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Research Article

Gendered Health Message Framing and User Outcomes Among Digital Media Users in Bangladesh: The Mediating Role of Perceived Message Credibility

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Abstract

In Bangladesh, as in the rest of South Asia, gendered health stories in digital media reproduce structural inequalities that determine how people perceive, judge, and respond to health information. Although there is increasing interest in scholarly research on digital health communication, the psychological processes that mediate the way gendered message framing is translated into user outcomes have not been adequately theorized and empirically validated, in this regard. This paper explores the relationship between agentic and communal gendered health message framing exposure and perceived message credibility and, in turn, behavioral intent and counter-narrative agency among users of digital media in Bangladesh. The study builds on the Social Constructionism (Berger & Luckmann, 1966), Framing Theory (Entman, 1993) and Gender Performativity Theory (Butler, 1990) by proposing a process-based model where the central mediating variable is credibility. A purposive sample of n = 500 Bangladeshi adults who were active on-line health content consumers was used to conduct a quantitative cross-sectional survey. The data were obtained by a structured questionnaire online with the help of validated multi-item Likert scale. The proposed model was tested using Structural Equation Modeling (SEM) with Maximum Likelihood Estimation including bootstrapping (5,000 resamples) as a mediation test and product-term interaction analysis as a moderation test. Agentic and communal framing were found to be important predictors of perceived message credibility. The relationships between framing types and both outcome variables—behavioral intent and counter-narrative agency were completely mediated by credibility. Media literacy was positively associated with behavioral intent and platform inclusivity, the strongest predictor of counter-narrative agency. Exposure to stereotypes had a negative effect on counter-narrative agency. Gender-role beliefs did not show significant moderation of the framing, credibility relationship, which implies interpretive norms might be changing even in younger, digitally-engaged Bangladeshi groups.

Keywords

Gendered Health Framing, Message Credibility, Digital Health Communication, Structural Equation Modeling.

1. Introduction

1.1. Background of the Study

The concept of health is not just a biological phenomenon, but is defined by language, culture, and power relations (Berger & Luckmann, 1966; Crawford, 2022). Illness experiences follow cultural structures to give meaning to the vulnerability, responsibility, and care, as medical sociology has shown (Kirmayer, 2023). These processes are especially relevant to Bangladesh, where deeply ingrained gender disparities, the high mobile internet penetration of about 56 percent (BTRC, 2023) and a fast-growing use of social media have provided a digital space where genderized health discourse is being massively shared and challenged. However, the country is at 99 on the Global Gender Gap Index (World Economic Forum, 2023), and the health experiences of women remain marginalized in the mainstream media coverage (Islam, 2024; Chowdhury, 2025).

In Bangladesh, studies have consistently shown that women have been portrayed in health media as caregivers and consumers of beauty and sanitation products, whereas men have been given a position of authority or performance-based health work (Chowdhury, 2025; Faisal et al., 2022). Men voices prevailed in the digital health information space in Bangladesh in the COVID-19 outbreak, and their female counterparts were pushed to the periphery (Faisal et al., 2022). Media health content exposure is linked to different reproductive health knowledge in adolescents and young women, although the interpretation of these messages is significantly informed by the existing gendered expectations (Pickard et al., 2024). Ahmed (2025) discovered that male and female social media users in Bangladesh received online mental health messages in different ways of emotional and performance-oriented attitudes, which supported the gendered digital health reception. Gender bias in decision-making about health that is reinforced by the media has been reported in the South Asian region, in both India and Sri Lanka (Jafree et al., 2020).

It has been acknowledged that health communication has pervasive effects on health behavior and well-being, which are cognitive, affective, and social (Edwards, 2021). Gendered representations and identities in the media structure these processes. The Health Belief Model identifies the influence of the perceived threat or benefit of health communication outcomes and Social Cognitive Theory is used to understand how the media representation of health behaviors can be a source of information and motivation (Islam et al., 2023). The ritual model of communication, as introduced by Carey and reviewed by Lundgren (2024) also emphasizes the fact that health information does not only serve as transmission but as the exchange of common cultural meanings - meanings that in the Bangladeshi context are highly gendered.

The structural power relations that control access to media and representation in it are shaped by the practices of omission, trivialization, and selective visibility (Carah, 2021). Media institutions still have the overwhelmingly gendered organizational hiring, promotion, and editorial decision-making, which results in skewed positions, content, and source utilization that perpetuate inequality (Riedl et al., 2024). Economic obstacles, such as the costs of the devices, the lack of digital literacy, and the socially accepted norms about the use of technologies by women, also limit the variation of health narratives available to the audience in Bangladesh (Gillwald & Partridge, 2022).

Regardless of these changes, there still exist major gaps in the comprehension of the way, in which gendered health discourses are produced, reproduced, and consumed by digital audiences in Bangladesh, in particular. The current literature recognizes gender as a social determinant of health (Miani et al., 2021; Chelak & Chakole, 2023; Frank et al., 2023) and reports gendered stereotyping of media health reporting, but offers little insight into how macro-level social power is translated into micro-level communicative decision-making shaping health narratives to digital users Alka The mixed results on the different persuasive powers of message appeals of agentic and communal appeals imply that theoretical frameworks might not be adequate to explain the modern digital complexities (Hsu et al., 2021). Moreover, because digital networks facilitate participatory communication, the means through which Bangladeshi users negotiate, resist or co-create gendered health discourses are still empirically under-studied (Delacruz, 2022). It is these gaps that comprise the main research problem of the current study.

