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GynPillsBridging Public Health and Digital Innovation in Reproductive Care

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Abstract

In an era increasingly shaped by digital information flows, reproductive health communication must adapt to new challenges-particularly the widespread circulation of misinformation, low health literacy among younger populations, and unequal access to reliable, inclusive content. This article presents #GynPills, a digital public health initiative developed by the Obstetrics & Gynecology Unit of Degli Infermi Hospital of Biella, Italy, which aims to bridge these gaps through accessible, evidence-based reproductive health communication integrated with clinical services. Launched in 2024, #GynPills utilizes mobile-first formats such as short videos, infographics, and live Q&A sessions, disseminated via Instagram, TikTok, and community networks. Its content is shaped by users' frequently asked questions and emerging health trends, and is co-designed with clinical professionals and community representatives. The project targets adolescents, young adults, and underserved populations, prioritizing clear language, multilingual access, disability inclusion, and cultural sensitivity. More than a communication campaign, #GynPills functions as an extension of local reproductive health services, including cervical screening, contraception counselling, and access to assisted reproduction, providing users with a digital front door to public care. Its content is systematically reviewed for scientific accuracy and directly linked to service navigation, thereby fostering trust and increasing health service uptake. Evaluation of the initiative indicates strong community engagement, measurable improvements in health knowledge, increased use of reproductive services, and greater user confidence in navigating healthcare. Feedback shows that the project helps counter misinformation, improves therapeutic relationships, and supports early access to care. #GynPills demonstrates how public health institutions can lead in digital innovation by embedding communication within healthcare systems. It offers a replicable model for other territories and thematic areas, from sexual health to vaccination. The project highlights the importance of public sector investment in strategic, inclusive, and evidence-informed communication, affirming that digital health is not a substitute for care, but a fundamental component of an equitable, modern public health system.

Introduction

In recent years, a marked surge in digital health information seeking has dramatically reshaped how individuals access reproductive health knowledge. Users are increasingly turning to the internet and social media platforms for guidance on

contraception, fertility, pregnancy, and reproductive wellbeing. However, much of this content is uneven in quality and scientific accuracy, and misinformation abounds, posing serious risks to public health and patient empowerment [1]. Against this backdrop, #GynPills - a project launched by the Obstetrics & Gynecology Unit of Degli Infermi Hospital of Biella,

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Italy-is designing a novel model of digital public health communication in reproductive care. Its core mission is to leverage trusted, accessible, and evidence-based content produced by public health professionals to fill the digital information gap safely and effectively. The goal of this review is to illustrate how a public institution can innovate in health communication, reaching digital-native audiences with rigorously verified information and bridging the distance between users and formal health services. Over the next sections, we analyse the critical need for reliable digital communication in reproductive health, describe the genesis and structure of the project, and examine its approaches to language, accessibility, reach among younger generations, equity, community engagement, and integration with clinical services. We argue that #GynPills exemplifies a replicable model for modern public health agencies to harness digital tools, promote reproductive health literacy, and reduce inequalities. The evidence drawn from relevant studies and assessments underscores the potential of digital public health interventions to support prevention, empowerment, and continuity of care.

Digital Health Communication Gaps and Risks

Research underscores the growing problems associated with online health misinformation. Systematic reviews of reproductive health misinformation have identified numerous misleading claims and narratives spanning contraception, fertility, abortion, and maternal care- care that diverges from professional guidelines and misleads users [2]. General misinformation ecosystems, termed “infodemic” contexts, have been shown to reduce vaccination uptake, obstruct outbreak control, increase fear, and disrupt health service use [3].

Moreover, information-seeking behaviours vary across demographic groups. Younger people, individuals with limited education, and socially marginalized populations often experience lower digital health literacy, leaving them more vulnerable to misinformation and less able to appraise online content [4] critically. Adolescents with low e-health literacy are particularly at risk of believing or sharing inaccurate reproductive health advice [5].

Even among motivated users, trust in online sources is influenced by platform type, commercial status, and presence of misinformation. A recent study among high cardiovascular-risk individuals found that users trusted non-commercial websites free of misinformation more than social media or commercial sites, highlighting the importance of transparent, professional messaging [1].

Public Health’s Role in Digital Innovation

In response to these challenges, public health organisations have a critical role in offering evidence-based digital health communication. One systematic review of social media use in health promotion emphasizes that health institutions should engage online, invite conversation, and provide accurate messaging using digital delivery formats [6].

Another narrative review calls for multi-sectoral digital governance, community-led fact-checking, and open-source tools to counter reproductive health disinformation [7].

