistency* references, and most *smell* mentions. *Explaining* posts also contributed substantially, especially to *colour* and *consistency* codes. In contrast, *comment* posts were more evenly distributed but less frequent. Descriptions in *advertising* and *menstrual awareness* were minimal, indicating a narrower scope of content. Figure 4 shows the distribution of posts describing appearance characteristics of MB across different post types.

Figure 4: Distribution of qualitative posts describing the appearance of menstrual blood across different post types



Gr = Groundedness: number of all quotations coded by a specific code

Association with Specific Diseases

A network analysis was conducted to explore the relationship between MB appearance and perceived health conditions. The analysis focused on *coagulation* and the four most frequently mentioned colours: *brown*, *bright red*, *pink*, and *black*. These were analysed in relation to the code group *reasons for changes in MB*, excluding codes that were rare or unrelated. A visualisation of both network analyses is shown in Figure 5-6.

Brown MB was linked to conditions such as low progesterone, ectopic pregnancy, PCOS, lochia, endometriosis, miscarriage, and the use of medication. It was also associated with normal phases of the menstrual cycle (e.g., oxidised blood or the start and end of menstruation). Notably, some individuals reported experiencing brown MB despite not expecting to menstruate due to contraceptive use. Pink blood was connected to hormonal contraceptives, low oestrogen, iron deficiency, ovarian cysts, implantation bleeding, and mixed with cervical fluid. Bright red blood was often mentioned in relation to miscarriage, cervical cancer, sexually transmitted infections (e.g., gonorrhoea, chlamydia), and surgery (e.g., ovary removal). Black MB appeared in relation to endometriosis, miscarriage, medication use, and vaginal obstruction, as well as typical menstrual transitions.

Coagulation was linked to both clinical and cyclical causes, including uterine polyps, adenomyosis, endometriosis, thyroid issues, PCOS, hormonal imbalance, and uterine cancer, along with factors like medication use and menstrual phase.

Figure 5: Conceptual map illustrating the association between the most frequent colour descriptions (brown, bright red, pink and black) and associated health conditions

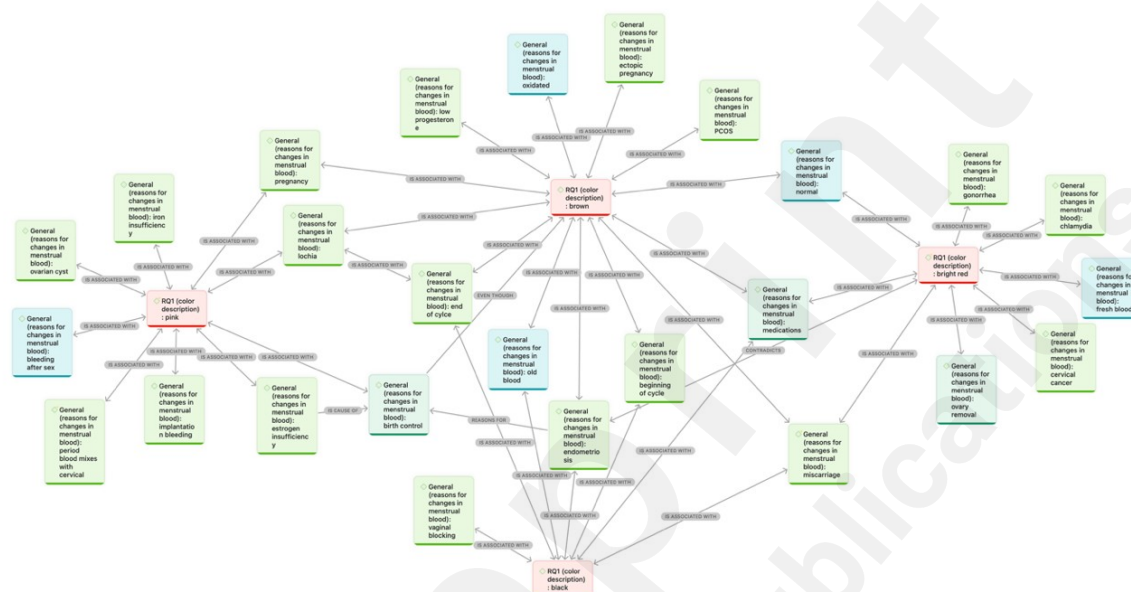
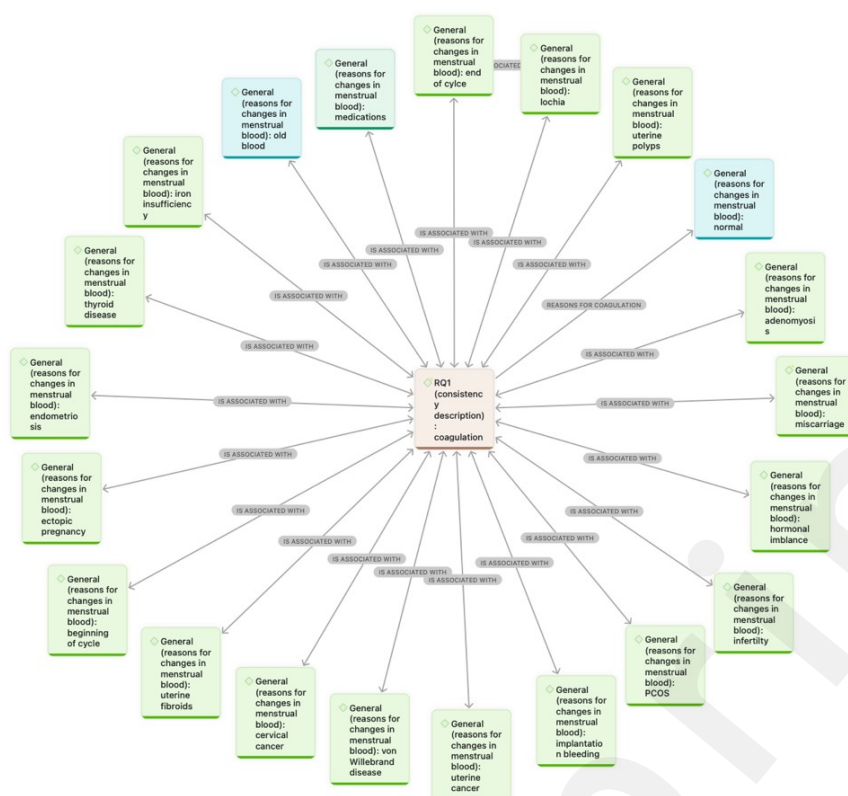