1.2. Research Objectives and Hypotheses

The main objective of the study is to contribute to both theoretical and empirical frameworks on the role of gendered health message framing in psychological reactions and behavioral consequences on users of digital media in Bangladesh.

O1. To examine how exposure to agentic and communal gendered health message framing is associated with perceived message credibility among digital media users in Bangladesh.

O2. To assess the role of message credibility as a mediating psychological mechanism linking gendered message framing to behavioral intent and counter-narrative agency.

O3. To evaluate whether traditional gender-role beliefs moderate the relationship between message framing and credibility, and to test how individual-level characteristics — specifically media literacy and platform inclusivity — predict user behavioral intent and counter-narrative agency.

In line with these aims, the hypotheses presented below are put forward. All hypotheses indicate the direction of the relationship between the independent, mediating, moderating and dependent variables as derived out of the literature theoretically.

H1: Agentic message framing exposure is positively associated with perceived message credibility among Bangladeshi digital media users. (O1)

H2: Communal message framing exposure is positively associated with perceived message credibility among Bangladeshi digital media users. (O1)

H3: Perceived message credibility positively mediates the relationship between agentic framing exposure and behavioral intent such that higher credibility leads to greater behavioral intent. (O2)

H4: Perceived message credibility positively mediates the relationship between communal framing exposure and counter-narrative agency such that higher credibility leads to greater counter-narrative agency. (O2)

H5: Media literacy is a significant positive predictor of behavioral intent, after controlling for message framing and credibility. (O3)

H6: Platform inclusivity is a significant positive predictor of counter-narrative agency among users exposed to gendered health content. (O3)

Note: The traditional gender-role beliefs are tested as a moderating variable on the framing-credibility relationship. The structural model has environmental control variables that include stereotype exposure and platform inclusivity. Since cross-sectional survey design has been used, all directional paths will be theoretically based statistical relationships as opposed to causal chains.

2. Literature Review

2.1. Conceptual Background

There is no neutral description of biological states in the form of health narratives. They are socially constructed ideas of health, illness, and the body prescribing the way individuals and communities perceive vulnerability, blame, and moral responsibility (Rossi, 2021). In Bangladesh (and in the Global South more broadly) the structural contexts that condition these narratives cannot be understood outside of gender: cultural discourses of understanding women as the health care of the home and the family suppress the experiences of women with health and naturalize suffering as a virtue of femininity, and the health of men is positioned within discourses of power and productivity (Islam, 2024). Freda et al. (2023) state that narratives of illness translate the biological experiences into cultural idioms of distress, which translate individual suffering into publicly understandable formats. The health information circulated in the social media of Bangladeshi society thus functions within more expansive ideological structures whereby power relations, across the lines of gender, class, religion, and geography, dictate who has their health experiences become visible and who have their health experience become marginal (Rossi, 2021).

Breton (2023) makes it clear that cultural hegemonic discourses not only describe illness; they also create the moral aura that comes with health characterizations. As with the rest of the world, the neoliberal health discourses introduced into Bangladeshi digital health content have framed health as an individual responsibility and lifestyle control and obscured structural inequalities based on poverty, gender, and care access (Vera, 2020). These discourses are reinforced by the

media to make women health equivalent to beauty, care giving, and emotional self-control, and men health to physical performance and danger (Briggs & Hallin, 2016). By so doing, the media are not just a mirror of social hierarchies but they reproduce them. In Bangladesh, in particular, commercial health advertising portrays women by far as primary caregivers and consumers of beauty products, and men are portrayed as the users of the products with the focus on durability and strength (Chowdhury, 2025).

Media are used as a means of constructing and sanctioning popular health and illness ideas. By framing, as postulated by Entman (1993), media both choose and highlight certain aspects of health problems and, in doing so, propagate certain moral and political meanings. Examples include obesity, which has been recidivated as individual failure instead of a systemic issue; mental illness has been created as social deviance (Aftab & Rashed, 2021). Neoliberal concepts of thinness, productivity, and self-control are also spread by media medicalization as the universal health norms (Rodney, 2017). Although digital media have increased the space of non-traditional health voices in Bangladesh, especially through social media platforms that can be accessed via mobile phone, it has also heightened misinformation and commercialized health discourses that perpetuate dominant gender scripts (Kiousis, 2023). It is this dual force of digital media, as something emancipatory and a disciplining power, which is the conceptual tension of the present study.

2.2. Review of the Empirical Studies

In modern empirical research, media has been placed as a key location of construction and exchange of gendered meanings of sickness, caring, and health responsibility (Krijnen & Van Bauwel, 2021). As research has repeatedly shown, the health discourse of women in the digital media is emotional, caring, and aesthetic body work, i.e., the language of feeling and connection as defined by Loughran et al. (2022), whereas the health discourse of men is one of reason, dominance, and personal competence (Sharp et al., 2022). These are not simply descriptive differences; they form the symbolic order in which health itself is subjected to interpretation, legitimization and challenge. This trend can be seen in television health programming, digital advertising, and social media content in Bangladesh, where women are shown mostly as caregivers and homemade health consumers, and men in positions of authority as experts (Chowdhury, 2025).