These conclusions reflect broader calls from governmental and research bodies advising that health entities must “meet people where they are” online, especially younger audiences, and promote credible, accessible, evidence-based content to counteract quackery and damaging algorithms [8].

#GynPills: A Public Sector Innovation

Within this context, #GynPills stands out as an institutional response grounded in public health values. Developed through the collaboration between the Gynecology and Obstetrics Unit and the Public Relations Office of the Degli Infermi Hospital in Biella, Italy, the project addresses the urgent need for public, accurate reproductive health communication on digital platforms. Rather than leaving social media to non-regulated influencers or commercial apps, the Gynecology and Obstetrics Unit authors, in collaboration with the Public Relations Office, designed their own content-videos, infographics, social media posts, and live events- designed to answer the most frequent questions from patients and users.

The project aims at three main objectives:

Education: teaching scientifically accurate reproductive health information.

Prevention: promoting fertility awareness, sexual wellbeing, and early detection of risks.

Empowerment: helping users make informed decisions and access services when needed.

Using formats adapted for social media, #GynPills leverages bite-sized content tailored to varying digital platforms while ensuring adherence to scientific oversight and evidence-based messaging (to be discussed further in Sections [4, 5].

The Need for Reliable Digital Health Communication

In an era where online platforms serve as the first source for health information, reproductive health topics are especially susceptible to misinformation. A growing body of literature highlights how misinformation surrounding contraception, fertility, pregnancy, and abortion proliferates online, often going viral while scientifically accurate content struggles for visibility [9]. This situation poses a significant threat to both individual autonomy and public health outcomes. A comprehensive review of health misinformation on social media found that a striking proportion-sometimes over 80%-of online health-related posts were either misleading or entirely false, with reproductive health among the most affected topics [10]. These misleading messages are often shared in emotional, anecdotal, or ideologically charged formats, which increase their reach and influence.

Algorithms that reward engagement tend to amplify such content, even when it contradicts scientific consensus.

Reproductive health misinformation is particularly harmful because it may delay care, promote unsafe practices, or dissuade individuals from using effective contraceptive methods. Moreover, stigmatized topics such as abortion or infertility are especially vulnerable to sensationalist distortions, limiting access to compassionate and evidence-based support [9, 10].

One of the core issues underlying the spread of misinformation is digital health literacy-the ability to find, interpret, evaluate, and apply health information obtained online. A systematic review on health literacy in reproductive care shows that individuals with higher literacy levels demonstrate more preventive behaviors (e.g., timely prenatal care, contraceptive use) and make more informed decisions [11]. Conversely, limited health literacy is associated with a higher risk of misinformation uptake and poorer health outcomes [11].

Young people are disproportionately affected. While they are the most frequent users of digital platforms, studies indicate that adolescents and young adults often lack the critical skills needed to evaluate the quality of online reproductive health content [12]. This group is also less likely to consult healthcare professionals, increasing their reliance on online sources. As a result, they are more susceptible to misinformation about topics like emergency contraception, STIs, or fertility tracking apps [12].

A 2022 study on adolescents' digital health behavior revealed that lower e-health literacy is significantly correlated with higher trust in unreliable sources and a greater likelihood of sharing misinformation with peers [12]. These findings underline the urgency of integrating media literacy and reproductive health education into youth-targeted communication strategies.

Public health institutions must respond to this challenge with credible, accessible, and engaging digital communication. A systematic review on social media for health promotion demonstrated that institutional presence on platforms like Instagram, YouTube, and TikTok can help counter misinformation if the content is delivered in user-friendly, evidence-based formats [6]. These reviews emphasize the importance of active listening, consistent presence, and audience-tailored messaging to ensure impact.

In addition to trustworthiness, equity is a central concern in the design of digital health interventions. A scoping review on digital health equity frameworks has shown that without specific efforts to address digital divides, such as disparities in access to smartphones, broadband, or digital literacy, online interventions may inadvertently widen gaps rather than close them [13]. Reproductive health, already marked by inequities based on gender, socioeconomic status, and geography, is especially vulnerable to such unintended consequences.

Several frameworks suggest that equity must be embedded from the outset of any digital health project, including co-design with underrepresented groups, multilingual content, and privacy protection. The Digital Health Equity Framework, for instance, advocates integrating structural and technological accessibility from content design to evaluation [13]. This is especially important when communicating sensitive topics like sexual health, which may carry stigma or cultural taboos.

Empirical evidence supports the effectiveness of well-designed digital reproductive health campaigns. A meta-analysis of digital interventions aimed at adolescents found improvements in sexual health knowledge, safer sex intentions, and contraceptive uptake [14]. The most effective programs included interactive features-such as quizzes or live Q&As-and maintained scientific integrity while adopting engaging, culturally sensitive formats.

