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Kübra Annac

kuebra.annac@uni-wh.de

Witten/Herdecke University

Anna Audia

Witten/Herdecke University

Christina Abramow

Witten/Herdecke University

Selina Bayrak

Witten/Herdecke University

Yüce Yilmaz-Aslan

Witten/Herdecke University

Patrick Brzoska

Witten/Herdecke University

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Social media as a tool to promote informed decision-making in cervical cancer screening among Turkish migrant women in Germany: Protocol for a participatory mixed-methods study (SIFEMi)

Kübra Annac[1]*, Anna Audia[1], Christina Abramow[1], Selina Bayrak[1], Yüce Yilmaz-Aslan[1], Patrick Brzoska[1]

1 Witten/Herdecke University, Faculty of Health/School of Medicine, Health Services Research Unit, Alfred-Herrhausen-Strasse 50, 58448 Witten, Germany

*Correspondence: kuebra.annac@uni-wh.de

Abstract

Background: Cervical cancer can be effectively prevented through screening, yet uptake of cervical cancer screening is socially patterned. Migrant women, particularly younger Turkish migrant women in Germany, may encounter informational, communicative, structural and emotional barriers that hinder informed decision-making. These barriers include limited access to target-group-relevant information, lower health literacy, shame, fear and discomfort related to gynaecological examinations. Social media may offer a low-threshold channel to reach younger women and to provide culturally and diversity-sensitive health information in formats that are accessible and acceptable.

Methods: SIFEMi is a prospective, non-clinical, non-randomised participatory mixed-methods study. It aims to develop and pilot a diversity-sensitive social media campaign that supports informed decision-making for or against the use of cervical cancer screening among Turkish migrant women. The study comprises five sequential and interlinked components: (A) a scoping review of existing cervical cancer screening information materials; (B) a quantitative and qualitative content analysis of identified materials; (C) a discussion circle with six Turkish migrant women acting as co-researchers; (D) two participatory workshops to co-develop campaign content and design; and (E) a pilot implementation of the campaign through a social media influencer, accompanied by monitoring of reach and engagement and a qualitative process interview. Patient and public involvement is embedded throughout the study through co-researchers, a social media influencer, patient organisations, prevention experts and a Turkish migrant gynaecologist.

Discussion: The study will generate evidence on how existing cervical cancer screening information can be transformed into diversity-sensitive social media communication and how participatory approaches can inform campaign development for groups affected by inequities in preventive care. Findings may be used to evaluate whether a social media campaign can support informed decision-making on cervical cancer screening.

Trial registration: Not applicable.

Keywords

Cervical cancer screening; informed decision-making; migration background; social media; Instagram; TikTok; participatory research; mixed methods; health literacy; diversity

Background

Cervical cancer remains an important public health concern despite the availability of effective prevention and early detection. In Germany, approximately 4,640 women were newly diagnosed with cervical cancer in 2020 and approximately 1,600 died from the disease [1]. Cytological screening using the Papanicolaou test has been shown to substantially reduce cervical cancer incidence and mortality [2]. However, the benefits of screening depend not only on the availability of services but also on equitable access to comprehensible, balanced and trustworthy information that enables women to decide whether participation is appropriate for them [3].

In Germany, cervical cancer screening is not utilized equally across population groups. A survey of 2,012 adult women insured by statutory health insurance showed that 16.1% had never participated in annual cancer screening, with particularly low lifetime uptake among women aged 20-29 years [4]. Population-based analyses further indicate that migrant women from EU and non-EU countries have lower odds of using cervical cancer screening than women without a migration history, even after adjustment for socioeconomic variables [5]. Comparable Austrian data suggest that young Turkish migrant women are among the groups with particularly low screening uptake [6].

The reasons for lower uptake are complex and should not be reduced to individual preferences. Barriers may include limited access to target-group-relevant information, lower health literacy, communication problems, cultural misunderstandings, different understandings of health and illness, an unfavourable patient-provider relationship and emotional responses to the examination such as shame, fear and discomfort [7]. These barriers can affect not only whether women use screening services but also whether they are able to consider screening in a way that is informed, value-congruent and free from avoidable misunderstandings.