The behavioral implications of these representations are backed by quantitative evidence. Male internalization of traditional masculinity conventions reinforced by mass media are characterized by evasion of preventive health care and increased stigma about illness (Oliffe, 2023). Tamplin et al. (2018) proved that the exposure to hyper masculine media images amplifies risk-taking and reduces health literacy. Dane and Bhatia (2023) discovered that body dissatisfaction and disordered eating behavior are related to exposure to body ideals in social media. Stienstra (2022) and Lemon (2025) report a complementary bias in digital spaces: women are written about as the leading force of wellness and self-care, whereas men are represented in the context of performance and productivity. Data on user engagement proves that these gendered trends are collaboratively produced by users who internalize and reproduce the gender health standards popularized in the media (Seluman et al., 2024).

Instagram, YouTube, and TikTok in the context of digital media in particular have made wellness a commodifiable and displayable good that is image and influence-driven (Gerstenecker, 2021). According to Bonah and Laukötter (2020), health has turned into an object of performance and exchange in such spaces, the standards of bodily and self-care are being constantly reconstituted on a screen. Kontolatou (2025) discovered that digital users are more willing to consume content that conforms to traditional gender roles and it is hypothesized that algorithmic visibility reinforces dominant gender norms. In that, Vicari (2021) credits the rise of digital health citizenship with both empowering new practices of self-surveillance and identity play, where the users identify themselves with idealized gendered ideals of fitness, beauty, and stamina. This is a reminder that the shift, between broadcasting and participatory media, did not eradicate the gender bias but instead repackaged and reinforced it on more intimate planes of personal display.

In a South Asian context, and in Bangladesh in particular, this literature acquires a new theoretical urgency. The reproductive health knowledge and use of contraceptives among Bangladeshi women who frequently viewed television programming on health issues showed significant improvement, although the meaning of these messages was significantly influenced by existing gendered norms (Pickard et al., 2024). Bangladeshi newspapers and online media coverage of the COVID-19 pandemic was highly dominated by men who held authoritative roles on health matters, leaving women with very little space (Faisal et al., 2022). According to Ahmed (2025), online mental health information is processed by male and female young people in Bangladesh in very specific gendered ways performance versus emotion - which replicate the global results in a very unique socio-cultural setting of Bangladesh. Indian and Sri Lankan studies support these results, showing that gender biases supported by the media diminish the perceived autonomy of women in health decision-making within the region (Jafree et al., 2020). Existing Bangladeshi scholarship thus confirms the salience of gendered framing

in health communication but stops short of testing the psychological mechanisms-specifically, the role of credibility - through which framing shapes user outcomes.

2.3. Research Gap

There are a number of methodological weaknesses of literature. The way media exposure influences health beliefs are a disputed issue; a significant portion of the studies fails to differentiate the impact of media exposure on attitudes and beliefs or pre-existing attitudes. The metrics of media exposure are often imprecise - frequency of television or internet usage - without consideration of content or framing of the message. South Asian studies are mostly urban and educated, which leads to context-related bias and limits their applicability to rural or less-educated populations in which the traditional gender norms might be more deeply ingrained. Class, religious, and rural differences are rarely considered even though they have proved to be of significance in understanding how the media frames are adopted by the Bangladeshi audiences.

The above review shows that there is a large gap in empirical literature. Although gendered media representations and their general reliance on health attitudes have been recorded, such as in the Bangladeshi case, no study has developed and empirically-validated a structural framework, which simultaneously combines agentic and communal message framing, perceived message credibility as a mediating variable and behavioral intent and counter-narrative agency as specific user outcomes, in a Bangladeshi digital media setting. It is this gap that the present study aims to fill in both theoretically and empirically.

3. Theoretical Framework

The theoretical approach of the current research merges Social Constructionism, Framing Theory and Gender Performativity Theory as a set of explanatory tools to offer a comprehensive understanding of the ways in which gendered health meanings are created, processed and received within digital communication context.

As a fundamental statement of Social Constructionism, which has its classical expression in the work of Peter L. Berger and Thomas Luckmann in their masterpiece work The Social Construction of Reality (1966), social reality, health and illness included, is not a natural fact but constructed in a social interaction, through the use of language and cultural convention. In that sense, health content that is shared in Bangladeshi social media does not overtly represent the biological reality; instead, it is rooted in ideological paradigms and pre-existing power hierarchies that make the media a key platform where gendered notions of vulnerability, responsibility, and proper health behavior are duplicated (Crawford, 2022; Krijnen & Van Bauwel, 2021). It is the social construction of health that thereby defines the credibility that audiences assign to internet health messages: credibility judgment is itself a culturally mediated process of making sense of health-related information in a particular social environment, sharing linguistic and cultural rubrics with which people make judgments of credibility (Metziger and Flanagin, 2015).