However, the digital space is not without risks. Poorly designed digital health content can perpetuate myths, induce anxiety, or compromise privacy. A 2018 framework on mitigating risks in sexual and reproductive health technologies advises anticipating possible harms, such as misinterpretation of content, surveillance concerns, or triggering experiences, particularly among survivors of violence [15]. These risks necessitate thoughtful content moderation and clear privacy policies.

Furthermore, systemic challenges can prevent even reliable content from reaching users. Investigations into content moderation policies by major digital platforms such as Meta and Google show that even medically accurate content about abortion, fertility treatments, or LGBTQ+ reproductive health is sometimes censored or deprioritized in certain regions due to unclear advertising and moderation guidelines [16]. This restricts visibility for trustworthy content and underscores the need for stronger advocacy and partnerships between public institutions and platform regulators.

To conclude, this section illustrates the complex and urgent need for reliable digital communication in reproductive health. Misinformation is widespread and particularly dangerous in this field; young and underserved populations are most at risk; and while digital channels offer immense opportunity for outreach and education, they must be implemented with attention to literacy, accessibility, safety, and equity. The #GynPills initiative represents a strategic response to these challenges, combining scientific rigor with digital innovation in a public health framework. The next section will explore how the project was created and structured within the local healthcare system.

Project Genesis and Structure

The #GynPills initiative was developed through the collaboration between the Gynecology and Obstetrics Unit and the Public Relations Office of the Degli Infermi Hospital in Biella, a public local health authority in Northern Italy, as a direct response to the growing digital demand for reliable reproductive health information. As misinformation spread rapidly online, local clinicians began noticing an increasing number of patients arriving with misconceptions, ranging from the use of emergency contraception to fertility tracking myths. It became evident that traditional in-person counselling was no longer sufficient to meet the evolving informational needs of the community, particularly among younger and more digitally engaged users.

The project took shape in 2024, supported by a multidisciplinary working group including gynecologists, midwives, public health educators, communication experts, and digital media professionals.

From its inception, the project was guided by three overarching goals: to educate, to prevent, and to empower. Education aimed to bridge knowledge gaps with scientifically accurate, accessible content; prevention focused on increasing awareness of issues such as contraception, sexually transmitted infections, menstrual health, and fertility; and empowerment meant equipping users to make informed choices and seek timely care when needed. These goals were fully aligned with the WHO's public health promotion framework and Italy's national preventive health strategies [6-17].

Rather than relying on conventional health campaigns with static brochures or institutional websites, #GynPills embraced a digital-first strategy. Its content was designed from the outset for mobile and social media consumption, acknowledging that platforms like Instagram and TikTok had become the primary sources of health information for adolescents and young adults. Formats were carefully adapted to meet users where they are: short-form videos, educational infographics, interactive carousels, and live Q&A sessions with clinicians became the backbone of the project's communication style. Posts were shared via the Degli Infermi Hospital of Biella's official social media accounts, but also disseminated through schools, local youth groups, and community networks to amplify reach [17].

Importantly, the editorial process behind each piece of content was subject to scientific review and institutional oversight. All content was developed in collaboration with physicians, ensuring that messages reflected the latest clinical guidelines and avoided oversimplification. Language was deliberately chosen to be inclusive and easy to understand, without sacrificing precision or nuance. Visual aids were used to clarify complex topics, such as ovulation or contraceptive mechanisms, and all materials adhered to accessibility standards, including subtitles, alternative text, and mobile readability [18].

Topic selection followed a dynamic and responsive model. Rather than publishing content according to a fixed curriculum, the editorial team based its programming on real-world questions collected during clinical visits, messages received on social media, and trends observed in online health searches. For instance, recurring confusion about how the morning-after pill works led to a dedicated series explaining its timing, mechanism, and differences from abortion. The success of this post not only generated high engagement but also correlated with a measurable increase in timely emergency contraception requests at local clinics [19].

Far from being an isolated communications effort, #GynPills was integrated into the broader structure of local health services. Content is often linked directly to services offered at the Degli Infermi Hospital of Biella, such as sexual health counselling, cervical screening, or the Medically Assisted Reproduction Center. The digital channel became an informal front door—an entry point for users who might otherwise delay or avoid seeking care. By ensuring continuity between what was communicated online and what was delivered in the clinic, the project helped reinforce therapeutic alliances and reduce perceived barriers to access [17-19]. Resources were modest but strategically

managed. A core team of three staff members coordinated the initiative: a health communicator, a social media manager, and a physician-editor. Physicians and midwives participated on a rotating basis, contributing medical content and appearing in videos. All involved professionals received training in plain-language communication, digital safety, and social media ethics. The project was funded entirely through Degli Infermi Hospital's existing health promotion budget, making it a sustainable and replicable model for other regions [19].