The relationship between barriers and informed decision-making is important because participation in cervical cancer screening requires an informed, value-based decision rather than automatic uptake. Participation in cervical cancer screening may enable the detection and treatment of precancerous lesions, but it can also involve disadvantages such as false-positive or false-negative results [8]. Informed decision-making therefore requires relevant knowledge, an attitude that is congruent with personal values and a behavioural decision that is consistent with that attitude [9, 10].

However, existing cervical cancer screening information may not sufficiently support the decision-making process for younger Turkish migrant women in Germany. Currently available information is not necessarily understandable, balanced, trustworthy or relevant to the everyday realities of the intended audience [8, 11]. It may fail to address emotional and social barriers such as shame, fear, mistrust or uncertainty about gynaecological examinations, and it may not be provided in formats or settings in which younger women actively seek, encounter and discuss health information [7, 12, 13]. The central problem is therefore not only lower screening uptake, but a communication gap: there is limited evidence on which existing materials are suitable for supporting informed decision-making in this group, which elements require adaptation and how balanced screening information can be translated into accessible and credible communication formats [7, 8, 11].

Social media may be a promising channel for addressing this communication gap among younger women. Instagram and TikTok are widely used in younger age groups and health-related information is increasingly encountered and interpreted through social media environments [12, 13]. At the same time, social media health communication must be developed carefully. It should be accurate, balanced and understandable; it should avoid stigmatising or deficit-oriented representations; and it should be tailored to the communicative practices and needs of the intended audience [14]. Participatory approaches are well suited

to this task because they involve members of the target group as co-researchers rather than treating them solely as recipients of health information [15].

Against this background, the present study, SIFEMi, aims to develop and pilot a diversity-sensitive social media campaign designed to support informed decision-making on cervical cancer screening among Turkish migrant women in Germany. The long-term goal is to derive transferable principles for diversity-sensitive social media campaigns in prevention and health promotion.

Aim and research questions

The overall aim of SIFEMi is to co-develop and pilot test a diversity-sensitive social media campaign that promotes informed decision-making for or against the use of cervical cancer screening among Turkish migrant women in Germany.

The study addresses the following research questions:

- What information materials on cervical cancer screening are available for Turkish migrant women?
- Which existing information materials on cervical cancer screening can be used or adapted within a social media campaign to promote informed decision-making in the target group?
- How should cervical cancer screening information be designed in terms of content, language, format and visual presentation to promote informed decision-making within a social media campaign for the target group?

Methods/Design

Study design and setting

SIFEMi is a prospective, non-clinical, non-randomised participatory mixed-methods study. It combines scoping review methods, quantitative and qualitative content analysis, participatory group discussion, participatory workshops, social media pilot implementation and qualitative process evaluation.

Participatory approach and public involvement

Co-research is central to the study. Six Turkish migrant women will be involved as co-researchers throughout the development process. Their role includes discussing the adequacy of existing information materials, contributing experiential knowledge on barriers and resources, supporting the interpretation of materials and co-developing the content and design of the campaign. This approach is intended to strengthen target-group relevance, reduce researcher bias and support the development of a communication strategy that is credible and acceptable to the intended audience [15]. Purposeful sampling will be used to include different experiences with cervical cancer screening: two women who have previously used cervical cancer screening services, two women who have not previously used such services and two women who have experienced cervical cancer. Co-researchers will be recruited through social media platforms such as Instagram and TikTok and, where appropriate, through partner organisations and networks. Participation will be voluntary and based on written informed consent.

Additional stakeholders include a Turkish migrant social media influencer, prevention and cancer information experts, patient organisations and a Turkish migrant gynaecologist. Further partners involved include the Cancer Information Service of the German Cancer Research Center, pro familia NRW and the patient organisations Cancer Unites and Jung und Krebs e.V., associations supporting individuals with cancer. Their involvement is intended to ensure medical accuracy, practical relevance, diversity sensitivity and communicative feasibility.

Study components

The study consists of five components that build on one another (Fig. 1). Patient and public involvement is embedded throughout the study through co-researchers, a social media influencer, patient organisations, prevention experts and a Turkish migrant gynaecologist.