The Framing Theory, developed by Robert Entman (1993) is the means by which meanings shaped by society are operationalized. According to Entman, framing is the act of defining and highlighting some elements of a perceived reality in a way that facilitates a specific definition of a problem, causal explanation, ethical judgment and suggested solution. Following the present research, agentic and communal frames are gendered rhetoric strategies widely reported in health communication studies. The agency frames attribute health outcomes to personal agency, control, and achievement, whereas communal frames refer to social responsibility, relational support, and interdependence (Temmann et al., 2021). These frames inform the way the user will perceive the applicability and personal relevance of the health information and whether that information will affirm or disrupt their internalized gendered expectations. Most importantly, the study postulates that the framing effect is an indirect effect: It works in an evaluative process wherein General Credibility acts as the psychological gateway that needs to be passed through before any persuasive or empowering effect can occur (Hocevar et al., 2017).

Gender Performativity Theory is a third explanatory layer developed by Judith Butler in her book, Gender Trouble (1990) by demonstrating how gendering communication practices underpin the performative constitution of gender identity. The main thesis of Butler that gender is not a biological characteristic but rather a repetitive and regulatory act that is maintained through the use of cultural norms can be directly applied to the concept of digital health communication in Bangladesh. Since Jenkins and Finneman (2018) use this framework in the media, media portrayals of gender and health are not merely the manifestations of social norms but processes that create and institutionalize the expectations of how

men and women should talk, react and experience health. This theoretical lens is relevant in the current work to understand why the resonance of frame messages differs depending on Traditional Gender Role Beliefs, and that contextual factors, including Repeated Stereotype Exposure or Increased Platform Inclusivity, can either strengthen or weaken the relationship between framing and credibility in online contexts.

The combination of these three theoretical aspects helps the study to develop a process-based model of digital health communication. The frames of gendered messages (agentic and communal) are assumed to elicit socially constructed (Berger & Luckmann, 1966) and ideologically mediated (Entman, 1993) credibility judgments. With the credibility established, Behavioral Intent will be more likely: users will show readiness to adhere to suggested health behaviors (Tomczyk et al., 2021). Counter-Narrative Agency - the ability of users to consult, interrogate, and counteract harmful gendered health discourses on the Internet - can also be credible framed through gendered credibility (Vicari, 2021). These relationships are supposed to be moderated by individual-level moderators (Traditional Gender Role Beliefs) and environmental factors (Stereotype Exposure, Platform Inclusivity, Media Literacy). The integrated theoretical framework, therefore, facilitates a subtle explanation of the interaction between gendered message framing, credibility and social context to influence health-related decisions and agency of communication in Bangladeshi online contexts. Figure 1 shows the conceptual model of the study.