Evaluation was embedded from the start. Monthly reviews assessed user engagement, post reach, and qualitative feedback from users. Anonymous surveys measured changes in knowledge and confidence following specific campaigns, and service access data was cross-referenced with thematic content. For example, after a mini-series on fertility awareness, the staff involved in the project observed a notable increase in early-stage fertility consultations and more informed patient questions during intake interviews [19].

In summary, #GynPills emerged from the recognition that reproductive health communication must evolve alongside its audience. By anchoring the project within a public institution, grounding its content in scientific evidence, and designing it for the realities of modern digital life, the Gynecology & Obstetrics Unit of Biella Hospital built a model that is not only effective but also scalable. In the next section, we will explore how the project navigated the delicate balance between accessibility, simplicity, and scientific integrity—an essential trio in effective digital health education.

Language Accessibility and Scientific Rigor

One of the cornerstone principles of #GynPills is a commitment to crafting content that speaks plainly, remains scientifically accurate, and is accessible to the broadest public possible. In an era where medical jargon often alienates rather than informs, the project intentionally employs plain language strategies. This approach aligns with well-established public health guidance, which highlights that plain language enhances comprehension, trust, and empowerment—especially among individuals with limited health literacy [20,21].

From the outset, the editorial team prioritized writing that avoids technical terminology whenever possible. When medical terms are unavoidable, they are always explained in straightforward language. Each video, infographic, or social media post is composed to satisfy readability standards akin to those proposed by health communication authorities, ensuring the audience can quickly understand and act on the information delivered [20]. Studies have shown that plain language summaries of biomedical findings significantly improve user satisfaction and comprehension compared to traditional scientific abstracts [22,23].

Accessibility extends beyond language: all visual content is designed for mobile consumption, with simple design elements, clear hierarchies, and intuitive navigation. Alt-text descriptions accompany every infographic, and video content includes subtitles, making the project inclusive for users with disabilities or those viewing without audio [18]. Such measures reflect global best practices in public health communication design, which recommend multi-modal delivery to optimize reach and usability [20,24]. Equally critical to the project's credibility is scientific rigor. Every piece of content undergoes a standardized review process by health professionals—gynecologists, midwives, and reproductive health experts—who ensure accuracy, consistency, and alignment with current clinical guidelines.

This institutional oversight guards against oversimplification and shoddy generalization. Credibility, transparency, and evidence-based sourcing are core attributes recommended by national advisory bodies for high-quality online health information [25].

Internally, the editorial workflow mandates citation of up-to-date medical literature in support materials and includes disclosure of sources or limitations when uncertainties persist. This transparency fosters trust and distinguishes public health messages from unregulated social media claims, countering the powerful influence of algorithm-driven misinformation [26].

In addition to clarity and accuracy, the project embraces user-centered design. Before launching new content formats or themes, focus groups and informal feedback sessions gather input from adolescents, pregnant persons, and citizens with limited digital fluency. This co-design approach ensures that messages resonate culturally and linguistically with varied subgroups. It reflects frameworks in digital equity scholarship that emphasize that inclusion must be built into communication design, not tacked on afterwards [27].

Evidence supports this strategy. A scoping review of youth perspectives on digital health promotion highlighted that adolescents are receptive to health information delivered through platforms they already use, but only when it feels relevant, respectful, and user-friendly [28]. Similarly, digital health maturity models now include communication quality, personalization, and satisfaction as key domains—precisely the areas prioritized by #GynPills [29].

Feedback mechanisms reinforce continuous improvement. Engagement analytics are complemented by surveys assessing clarity, perceived trustworthiness, and likelihood of behavioral intent. When a post appears confusing or generates misinformation concerns, the content is revised. This iterative quality-control process promotes both clarity and integrity [19]. The union of plain language, accessibility, user-centered design, and rigorous review makes #GynPills a model of evidence-based digital health communication. It not only educates, but does so in a manner that is inclusive, engaging, and professionally credible. In doing so, the project advances the dual goals of health promotion and equity in reproductive care across diverse digital audiences.

Reaching the Younger Generations

Engaging adolescents and young adults through digital channels is one of the most important pillars of the #GynPills initiative. Recognizing that younger generations rely heavily on platforms such as Instagram and TikTok for health information, the Gynecology & Obstetrics team of Biella designed content strategies specifically tailored to these environments, with the goal of both capturing attention and promoting preventive reproductive behaviours.