Figure 6: Conceptual map illustrating the association between coagulation and associated health conditions



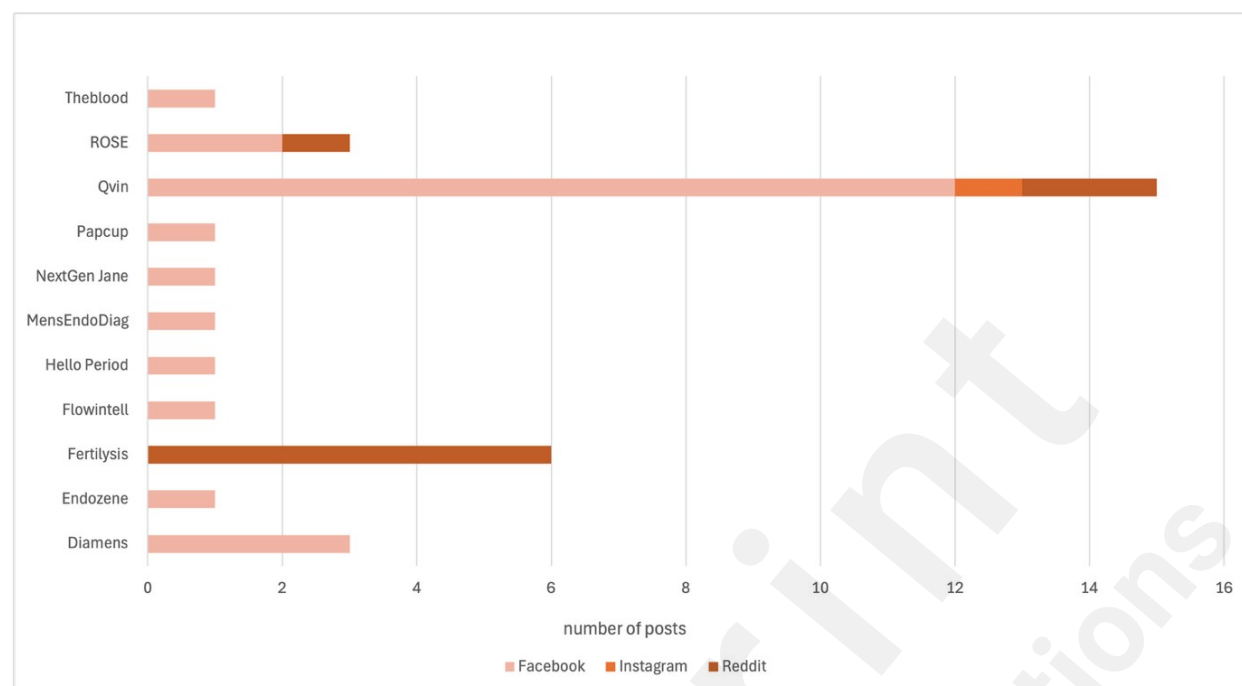
The red, centred nodes represent colour descriptions, the green nodes represent identified medical conditions that influence the appearance, and the turquoise nodes represent other major influencing factors. Arrows indicate the nature of the relationships, with labels specifying associations (e.g., "is associated with," "is cause of," "contradicts," and "even though").

Perception of Menstrual Blood as a Diagnostic Tool

Companies and Research Initiatives

To assess how MB is discussed as a diagnostic tool, we identified companies and research groups named in social media posts. Frequently mentioned was Qvin, while other organisations - including Theblood, ROSE, NextGen Jane, Papcup, MensEndoDiag, Hello Period, Flowintell, and Diamens - were referenced less frequently. The distribution is shown in Figure 7.