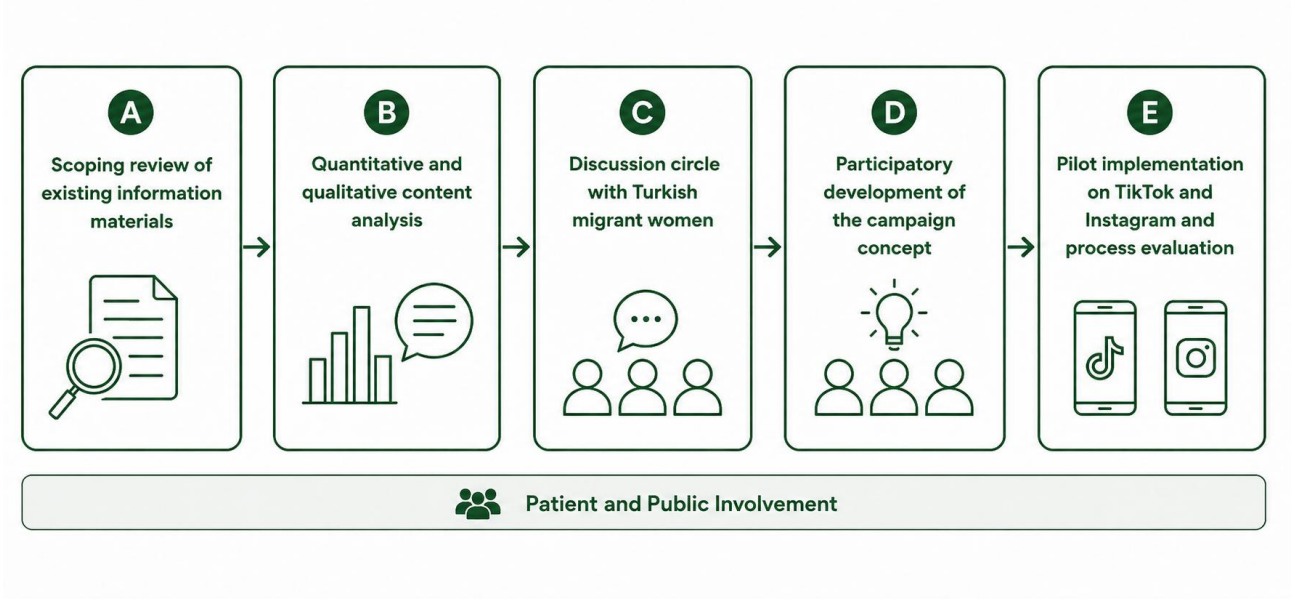


Figure 1 Study components of the SIFEMi study

Component A: Scoping review of existing information materials

A scoping review will identify existing information materials and relevant literature on cervical cancer screening that may be suitable for use or adaptation in the social media campaign. Searches will be conducted in databases including PubMed, CINAHL, PsycINFO and Web of Science. German- and English-language literature published since 2004 will be considered. Reference lists of included publications will be screened, and grey literature will be searched using Google Search and Google Scholar. The scoping review approach will be guided by the PRISMA extension for scoping reviews (PRISMA-ScR) [16].

Screening and selection criteria will focus on materials that address migrant women and cervical cancer screening, informed decision-making and health communication, with a particular focus on Turkish migration history where available. Search strings, eligibility criteria and reasons for exclusion will be documented to ensure transparency and reproducibility.

Component B: Quantitative and qualitative content analysis

Information materials identified in Component A will be analysed using quantitative and qualitative content analysis. Quantitative coding will assess which topics, screening-related facts, benefits, disadvantages, behavioural recommendations, emotional aspects and target-group references are present and how frequently they occur. A codebook will be developed based on established principles of content analysis [17].

Qualitative content analysis will explore how messages are framed and which communication strategies are used. This will include, for example, whether materials primarily address factual information, emotional aspects, social norms, case examples, barriers to screening or trust in healthcare professionals. Coding and category development will follow qualitative content-analytic procedures [18]. The results will provide the empirical basis for discussing the suitability of existing materials with co-researchers and stakeholders.