A recent survey of US women aged 18 to 29 found that approximately 65% intentionally used TikTok for health information, while an astonishing 92% encountered

health-related content unintentionally in their feeds [30]. Such data underscores how Tik-Tok shapes health perceptions—even without users actively seeking out medical advice. However, credibility remains a concern: although many obtain information there, they often lack certainty about its accuracy and rarely verify it against trusted sources [30].

To harness these patterns effectively, #GynPills created bite-sized, visually engaging videos under two minutes, leveraging hashtags, trending sounds, and short captions to fit naturally into scrolling rhythms. The language is conversational yet scientifically grounded, often featuring clinicians speaking directly to the camera. This style mirrors what young users expect from peers online, but retains the reliability that characterizes public health messaging. Where possible, myth-busting posts contrast popular misconceptions (e.g., about emergency contraception or menstrual cycle tracking apps) with factual explanations, in line with social media health promotion frameworks [31].

Indeed, a framework proposed by the Journal of Medical Internet Research highlights five essential principles for effective public health campaigns via social media: tailored messaging, involvement of target communities in development, myth-busting, designing for shareability, and evaluation based on real-world outcomes [32]. #GynPills integrates all of these principles: content is co-created with young community representatives; misinformation is actively addressed; material is crafted to be easily shareable; and engagement is measured not only in likes and shares but also in tangible impacts like service uptake.

International evidence supports this approach. Scoping reviews of youth digital health promotion emphasize that adolescents respond best to content that is culturally relevant, respectful, interactive, and visually vivid—precisely the characteristics embodied in the project [33,34]. Another systematic review confirms that social media campaigns can boost sexual health literacy, create dialogue, and increase self-efficacy, particularly among younger populations [35].

Complementing this, digital education tools deployed among adolescents in resource-limited settings have shown strong results in improving knowledge and engagement when designed to be accessible, gamified, and user-centric [36]. Though these studies focus on different contexts, the core insight—that adolescents learn best when content is relatable, interactive, and mobile-optimized—holds true universally.

Social media content also reaches youth not via educational prompts but through normalized, peer-like messaging. Studies find that content from individuals sharing personal stories about reproductive health on TikTok is widely viewed and often more convincing than official information, which is not always accurate [37]. While peer-generated content has an impact, #GynPills intentionally combines personal-style tone with clinical accuracy to maintain trust without alienating youth authenticity [30-37]. Another concerning trend is apparent in fertility tracking apps and infrequency-promoted natural family planning. In England and Wales, reliance on such methods rose sixfold among women seeking abortions between 2018 and 2023, coinciding with a shift away from hormonal contraception [38].

Influencer marketing and social media myths were implicated as key drivers in misperceptions about hormonal contraceptive safety [38]. Addressing this phenomenon, #GynPills produced a series of explainer posts clarifying the efficacy and mechanism of contraceptives against commonly circulated myths, content which significantly increased engagement and clinic inquiries following publication (date-based evaluation referenced in Section 3's internal report).

Nonetheless, digital platforms remain uneven terrain. Both Meta and TikTok have been criticised for overzealous content moderation, sometimes censoring legitimate reproductive health information, particularly around abortion or contraceptive services [39,40]. This often forces important messaging to be subtly formatted or rephrased to comply with algorithms. #GynPills navigates this by carefully vetting language, avoiding banned keywords, and exploring alternate formats where necessary, while simultaneously advocating for greater platform accountability and support for public health actors [39].

In practice, the Gynecology & Obstetrics team found that youth engagement improved when content formats included Q&A session teasers, story polls, and collaboration with a trusted local youth Influencer who endorsed posts without propagating myths. The strategy not only improved reach and engagement metrics but also fostered a two-way feedback loop that informed editorial adjustments.

Crucially, the impact goes beyond likes. After a campaign on fertility awareness, the Gynecology & Obstetrics Unit of Biella recorded an increase in early fertility consultations, more informed questions during first visits, and overall improved rapport between young users and health services. These outcomes align with public health guidelines urging evaluation of real-world endpoints, such as clinic visits or screening uptakes, in addition to digital metrics [32].

In summary, #GynPills demonstrates how public health agencies can successfully engage younger generations in reproductive health by aligning content style with platform norms, preserving scientific integrity, partnering with communities, addressing misinformation head-on, and embedding impact assessment throughout. These practices not only enhance visibility but also contribute to preventive health behaviours and meaningful service access. The next section will reflect on how these strategies support health equity and inclusion in the broader digital public health context.

Equity Inclusion and Digital Public Health

Promoting equity and inclusion is a foundational pillar of the #GynPills initiative. From the outset, the project was conceived not only to disseminate accurate reproductive health information, but also to ensure that this information was accessible to all community segments - especially those historically underserved by digital or healthcare systems.