Figure 7: Number of posts mentioning diagnostic companies or research groups related to the use of menstrual blood for diagnostic purposes across three social media platforms (Facebook, Instagram, Reddit)



Sentiment Analysis

Among posts discussing diagnostic use, 78% expressed positive sentiment, indicating strong support and optimism for innovation in menstrual health. Neutral posts (9%) were mainly descriptive, while 13% were negative, expressing scepticism or concern.

Perceived Benefits and Concerns

Table 2 summarises 60 mentions of potential benefits, contrasted by 19 concerns. Additionally, 10 posts expressed surprise at the delayed exploration of the potential of MB.

Benefits	Count	Concerns	Count
destigmatisation	2	being sold off	1
early detection	2	collection of MB	1
easily accessible	15	expensive	1
fast	4	fewer stem cells than in PB	1
home-based	12	losing body autonomy	2
less intimidating	1	menopause or no MB	3
no ethical concerns	1	not getting paid	2
non-invasive	10	political climate	1
pain-free	3	rather be tested by a doctor	1
plentiful	1	stigma	3

priceworthy	6	toxic if consumed	1
therapeutic use	3	long time until accessible for all women	1
		yuck factor	1
Total	60	Total	19

Table 2: Benefits and concerns regarding the use of menstrual blood for diagnostics

Discussion

This study analysed 349 social media posts to explore public discourse on the appearance and diagnostic potential of MB. Most data came from Reddit and Facebook, with Reddit users primarily seeking help, and Facebook content focusing more on advertising products and educating about menstrual health.

In response to RQ1, users described MB using a rich vocabulary, particularly in terms of colour (e.g., brown, bright red, pink) and consistency (notably coagulation). Smell was less frequently discussed but included terms like metallic, sour, and yeast-like. Descriptions were most detailed in help-seeking posts, reflecting uncertainty or health concerns. Network analysis linked colour and texture to perceived conditions, such as miscarriage, endometriosis, and hormonal changes.

While the scientific literature on MB colour remains limited, these results align with historical and contemporary findings. Musarofah et al. analysed two ancient manuscripts -Serat Piwulang Estri and Risalah Al-Mahîd - which associated MB colours with health conditions. They described colours such as black, red, grey, yellow, murky white, and bloody ape. For example, brownish-red blood was attributed to old MB from a previous cycle; blackish-red to retreating menstruation due to stress or fatigue; too black or too thick blood was linked to diseases of the female reproductive organs; bright red signified health; pink suggested low oestrogen levels; and grey was seen as a sign of infection (19). In a contemporary medical context, Xiping et al. studied menstrual characteristics among rural Chinese women and found a significant correlation between MB colour and fertility rates. They reported that light and bright MB was associated with lower levels of haemoglobin and oestrogen, and thus with lower fecundability and a higher risk of miscarriage. However, they did not observe a direct correlation between fertility outcomes and MB coagulation. Despite this, they did name uterine polyps, uterine fibroids, endometriosis, adenomyosis, and hormonal imbalances as clinical causes of coagulation (20).

For RQ2, sentiment analysis indicated strong support for the diagnostic use of MB, particularly due

to its potential as a non-invasive, accessible, and self-collectable sample. However, engagement with this topic was lower than in discussions around MB appearance (RQ1), suggesting that while interest exists, public discourse on this topic remains in its early stages.

Users frequently mentioned companies such as Qvin and Fertilysis, indicating growing awareness of commercial and research initiatives. However, users also voiced concerns around inclusivity - particularly for individuals who do not menstruate - as well as fears related to bodily autonomy and persistent menstrual stigma. These findings reflect the dual perspective presented by Zaheer et al., who emphasise the diagnostic promise of MB, with advantages such as its non-invasive nature, ease of access, and potential for home-based testing. At the same time, they highlight challenges, including the lack of standardised protocols, biological factors such as the timing and variability of MB composition that can affect test results, menstrual stigma, and limited awareness among both patients and healthcare professionals (8).

Despite these barriers, recent studies indicate a general openness to MB donation. Manley et al. found that 78% of menstruating individuals were open to donating MB for stem cell research, with many reporting a more positive perception of their menstrual cycle following participation (21). Likewise, Kaur et al. found high overall willingness to donate MB, but stressed that targeted awareness efforts are essential to overcome barriers and increase public understanding of MB's diagnostic potential (22).

Limitations and Recommendations for Future Research

This study is subject to several limitations. First, the dataset primarily reflects the perspectives of younger, digitally active users (23). Second, due to restricted data access and a limited sample size, the findings may not fully represent the broader population, particularly individuals without consistent internet access or those less likely to engage in public online discourse. Third, as SML is an emerging method in health research with the lack of standardised protocols, bias control and representativeness remain challenging.

Nonetheless, SML offers valuable insights into lived experiences, especially when clinical engagement is limited or absent. The study reveals that many individuals already use the appearance of MB as an informal health indicator, particularly in contexts of diagnostic uncertainty or lack of medical recognition.