Component C: Discussion circle with Turkish migrant women

A discussion circle will be organised with six co-researchers. The discussion will focus on the results of the scoping review and content analysis and will explore whether existing materials sufficiently address the needs, resources and perspectives of Turkish migrant women. The discussion will also examine perceived barriers to informed decision-making, informational needs, language and visual preferences, emotional aspects such as shame or fear, and the acceptability of different forms of social media communication.

After obtaining informed consent, the discussion circle will be audio-recorded, transcribed and anonymised. Where translation is necessary, it will be conducted in a way that preserves meaning while protecting confidentiality. Co-researchers will be involved in the interpretation of material as an interpretation group. This collaborative interpretation is intended to reduce researcher-centred interpretation and strengthen the credibility and relevance of the findings [15].

Component D: Participatory development of the campaign concept

The campaign concept will be developed in two participatory workshops involving the co-researchers, the social media influencer and the scientific project team. Prevention and cancer information experts as well as a gynaecologist will be involved where appropriate.

Workshop 1 will focus on content. Participants will identify which information should be included in the campaign, which messages require careful balancing, how benefits and disadvantages of screening should be presented and how emotional and social barriers can be addressed without reinforcing stigma. Materials identified as suitable in Components A-C will serve as the basis for adaptation. The development process will be informed by communication theory, particularly campaign models for health communication [19].

Workshop 2 will focus on design, format and dissemination. Participants will discuss visual presentation, language, tone, image use, emotional appeals, narrative elements and TikTok- and Instagram-specific formats such as posts, stories and reels. The aim is to translate the content concept into concrete campaign elements that are target-group-sensitive, medically accurate, visually engaging and feasible for implementation through the socia media influencer's profile and community. The workshop will result in draft campaign materials such as texts, images, story sequences or reel concepts.

Component E: Pilot implementation on TikTok and Instagram and process evaluation

The campaign materials developed in the workshops will be piloted through the TikTok and Instagram profile of the participating social media influencer. The number, format and timing of posts will be determined in the co-development process and aligned with the social media influencer's usual communication style and the expectations of her community. Possible formats include images, videos, stories and reels.

During implementation, the project team will monitor published content and reactions such as likes, comments and other engagement indicators where these are available. Metrics will be used descriptively to assess reach and engagement. Publicly visible comments will be handled with particular care. Usernames and identifiable details will not be reported, and no verbatim quotation of identifiable comments will be published without appropriate ethical consideration and, where required, consent.

After the pilot, a qualitative process interview will be conducted with the social media influencer. The interview will explore feasibility, perceived reach, perceived fit with the target audience, challenges in implementation, reactions from followers, and the extent to which the content and design were compatible with the social media influencer's communication style and community norms. The interview will be audio-recorded transcribed, anonymised and analysed qualitatively [18].

Outcomes and outputs

Focusing on intervention development and preliminary pilot implementation, the study does not define clinical endpoints. The main outputs are:

- a structured overview of existing cervical cancer screening information materials relevant to the target group;
- a content-analytic assessment of the strengths, gaps and communication strategies of these materials;
- target-group-informed requirements for diversity-sensitive social media communication on cervical cancer screening;
- a participatorily developed social media campaign concept, including draft content and design formats;
- descriptive information on pilot reach and engagement; and
- qualitative process findings on feasibility, acceptability and perceived fit.

Sample size and recruitment rationale

The number of six co-researchers is based on the participatory and developmental purpose of the study. The aim is to include a small but heterogeneous group with different experiences of cervical cancer screening and cervical cancer [15]. This group size is expected to be manageable for intensive co-production while allowing diverse perspectives to be articulated and discussed.

Data analysis

Data from the scoping review will be summarised descriptively, including publication or material type, source, target group, language, format and thematic focus. Content analysis data will be analysed quantitatively through frequencies of coded categories and qualitatively through category-based interpretation of message strategies, framing and suitability for social media adaptation [17].

Qualitative data from the discussion circle and social media influencer interview will be analysed using qualitative content analysis [18]. Transcripts will be coded inductively and deductively, drawing on the research questions, the informed choice framework and the categories emerging from the data. Interpretive work will include discussion within the research team and, where appropriate, with co-researchers. Campaign monitoring data from TikTok and Instagram will be analysed descriptively and used to inform the process evaluation.