One of the most pervasive barriers to inclusive digital health communication is the digital divide. Disparities in internet

access, device ownership, and digital literacy disproportionately affect rural populations, older adults, migrants, and those with lower socioeconomic status. Without intentional design, online interventions risk reinforcing rather than mitigating existing health inequities [41]. Recognizing this, ASL Biella ensured content was optimized for minimal data usage, mobile readability, and clear language - lowering the threshold for access.

Accessibility considerations also extended to disability inclusion. Videos were subtitled or captioned; info-graphics included alt-text descriptions; and platforms supported screen readers. Feedback from users with hearing or visual impairments guided iterative design improvements, such as high-contrast visuals and simplified layouts, in line with best practices for accessible digital health communication [42].

Equity also meant reducing financial and structural barriers to care. All information and services promoted by #GynPills were free of charge, clearly stated, and linked to existing public services, including sexual health screenings, counseling, and fertility consultations at the Level-One Medically Assisted Reproduction Center. This transparent linkage helped users navigate healthcare access pathways confidently, reducing uncertainty about costs and eligibility - a factor shown to improve service engagement in reproductive health [43].

Evaluation of impact on equity outcomes involved both qualitative and quantitative methods. Surveys assessed whether individuals from migrant backgrounds or lower-income households felt reached and understood by the content. Service utilization metrics were analyzed to compare engagement between groups, for instance, whether cervical screening uptake rose equally across demographics after relevant campaigns. Preliminary data suggested that campaign engagement and service access increased significantly even among lower-literacy users [19-44].

Digital health inequities can also stem from algorithmic filtering: identical content may be less visible to users in lower-income or non-native language groups if platform algorithms prioritize dominant-language or high-visibility networks. To counteract this, ASL Biella used community re-posting strategies, collaborating with community leaders, local NGOs, and migrant networks to amplify content, bypassing reliance on platform recommendations alone [42].

Inclusion further extended to sensitive user groups. #GynPills intentionally avoided stigmatizing language around fertility issues, abortion, or sexual orientation, and ensured that transgender individuals, LGBTQ+ persons, and persons with disabilities saw themselves represented in visual and narrative materials. This inclusive approach aligns with reproductive justice frameworks advocating representation, dignity, and respect for diverse identities in health communication [45]. Privacy and anonymity were also core considerations, particularly for sensitive topics. Live Q&A sessions were anonymized, and users were encouraged to ask questions privately or through moderated chat. No personally identifiable data was collected beyond aggregated analytics. External evaluation confirmed this approach built trust among young users, many of whom expressed comfort with the

privacy-preserving design [19-46]. Finally, equity in digital public health requires systemic support. By embedding #GynPills within the formal infrastructure of Degli Infermi Hospital of Biella, the project benefits from institutional credibility, sustainability, and alignment with broader public health goals. This institutional anchoring is essential to ensure the project does not rely on external funding, and that it continues to serve as an inclusive resource beyond short-term campaigns [17-19].

In conclusion, #GynPills operationalizes digital public health equity by lowering access barriers, supporting linguistic and cultural inclusion, safeguarding privacy, and collaborating with marginalized communities in a participatory design process. The approach demonstrates that digital reproductive health communication can be both innovative and just-delivering quality care to all, not just the digitally privileged. The next section will examine how these strategies have supported community engagement and measurable impact.

Integration with Clinical Services

The true innovation of #GynPills lies in its seamless integration with clinical services, particularly through its liaison with ASL Biella's Level-One Medically Assisted Reproduction Center. Far from being a distant communications initiative, the project functions as an integral extension of clinical care, reinforcing the continuum of reproductive health services.

From the outset, digital content was designed not just to inform, but to encourage timely clinical follow-up. Posts addressing topics such as emergency contraception, cervical screening, fertility preservation, or menstrual disorders consistently included clear references to relevant ASL services. This direct linkage encouraged users to consider clinical consultation as a next step, bridging the gap between online education and professional care [47].

Studies show that digital interventions aligned with clinical infrastructure yield stronger outcomes in healthcare-seeking behavior compared to isolated campaigns [48]. By mapping digital touchpoints directly to appointment scheduling, clinics' online portals, or counseling services, #GynPills served as both an educational resource and navigational guide. Users reported feeling more prepared and less intimidated when approaching clinical services after interacting with project content.

This reinforced alliance between digital and clinical care also supported therapeutic relationships. Patients arriving for appointments frequently referenced specific #GynPills posts, indicating that pre-exist education had shaped their questions and reduced anxiety. Clinicians noted that these informed visitors engaged more deeply in consultations, asked more nuanced questions, and demonstrated greater trust in care processes [19-49].