Future research should investigate the diagnostic potential of MB, focusing on visual features, and

explore how menstrual knowledge is shaped across time, cultures, and biomedical contexts. Moreover, awareness campaigns are needed to bridge the gap between public interest and clinical application (22). Engaging both patients and healthcare providers is essential to overcome stigma and improve diagnostic pathways.

Conclusion

Our findings demonstrate that social media users are already attributing diagnostic meaning to the appearance of MB. Clinicians and researchers should take these descriptions into account, recognising them as a potential diagnostic resource. Integrating lay perspectives into medical dialogue may improve communication, support earlier identification of menstrual disorders, and strengthen reproductive health care.

Ethics approval

This study was approved by the Ethical Commission of Ludwig-Maximilians-University Munich. Project Nr.: 24-1112

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Competing interests

None declared.

Data availability

Data relevant to the study is included in the article or the Supplementary Material.

Author contributions

RN and OI conceptualized the study. RN performed data extraction and analysis. NC, AB and MH supervised the study. All co-authors read and approved the final manuscript.

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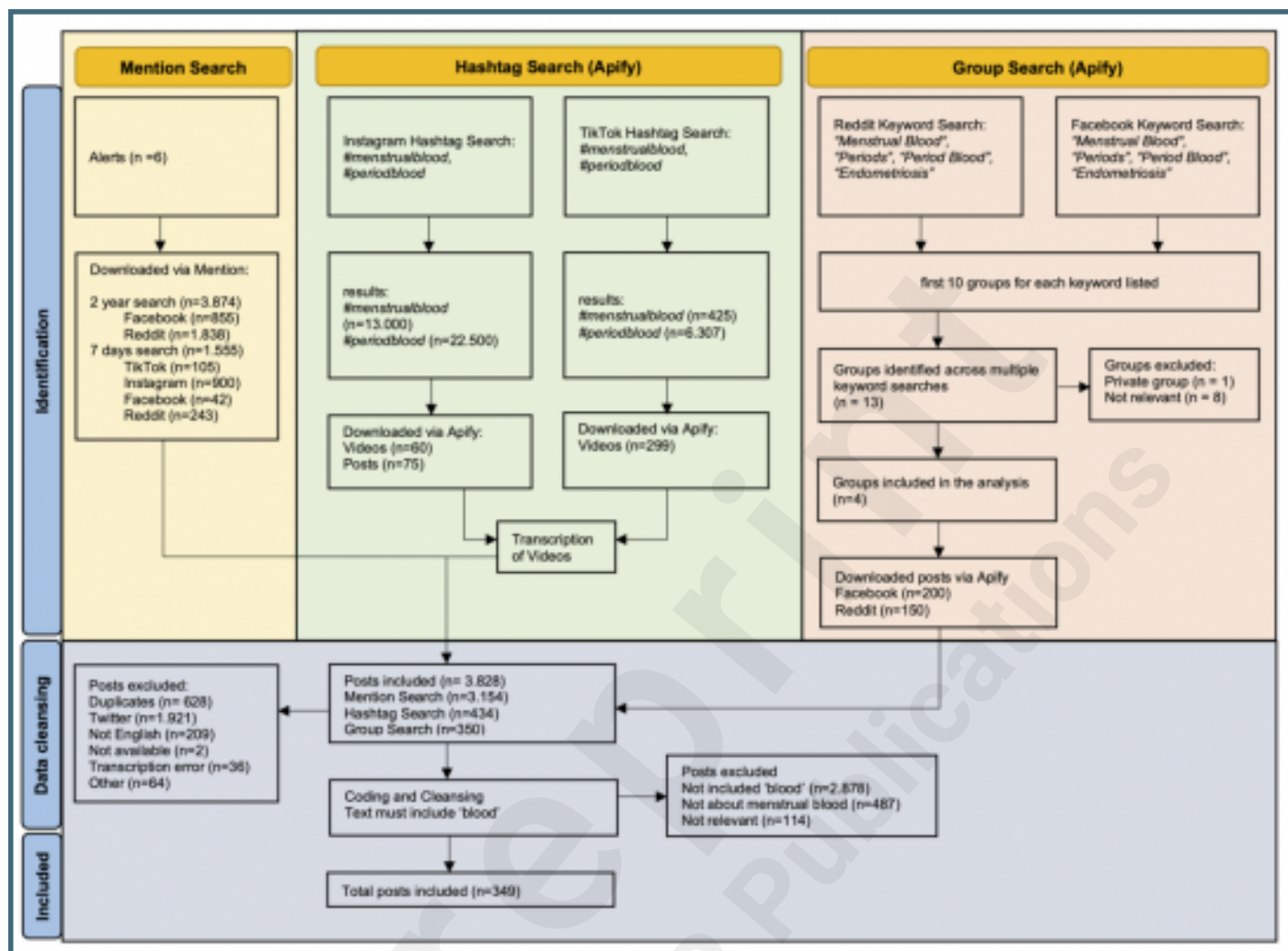
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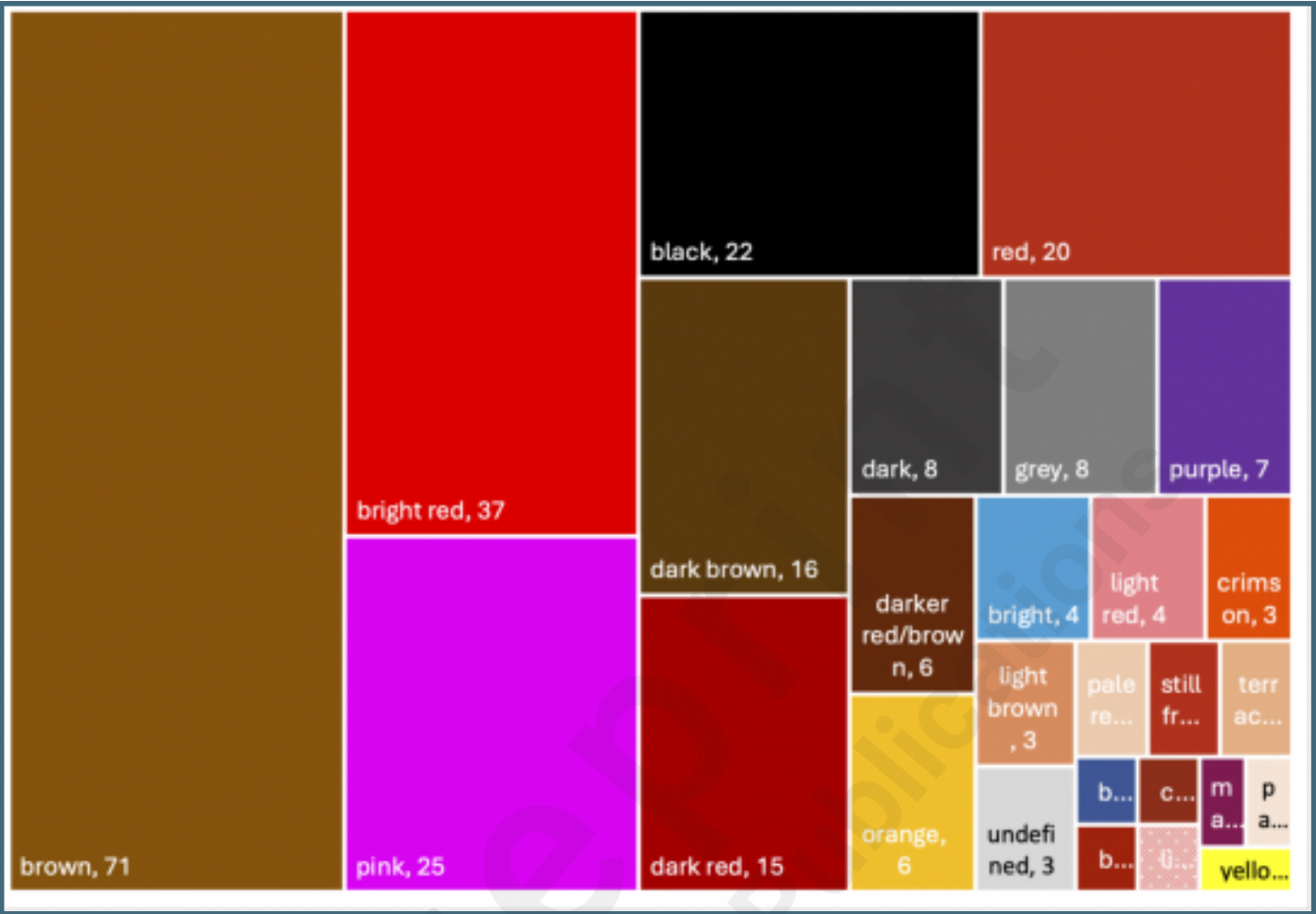
Supplementary Files