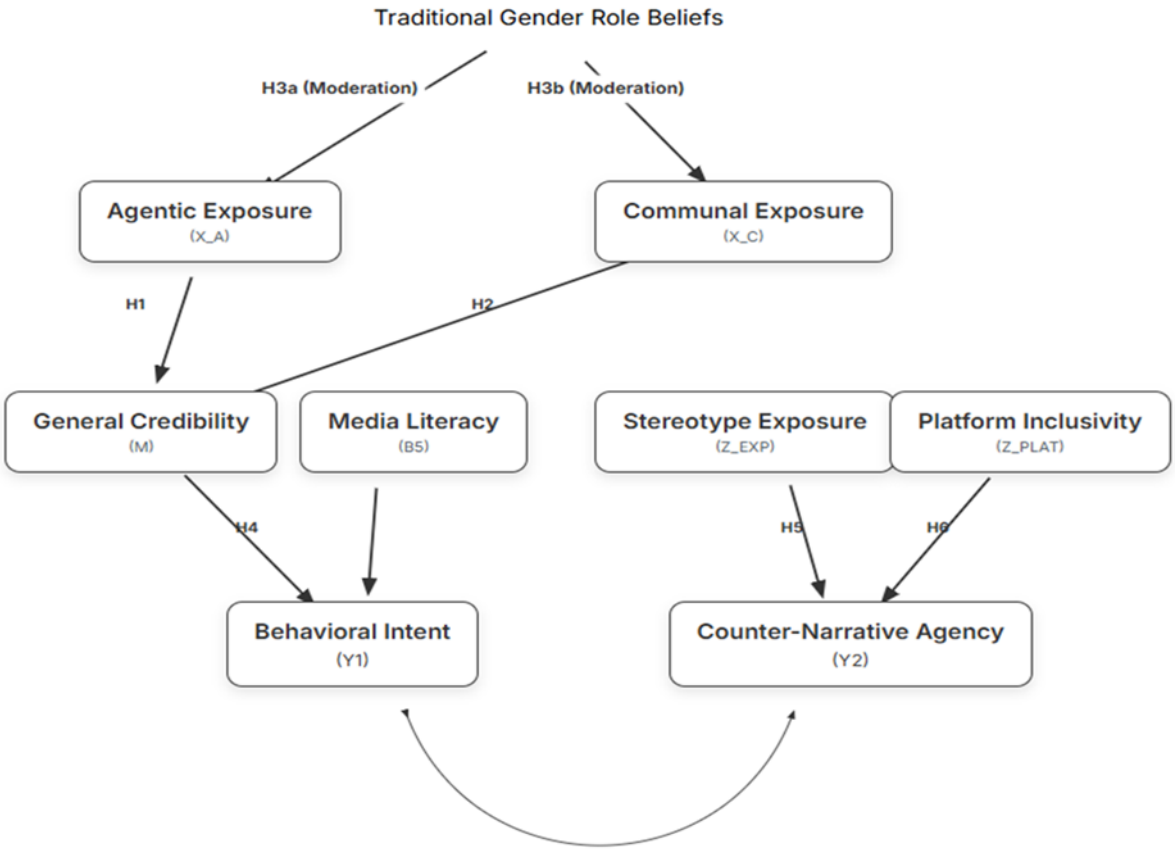

Figure 1: Conceptual Model of the Study — Authors' Own Construction

4. Methodology

4.1. Study Design, Sample Size, and Sampling Procedures

To test the hypothesized relationships between the message framing, the perceived credibility, and user outcomes, a quantitative cross-sectional survey design was used. The quantitative approach was preferred due to the fact that the theoretical model of the study presupposes the concomitant test of various latent constructs and their direct and indirect relationships and moderation effects - which is best achieved using Structural Equation Modeling. The cross-sectional survey methodology was considered as suitable since the study aimed at representing the self-reported user perceptions

in a demographically diverse sample in a specific time frame. Data collection was conducted with an online self-administered questionnaire, as it allows effective reaching the target population of the study active digital media users in Bangladesh, and the questionnaire gives the respondents some anonymity, minimizing social desirability bias on sensitive attitudinal questions on gender norms.

The population that was targeted was the adult residents of Bangladesh (18 years and above) who are regular users of social media and have received any content related to health on online platforms within the past three months before data collection. This sample was chosen since the theoretical framework and research questions will be defined with a specific reference to the Bangladeshi context of digital health communication.

A purposive sampling method was used to make sure that the respondents fit the inclusion criteria. Inclusion criteria were: (a) aged 18 years and above; (b) active use of at least one social media platform; (c) self-reported exposure to health-related digital content within the last three months. Inclusion criteria were: (a) age less than 18 years; and (b) excessively missing data (more than 10% of item missing). The online questionnaire was spread via various social media including the social media (Facebook) that is predominant in Bangladesh, thus creating geographic, education, and demographic diversity in the sample.

This sample size of n = 500 was selected based on considerations of power analysis in SEM. SEM must have at least 10 participants per parameter as suggested by Jobst et al. (2023). This model used eight latent constructs with 45 estimated parameters (factor loadings, regression paths, variances, covariance's), which made it have a minimum required sample size of n = 450 (10 × 45). The sample size of n = 500 was chosen based on the need to have stability in the model when subjected to factors of model complexity (eight latent variables, two mediating paths, two moderation terms) and population heterogeneity in terms of age, gender, education, and geographic subgroups.

4.2. Sample Description

Table 1. presents the demographic makeup of the sample. The respondents, who represented urban and rural regions of Bangladesh, were sampled and 60 percent of the sample lived in urban or metropolitan regions and 40 percent in rural towns or villages. The sample was also biased towards younger adults: 36% of the respondents were between 18 and 25 years old and 33% between 26 and 35, which is in line with the demographic characteristics of Bangladesh being a young, digitally active group. The gender was more or less even: 48 men, 50 women, and 2 people did not identify with either gender or did not want to specify their gender. The diversity of education is reflected on five levels, starting with primary school (10%) up to postgraduate degree (10%). Such a demographic profile can be seen as a reflection of the population with active digital health content users in Bangladesh, and the over-representation of urban, younger, and more educated respondents is a known sampling limitation (see Section 4.3 and the Limitations in Section 7).

Table 1: Summary of Participant Demographics

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age Group	18–25	180	36.0
	26–35	165	33.0
	36–45	100	20.0
	46+	55	11.0
Gender	Male	240	48.0
	Female	250	50.0
	Other/Prefer Not to Say	10	2.0
Education	Primary School	50	10.0
	Secondary/Vocational	150	30.0
	Higher Secondary	150	30.0
	Tertiary/University Degree	100	20.0
	Postgraduate Degree	50	10.0
Residential Area	Urban (City/Metro Area)	300	60.0
	Rural (Town/Village)	200	40.0

Note: To reduce social desirability bias no identifying information was collected and anonymity was guaranteed. Common method variance cannot be entirely ruled out as with all self-reported attitudinal surveys. Gender-role beliefs responses could be influenced by socially desirable attitudes, but not necessarily by strong normative stances, especially since gender equality

is becoming more of a visible discourse in modern Bangladeshi life. The large proportion of urban and younger respondents in the sample also might restrict generalization to rural and older populations where gender norms might be more traditional.

4.3. Measurement of Constructs

All the latent constructs were measured using multi-item validated scales to encapsulate the meaning and subtle attitudinal differences. Each of the items was rated on a five-point Likert scale anchored in 1 to strongly disagree to 5 strongly agree. Agency Framing Exposure (XA), Communal Framing Exposure (XC), General Credibility (M), Counter-Narrative Agency (Y2) and Traditional Gender Role Beliefs (MOD) were all assessed using five items. The four-item measures of Behavioral Intent (Y1), Stereotype Exposure (ZEXP), and Platform Inclusivity (ZPLAT) were used. Media Literacy (B5) was measured as a single self-reported measure, and was viewed as an observed control variable instead of a latent measure, due to expediency in survey length. To enhance measurement accuracy of this construct, future studies that use validated multi-item media literacy scales should be used.