Data management and confidentiality

All data will be handled in accordance with applicable data protection requirements and principles of good epidemiological and scientific practice. Audio recordings will be stored securely at the Health Services Research Unit at Witten/Herdecke University and transcribed immediately after the interview. Transcripts will be anonymised before analysis. Access to raw data will be restricted to authorised members of the research team. Qualitative and quantitative data will be archived and documented in accordance with good scientific practice.

Participants will receive written information about the study purpose, responsible contacts, data collection, data management, the voluntary nature of participation and their right to withdraw. Written informed consent will be obtained before participation. Particular attention will be paid to the sensitivity of gynaecological health, cancer experiences and migration-related positioning. The campaign will provide information and signposting rather than individual medical advice.

Ethical considerations

Formal ethical approval for SIFEMi has been obtained from the Ethics Committee of Witten/Herdecke University (application number S-08/2025).

Discussion

The project SIFEMi responds to a persistent equity issue in preventive healthcare: the availability of screening services does not necessarily ensure that all population groups can make informed decisions about whether to participate. Migrant women may face multiple barriers to cervical cancer screening, including limited access to relevant information, communication difficulties and emotional barriers related to intimate examinations [7]. By combining evidence synthesis, content analysis and participatory co-development, SIFEMi seeks to create a communication approach that is both evidence-informed and grounded in the perspectives of the target group.

A key strength of the study is its participatory design. Co-researchers are involved not only as informants but also as contributors to interpretation and campaign development. This is particularly important for diversity-sensitive communication because externally designed materials may miss the linguistic, emotional and social contexts in which decisions are made [15]. The involvement of a social media influencer further addresses the practical realities of social media communication: credibility, tone, platform conventions and community expectations are central to whether a campaign is noticed and trusted [20, 21].

The study also has practical and operational challenges. Recruitment of co-researchers with different screening experiences may require careful outreach and trust-building. Discussions about cervical cancer screening and cancer experiences can be sensitive and may evoke shame, discomfort or distress. The project will therefore prioritise informed consent, confidentiality, respectful facilitation and the option to withdraw at any time. Social media implementation also involves platform-specific uncertainties, including algorithmic visibility, audience reactions and the limits of interpreting engagement metrics as indicators of impact.

The study is not designed to determine effectiveness. Its pilot component will provide information on feasibility, acceptability, reach and engagement, but it will not test whether the campaign changes knowledge, attitudes or screening behaviour. This limitation is intentional: the aim is to develop and refine a campaign concept and to generate a strong basis for a future outcome evaluation. A future study will be able to use the campaign materials, process findings and target-group-informed design principles generated by SIFEMi to evaluate effects on informed decision-making.

If successful, SIFEMi will contribute to health services research and health communication by showing how diversity-sensitive prevention campaigns can be developed through co-production and adapted to social media contexts. Although the campaign is developed exemplarily for Turkish migrant women and cervical cancer screening, the resulting principles may inform communication strategies for other groups, diversity dimensions and prevention contexts.

Declarations

Ethics approval and consent to participate

The study has received formal ethical approval from the Ethics Committee of Witten/Herdecke University (application number S-08/2025). Written informed consent will be obtained from all participants before participation. The study will be conducted in accordance with the approved protocol, applicable data protection requirements and principles of good scientific practice.

Consent for publication

Not applicable for this protocol manuscript. The manuscript does not contain identifiable individual person's data. If campaign materials or subsequent publications include identifiable images, videos or

individual details, consent for publication will be obtained from the individuals concerned before dissemination.

Availability of data and materials

No datasets were generated or analysed for this protocol manuscript. Data generated during the study will not be made publicly available if individual privacy could be compromised. Anonymised data or relevant materials may be available from the corresponding author on reasonable request and subject to ethical and data protection requirements.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

KA drafted the manuscript and contributed to the conceptual refinement of the study protocol. YYA, PB and KA conceived the study and developed the original study design. AA, CA and SB contributed to the methodological development of the study and to the refinement of the participatory research approach. PB is the principal investigator and acquired funding for the study. All authors approved the final version of the manuscript.

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