Figures

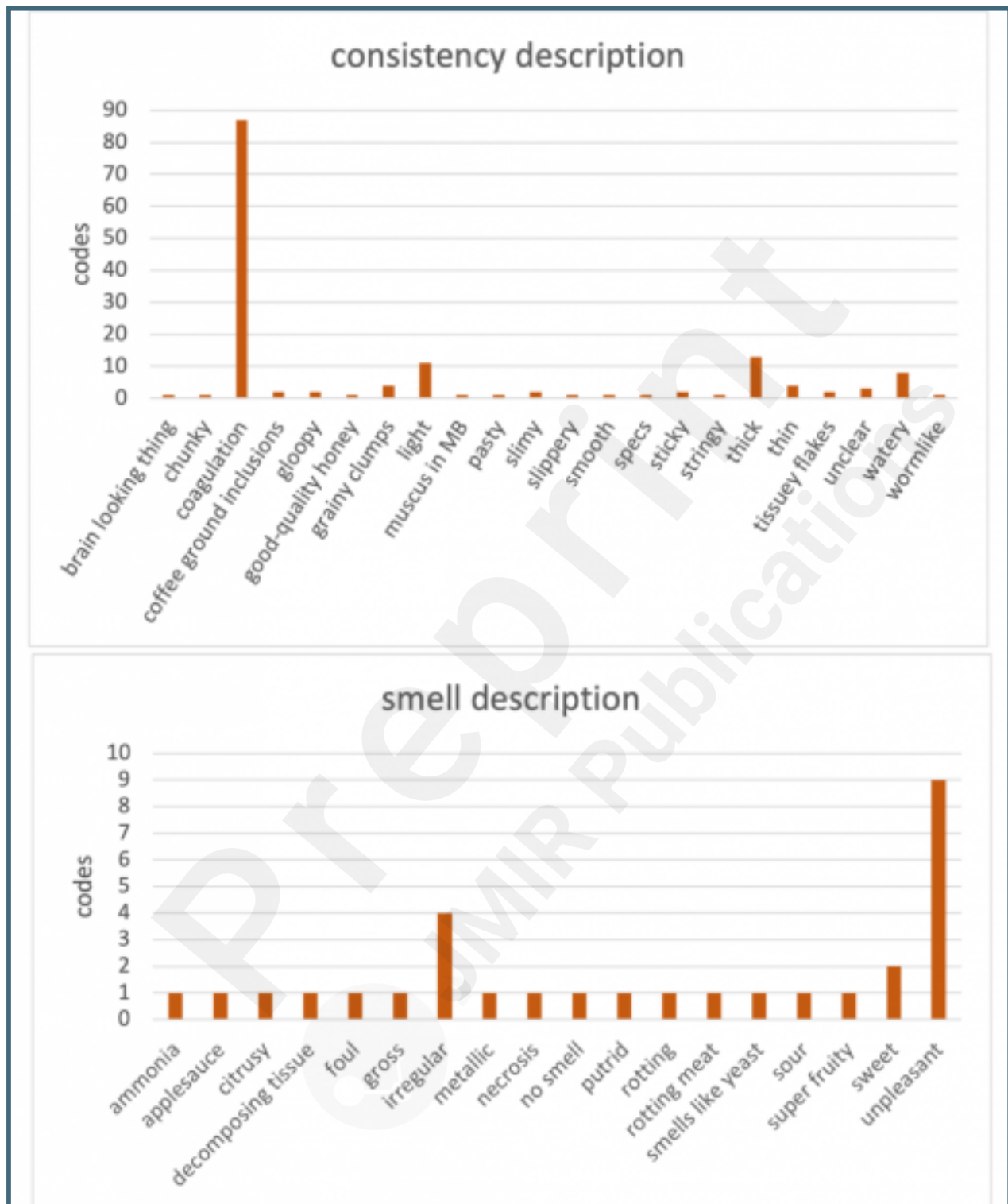
Identification and Downloading Process.



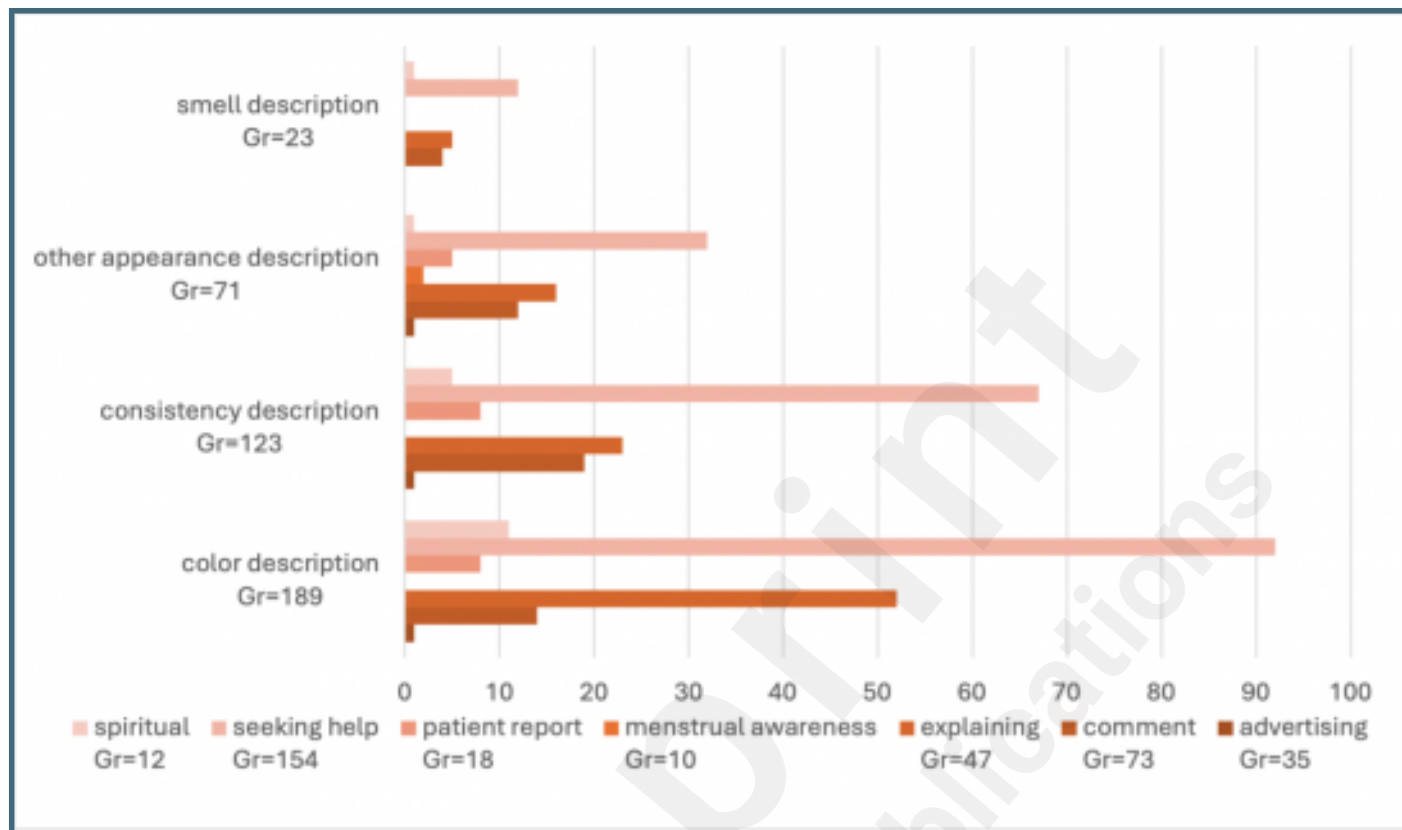
Tree map visualisation of colour descriptions mentioned in posts.