4.4. Statistical Analysis

The statistical analysis was done in four consecutive stages. First, data screening procedures were utilized: missing data were analyzed with the help of the MCAR test, outliers were analyzed with the help of the Mahalanobis distance ($p < .001$ cut-off), and univariate normality was tested with the help of the Kolmogorov Smirnoff test. The data was suitable to use in the Maximum Likelihood Estimation-based SEM.

Second, all multi-item scales were evaluated through Confirmatory Factor Analysis (CFA) to evaluate the measurement model. The Cronbach Alpha (alpha > 0.70) and Composite Reliability (CR > 0.70) were used to measure internal consistency. Average Variance Extracted, AVE > 0.50 was used to test convergent validity (Fornell and Larcker, 1981). The Fornell-Larcker criterion was used to assess discriminant validity whereby the square root of the AVE of each construct should be greater than the correlations of that construct with all other constructs in the model.

Third, Maximum Likelihood Estimation in SEM was used to estimate the fully specified structural model. This method allowed simultaneous estimation of all the direct paths (H1-H6), two indirect mediation paths, and two moderation interaction terms. Mean-centering of all predictor and moderator variables was done before the computation of product terms to compute the moderation analysis. It involved the structural model that contained control variables (B5, ZEXP, ZPLAT) forecasting the two main outcome variables (Y1 and Y2). The overall model fit was tested against the standard parameters: Comparative Fit Index (CFI) 0.95 or more, Tucker-Lewis Index (TLI) 0.95 or more, Root Mean Square Error of Approximation (RMSEA) 0.08 or less, and Standardized Root Mean Square Residual (SRMR) 0.08 or less.

Fourth, non-parametric bootstrapping (resamples=5,000) was used to test mediation hypotheses to obtain bias-corrected 95% confidence intervals of the indirect effects. A mediation pattern was considered to be consistent with full mediation when the indirect effect was significant and the direct path that followed the mediator was not significant after controlling the mediator (Zhao et al., 2010). All the endogenous constructs are reported to have variance explained (R^2).

Note on single item construct: Single item use of Media Literacy was done due to parsimony and was explained as a control predictor of Media Literacy and not a central theoretical construct and consequently the single item use of Media Literacy was not estimated by latent reliability. Multi-item validated media literacy scales should be used in future research.

5. Results

5.1. Descriptive Statistics and Reliability

All multi-item constructs showed good to excellent reliability as shown in Table 2 with Cronbach's Alpha values of between 0.84 (Platform Inclusivity) and 0.93 (Behavioral Intent), all of which are above the 0.70 mark. The largest mean exposure of respondents was to Agentic Framing (M = 3.84, SD = 1.05) and Media Literacy (M = 3.92, SD = 0.85). General Credibility was mentioned as medium (M = 3.12, SD = 0.98). These descriptive statistics ensure sufficient variance between constructs to use them in structural estimation.

Table 2: Construct Descriptive Statistics and Reliability

Construct	Symbol	Items	Mean	SD	Cronbach's α
Agentic Framing Exposure	XA	5	3.84	1.05	0.91
Communal Framing Exposure	XC	5	3.45	1.12	0.89
General Credibility	M	5	3.12	0.98	0.90
Traditional Gender Role Beliefs	MOD	5	3.01	1.01	0.85
Behavioral Intent	Y1	4	3.78	1.09	0.93
Counter-Narrative Agency	Y2	5	3.52	1.04	0.92
Stereotype Exposure	ZEXP	4	3.30	1.15	0.88
Platform Inclusivity	ZPLAT	4	3.65	0.95	0.84
Media Literacy	B5	1	3.92	0.85	N/A

5.2. Confirmatory Factor Analysis, Convergent Validity, and Discriminant Validity

The full measurement model demonstrated excellent fit to the data: $\chi^2(df = 498) = 750.01$, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.033 (90% CI: 0.028–0.038), SRMR = 0.028. All factor loadings were statistically significant ($p < .001$) and exceeded the 0.70 threshold, confirming convergent validity. As summarized in Table 3, AVE values exceeded 0.50 for all constructs and CR values exceeded 0.70, further supporting convergent validity (Fornell & Larcker, 1981).

Table 3: Confirmatory Factor Analysis Results and Convergent Validity

Construct	Item	Standardized Factor Loading (λ)	Composite Reliability (CR)	AVE
Agentic Framing Exposure (XA)	XA1–XA5	0.76–0.90	0.92	0.69
Communal Framing Exposure (XC)	XC1–XC5	0.72–0.88	0.90	0.65
General Credibility (M)	M1–M5	0.74–0.85	0.89	0.61
Traditional Gender Role Beliefs (MOD)	MOD1–MOD5	0.70–0.82	0.87	0.58
Behavioral Intent (Y1)	Y11–Y14	0.80–0.91	0.94	0.80
Counter-Narrative Agency (Y2)	Y21–Y25	0.75–0.89	0.93	0.71
Stereotype Exposure (ZEXP)	ZEXP1–ZEXP4	0.71–0.84	0.87	0.63
Platform Inclusivity (ZPLAT)	ZPLAT1–ZPLAT4	0.70–0.80	0.86	0.57

The Fornell-Larcker criterion was used to determine discriminant validity. The inter-construct correlation matrix is provided in Table 4. with square root of AVE of each construct on the diagonal. The diagonal value (√AVE) in both instances was greater than the inter-construct correlations (off-diagonal values) indicating that both constructs explain more variance when using their indicators rather than any of the other constructs within the model. The largest inter-construct correlation was observed between Behavioral Intent (Y1) and General Credibility (M) at r = 0.56 which was lower than the 0.894 √AVE of Y1, and the Fornell-Larcker criterion was met.