Moreover, the project supported a feedback loop between service utilization and content development. Clinical staff monitored trends in appointment types and diagnostic requests-such as spikes in fertility consultations or HPV testing-and shared these insights with the communications team. This real-time intelligence enabled targeted content creation, ensuring that the digital calendar remained responsive to emerging community concerns [19-49]. Importantly, #GynPills facilitated access to

assisted reproductive services through the Level-One Medically Assisted Reproduction Center. Informational modules on fertility timelines, diagnostic pathways, and legal entitlements were made publicly accessible. These modules demystified the process, clarified eligibility, and helped reduce delays in care-seeking. Surveys demonstrated that users felt more confident when booking consultations, reporting less fear of stigmatization and greater awareness of procedural steps [50,51].

This close coupling also translated to improved clinical efficiencies. Administrative staff reported that patients arriving for certain services required less preliminary explanation, as they were already oriented through digital materials. More efficient onboarding allowed providers to devote more time to nuanced counselling and personalized care. Anecdotally, clinicians expressed that consulting sessions felt more productive when informed patients arrived ready with specific questions [51].

The integration strategy extended to sexual and reproductive health screenings as well. For cervical cancer awareness campaigns, infographics and videos included direct links to booking cervical cytology tests at ASL clinics, reminders of cost-free availability, and reassurance of confidentiality. Post-campaign data demonstrated measurable increases in screening uptake, particularly among younger and migrant women [49-51]. Evaluative reports reinforce the efficacy of this approach. A mixed-methods study on healthcare alignment found that public health communication linked to provider infrastructure significantly enhanced service utilization, illness recognition, and early detection outcomes [52]. These results align closely with local ASL data, which showed earlier presentations for reproductive concerns, improved contraceptive uptake, and increased referrals for assisted reproduction evaluation.

Another benefit was the fostering of shared decision-making. Digital materials encouraged users to discuss reproductive choices with healthcare providers, providing tools such as downloadable question lists and guide sheets. During consultations, clinicians certified that these materials facilitated more meaningful conversations, paving the way for person-centered, evidence-driven decision-making [53].

Ethics and patient privacy were carefully managed. While encouraging appointment uptake, content refrained from collecting private data online; all bookings required formal clinical channels. Live sessions and comment threads were moderated to prevent disclosure of sensitive personal health information [19-50]. This created an environment of digital trust without compromising medical confidentiality.

Finally, the embedded linkage between digital content and clinical services underscores institutional accountability and sustainability. By housing #GynPills within the public healthcare system, the initiative avoids fragmentation and ensures continuity beyond short-term campaigns or external partnerships. The Obstetrics & Gynecology's ownership makes replication in other regions feasible, providing a template for embedding digital communication into public reproductive health services [17],[19], [52].

Discussion and Broader Implications

The #GynPills initiative illustrates how a local public health

institution can harness digital media to transform reproductive care communication, emerging as a model that is both innovative and replicable beyond its regional origin.

Replicability and Adaptation

First and foremost, #GynPills demonstrates a blueprint that can be adapted to other contexts and settings. The project's integration within ASL Biella's public infrastructure enabled sustainability, scientific oversight, and resource-sharing, making it more scalable than NGO-led or purely commercial campaigns. Other local health authorities can replicate this model by embedding digital communication teams alongside clinical services, ensuring alignment and continuity [17],[19],[52]. Lessons learned, such as dynamic topic responsiveness, multicultural co-design, and user-centered evaluation, are readily transferable to regions with diverse population profiles.

Potential Future Extensions

Looking ahead, several promising directions emerge. Collaborative initiatives with schools and universities could embed #GynPills-inspired content into curricula for sexual health education, reinforcing knowledge across multiple touchpoints. Partnerships with educational institutions may include digital modules, gamified learning, or peer-led workshops to further augment reproductive literacy [54].

Another direction involves deploying chatbot-based informational tools. Chatbots can provide interactive, anonymous Q&A support, automating basic responses while referring complex questions to professionals. Piloting such functionality could improve 24/7 access and reduce anxiety barriers, especially for users who hesitate to engage in public forums as they currently do on social media [54,55].

Extensions into coordinated regional or national campaigns offer substantial promise. Aggregating localized projects like #GynPills under a common framework could deliver uniform standards of communication quality, data sharing, and best-practice exchange. This collective model would amplify reach and reinforce public trust in institutional reproductive health messaging across broader geographies [55].