Bar charts of consistency (top) and smell (bottom) descriptors.



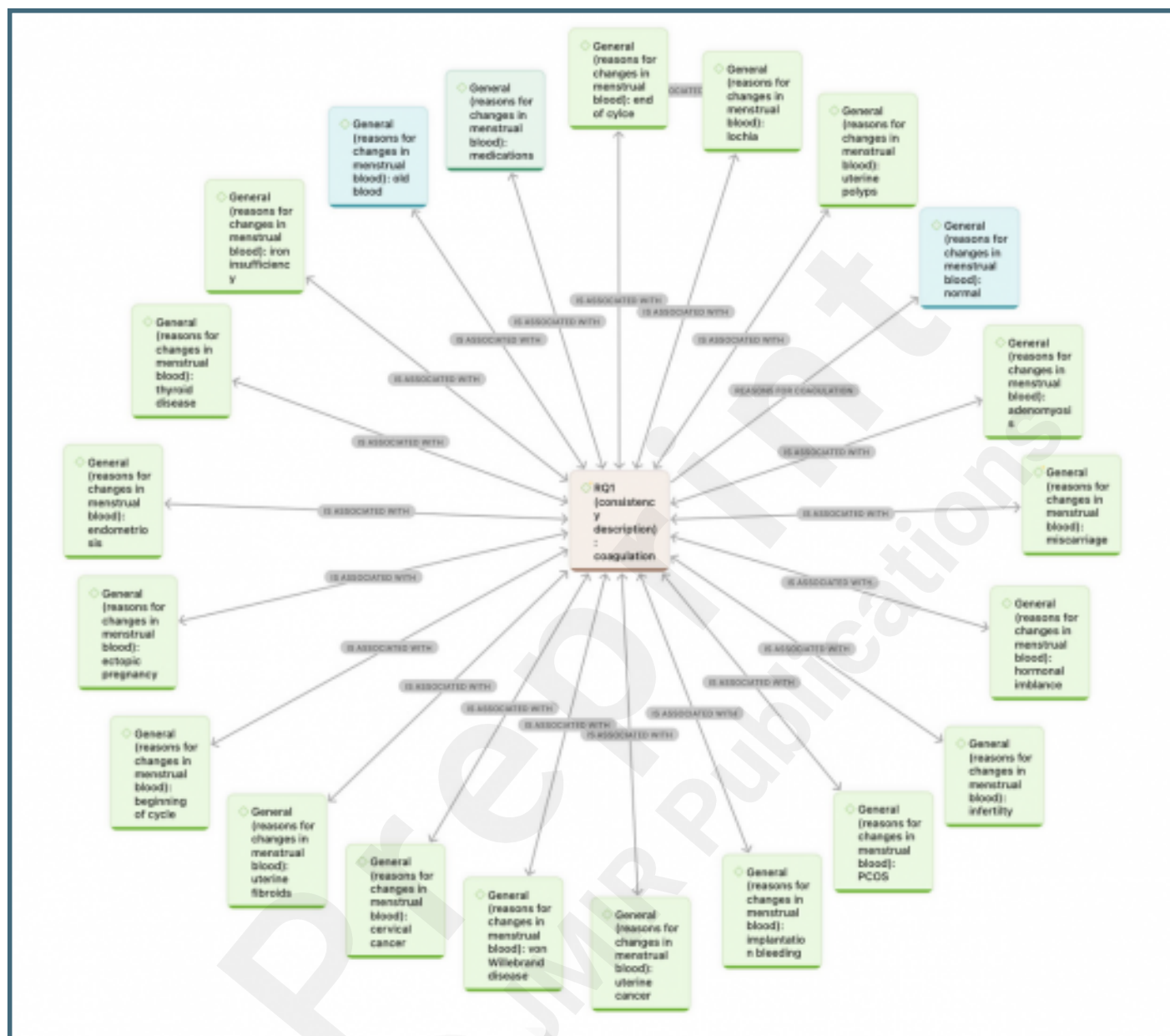
Distribution of qualitative posts describing the appearance of menstrual blood across different post types (Gr = Groundedness: number of all quotations coded by a specific code).