Table 4: Discriminant Validity — Fornell–Larcker Criterion (Diagonal = √AVE; Off-Diagonal = Inter-Construct Correlations)

Construct	XA	XC	M	MOD	Y1	Y2	ZEXP	ZPLAT
XA	0.831							
XC	0.42	0.806						
M	0.48	0.39	0.781					
MOD	0.31	0.28	0.25	0.762				
Y1	0.35	0.29	0.56	0.22	0.894			
Y2	0.28	0.33	0.51	0.19	0.44	0.843		
ZEXP	0.21	0.24	0.18	0.30	0.15	0.22	0.794	
ZPLAT	0.18	0.26	0.30	0.14	0.38	0.45	0.20	0.755

5.3. Structural Equation Modeling: Overall Model Fit and Explained Variance

After effective validation of the measurement model, the entire hypothesized structural model was estimated by use of Maximum Likelihood Estimation with n = 500. The structural model demonstrated excellent fit: $\chi^2(df = 521) = 778.32$, $p < .001$, CFI = 0.97, TLI = 0.96, RMSEA = 0.031 (90% CI: 0.026–0.036), SRMR = 0.031. All these fit indices meet all preset criteria, confirming the further interpretation of special path coefficients.

The structural model as shown in Table 6 explained a significant amount of variance in the endogenous constructs. The General Credibility ($R^2 = 0.38$), Behavioral Intent ($R^2 = 0.44$), and Counter-Narrative Agency ($R^2 = 0.52$) variance was explained by the model at 38, 44 and 52 percent respectively. These R^2 values suggest a moderate to a strong explanatory power, which is in line with the complexity of the proposed process model.

Table 5: Explained Variance (R^2) for Endogenous Constructs

Endogenous Construct	R^2	Interpretation
General Credibility (M)	0.38	Moderate
Behavioral Intent (Y1)	0.44	Moderate-High
Counter-Narrative Agency (Y2)	0.52	Substantial

5.4. Hypothesis Testing and Path Coefficients

The findings of the SEM, which are summarized in Table 5. allow giving a strong support to the mediating role of General Credibility.

H1 and H2 (Framing → Credibility): The two types of framing were both important positive predictors of credibility. A significant positive relationship was found between Agentic Framing Exposure (XA → M) with a positive association ($\beta = 0.30$, $p < .001$) whereas Communal Framing Exposure (XC → M) exhibited a positive, though weaker, relationship ($\beta = 0.19$, $p < .001$). Both H1 and H2 were significantly supported.

H3 and H4 (Credibility → Outcomes): General Credibility has proven to be the strongest predictor in the model. It showed a strong positive correlation with Behavioral Intent (Y1: $\beta = 0.42$, $p < .001$) and a strong positive correlation with Counter-Narrative Agency (Y2: $\beta = 0.35$, $p < .001$). Both H3 and H4 were strongly supported.

H5 and H6 (Individual and Environmental Predictors): Behavioral Intent showed significant positive correlation with Media Literacy (B5) ($\beta = 0.18$, $p < .001$) which validated H5. H6 was supported by Platform Inclusivity (ZPLAT) as the best predictor of Counter-Narrative Agency ($\beta = 0.35$, $p < .001$). Stereotype Exposure (ZEXP) became an important negative predictor of Counter-Narrative Agency ($\beta = -0.25$, $p = .001$), which suggests that stereotypical content prevalence is an active deterrent to users trusting to challenge harmful narratives.

Direct Effects and Moderation: The direct effects of Agentic Framing on Behavioral Intent ($\beta = 0.05$, $p = .250$) and Communal Framing on Counter-Narrative Agency ($\beta = 0.03$, $p = .480$) did not differ significantly when mediated by the mediator. The two interaction terms that tested moderation by Traditional Gender Role Beliefs (MOD × XA → M: $\beta = 0.02$, $p = .600$; MOD × XC → M: $\beta = 0.04$, $p = .320$) were not statistically significant as well, which demonstrated that Traditional Gender Role Beliefs did not significantly change the relationship between message framing and credibility in this

Table 6: Standardized Path Coefficients and Hypothesis Testing Summary

Hypothesis	Path	Standardized β	p-value	Result
H1	Agentic Framing (XA) → Credibility (M)	0.30	<.001	Supported
H2	Communal Framing (XC) → Credibility (M)	0.19	<.001	Supported
H3	Credibility (M) → Behavioral Intent (Y1)	0.42	<.001	Supported
H4	Credibility (M) → Counter-Narrative Agency (Y2)	0.35	<.001	Supported
H5	Media Literacy (B5) → Behavioral Intent (Y1)	0.18	<.001	Supported
H6	Platform Inclusivity (ZPLAT) → Counter-Narrative Agency (Y2)	0.35	<.001	Supported
Direct Path	XA → Y1 (after mediation)	0.05	.250	Not Significant
Direct Path	XC → Y2 (after mediation)	0.03	.480	Not Significant