Institutional Roles in Digital Public Health

The #GynPills experience underscores the pivotal role public institutions can play in leading digital health innovation, particularly in reproductive care. Governments and health authorities must not cede digital communication entirely to private platforms or influencers; instead, they should actively participate in shaping the narrative, providing accurate alternatives, and transparently countering misinformation [6],[17],[19]. This aligns with broader calls for multi-sectoral digital governance. Public institutions should engage in policy advocacy to ensure equitable platform visibility for reliable information and hold algorithms accountable. As misinformation spreads globally, coordinated efforts-including public-private partnerships, regulatory frameworks, and community fact-checking networks-become essential to digital health resilience [31],[39],[40].

Lessons for Digital Public Health Strategy

#GynPills offers several strategic insights:

- Content as continuum: Digital health content must link explicitly to services, ensuring users can act on what they learn [48,50].
- Responsive editorial planning: Trust and relevance stem from content shaped by real user concerns, clinical trends, and feedback loops-not just top-down content calendars [19].
- Community co-design: Involvement of youth, migrants, and low-literacy users in content creation ensures messages resonate and respect cultural diversity [27],[45],[42].
- Accessibility built-in: Plain language, multilingual formats, disability-inclusive design, and low-bandwidth delivery are essential for reaching a wide audience [18],[41],[43,42].
- Integration and evaluation: Embedding communication within clinical pathways and systematically evaluating outcomes creates continuous improvement and tangible public health benefits [48-52].

Research and Evaluation Opportunities

While initial data from ASL Biella indicate positive outcomes in engagement and service uptake, further quantitative evaluation, such as controlled trials or comparative regional studies, would strengthen the evidence base. Evaluating metrics like contraceptive uptake, early diagnosis rates, and longer-term reproductive health outcomes would provide robust support for broader funding and policy endorsement [56].

Moreover, comparative research exploring different formats-e.g., social media posts versus chat-bot or app-based delivery-could clarify which modalities work best for various subpopulations, particularly those with specific literacy or cultural needs [56].

Ethnographic and qualitative research on user experience would deepen understanding of how individuals interpret, trust, and act upon public health messaging in digital spaces, especially when navigating stigma, privacy concerns, or platform moderation challenges [57].

Policy Implications and Wider Adoption

From a policy standpoint, #GynPills reinforces the imperative for public health authorities to invest in digital communication infrastructure, including staff training, budget allocation, and institutional accountability. Integrating digital content strategies into national health promotion policies would help ensure that reproductive education remains current, reliable, and equitable [17-19].

Policymakers should also consider frameworks to audit content visibility on digital platforms, ensuring that public services are not algorithmically suppressed. Mechanisms such as verified institutional accounts, priority reach for public health content, and transparent moderation rules would reinforce equitable access to trustworthy information [39],[40],[31].

Finally, aligning digital initiatives with reproductive justice principles strengthens their impact.

Communication strategies that respect individual autonomy, intersectional identities, and inclusive representation can help combat socially constructed health barriers-advancing both health outcomes and social equity [58].

Conclusion

The #GynPills project offers a compelling example of how digital innovation can be ethically and effectively integrated into public reproductive health systems. It illustrates that a local health authority, not a tech company, influencer, or private initiative, takes a leadership role in combating misinformation, promoting equity, and increasing service accessibility through strategic, evidence-based digital communication.

What makes #GynPills especially distinctive is its ability to translate public health principles into a contemporary, mobile-first communication model that speaks to the real needs and behaviours of today's users. Its approach, grounded in scientific integrity, accessibility, cultural inclusion, and institutional accountability, demonstrates that innovation in healthcare communication need not sacrifice rigor or equity.

By meeting users where they are, particularly on social media, and speaking in language that is clear, respectful, and empowering, the project has enhanced trust and knowledge among adolescents, young adults, and underserved groups. Its integration with clinical services ensures that information does not remain abstract but leads to concrete, measurable improvements in access to prevention, early diagnosis, and fertility care.

Moreover, the initiative proves replicable. Its structure, strategies, and evaluation methods can be adapted to other territories and thematic areas-from sexual health to vaccination, from chronic disease prevention to mental health. The project's success invites other public health entities to invest in digital capacity, engage in co-design, and embed communication into the full arc of care.

In an era marked by infodemics, digital fragmentation, and increasing health disparities, #GynPills stands as a timely and necessary model. It affirms that digital tools, when used thoughtfully and inclusively, can extend, not replace, the reach and values of public health. It also calls on institutions to recognize communication as a core public health function, deserving of strategic planning, dedicated resources, and policy support.

Ultimately, the experience of #GynPills suggests a broader vision: one where public digital communication is not an accessory to care, but a fundamental part of a modern, equitable, and responsive health system. A vision in which accurate, accessible, and empathetic communication becomes not just a right of citizens, but a duty of institutions.

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