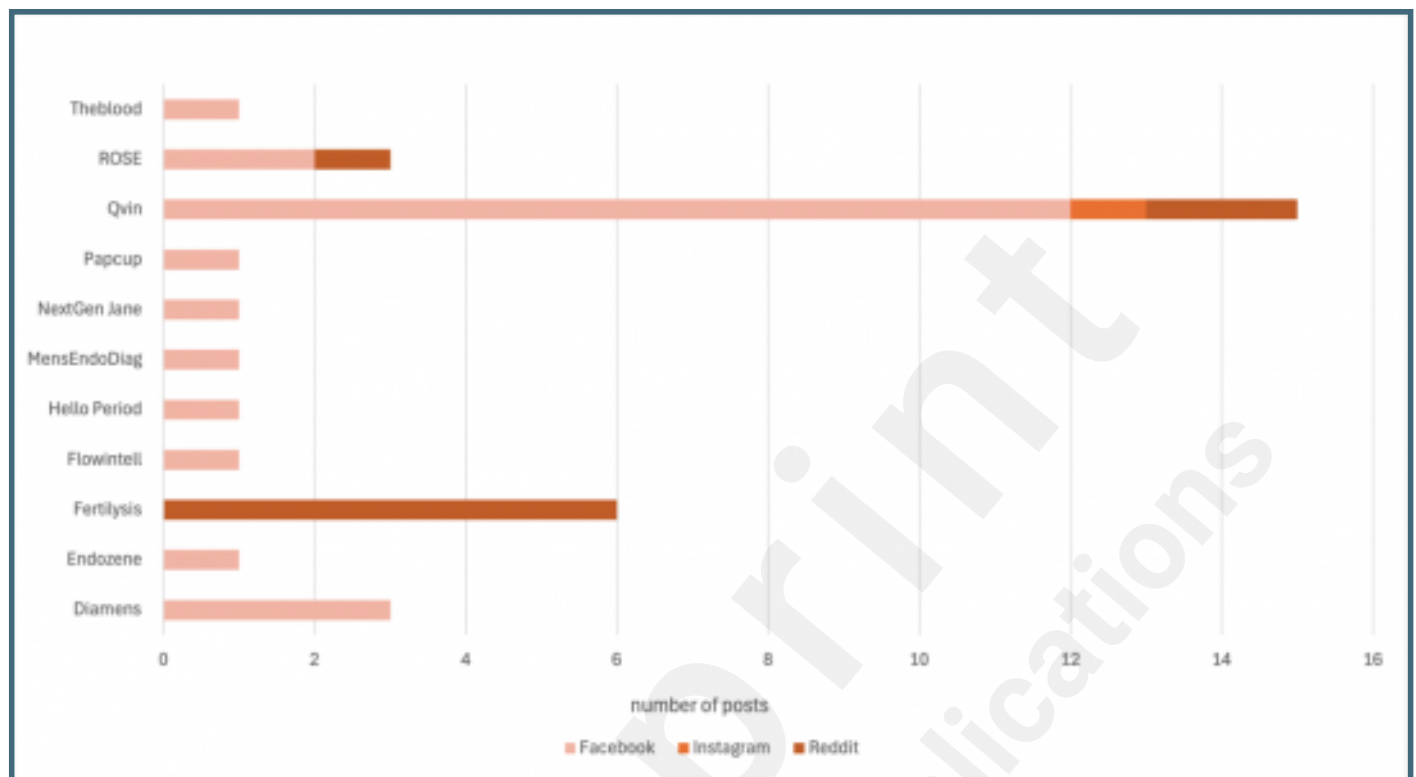
Conceptual map illustrating the association between the most frequent colour descriptions (brown, bright red, pink and black) and associated health conditions.



Conceptual map illustrating the association between coagulation and associated health conditions.



UntitledNumber of posts mentioning diagnostic companies or research groups related to the use of menstrual blood for diagnostic purposes across three social media platforms (Facebook, Instagram, Reddit).



Multimedia Appendixes

Search strategies.

URL: <http://asset.jmir.pub/assets/49a60b2e292542567787e0adf1df2dc4.pdf>

Codebook.

URL: <http://asset.jmir.pub/assets/e209a6f9e99f90b501d2334e9f46497a.pdf>

Results.

URL: <http://asset.jmir.pub/assets/538eabf9d50e0d8d431b57d1ecf22308.pdf>