Moderation	MOD × XA → M	0.02	.600	Not Supported
Moderation	MOD × XC → M	0.04	.320	Not Supported

5.5. Mediation Analysis

To assess the stability and accuracy of mediation estimates, a non-parametric bootstrapping procedure with 5,000 resamples was applied, generating bias-corrected 95% confidence intervals for all indirect effects. This procedure is robust to non-normality in the distribution of indirect effects (Zhao et al., 2010).

The indirect effect of Agentic Framing on Behavioral Intent through General Credibility was statistically significant (β_indirect = 0.126, 95% CI [0.089, 0.168], p < .001). Since the corresponding direct path (XA → Y1) was non-significant (β = 0.05, p = .250), the pattern of results is consistent with full mediation through General Credibility.

Similarly, the indirect effect of Communal Framing on Counter-Narrative Agency through General Credibility was statistically significant (β_indirect = 0.063, 95% CI [0.021, 0.112], p = .001). With the corresponding direct path also non-significant (XC → Y2: β = 0.03, p = .480), this pattern is also consistent with full mediation. These results indicate that the effect of message framing on user outcomes is contingent upon the prior establishment of perceived message credibility, as theorized.

Note: The interpretation of these patterns as "consistent with full mediation" follows Zhao et al. (2010), who caution that causal inference about mediation requires experimental or longitudinal designs. The cross-sectional design of this study precludes definitive causal claims; these results reflect statistically consistent patterns rather than established causal sequences.

6. Discussion

This research adds to the emerging literature on gendered health communication in an online setting by developing and validating a theoretically informed structural framework in a Bangladeshi setting. Since the study uses the cross-sectional survey design, each of the directional paths is a statistically based association but not a given causal sequence; these constraints are expounded in Section 7. The results indicate that agentic and communal message framing are both significant predictors of perceived message credibility, and that the credibility completely mediates the relationships between the framing types and the two outcome measures behavioral intent and counter-narrative agency in a pattern that implies complete mediation (Zhao et al., 2010).

The pertinence of credibility as a mediating effect is consistent with the literature that has been produced by Hocevar et al. (2017), who have proven the defining role of perceived trustworthiness and expertise when it comes to interacting with online health messages. These results also align with Xu et al. (2021) who reach that credibility moderates the effects of message framing in online health communities and with the larger literature in digital communication that indicates that credibility indicators are paid more attention compared to message framing itself when users are evaluating online health information (Metzger and Flanagin, 2015; Li and Suh, 2015). This pattern, in the theoretical context of this paper, confirms the idea of Social Constructionism (Berger and Luckmann, 1966), according to which knowledge of health is not passively received: The Bangladeshi digital users do not unconditionally accept the gendered health messages but rather assess them with references to the credibility judgments that are embedded in their culture and reflect collective norms of valid sources of health knowledge.

In terms of Framing Theory (Entman, 1993), the results further expand - and somewhat confuse - the main points of the theory. Entman model stresses that frames influence interpretive consequences by selective salience but the current research study shows that this implication is completely mediated by credibility: frames do not directly lead to behavioral or agentic consequences but they influence them by initially changing credibility evaluations. This observation indicates that credibility is a requisite psychological condition, which has not been explicitly theorized in the original version of Entman, and is a significant addition to Framing Theory in the context of digital health. Future studies could be conducted to explore the possibility of this pattern of mediation being unique to health communication or general to other areas of Framing Theory.

The non-significant moderation effect of Traditional Gender Role Beliefs on the framing–credibility relationship merits careful theoretical consideration. The Gender Performativity Theory (Butler, 1990) would predict that people who had more traditional gender role would make a difference between gender-congruent and gender-incongruent health frames.

This lack of effect is inconsistent with previous evidence in South Asia - Hoque (2016) and Jafree and Sastry (2020) report large effect sizes between gender norms and health communication behavior in Bangladesh and South Asia - but is consistent with new evidence that online spaces are reconfiguring gendered health communication patterns (Lupton, 2022; Ahmed, 2025). The most likely one is the demographic makeup of the sample, which comprised mostly younger (69% 18-35 years old) and urban and relatively educated individuals, who may have been socialized in a setting in which egalitarian gender norms are becoming more apparent and socially esteemed. The issue of social desirability pressure in an environment where a self-reported online survey was conducted could have also contributed to the inhibition of the manifestation of traditional gender beliefs. This null result thus justifies the need to repeat this study in experimental designs and population stratified sampling that incorporates older, rural and less-educated respondents.

The positive correlation between media literacy and behavioral intent is theoretically aligned with and empirically justified by the research that digitally literate people are in a better position to critically evaluate, trust, and act upon health information (Srensen, 2024; Tamplin et al., 2018). The results herein highlight the policy relevance of media literacy education in Bangladesh, whereby digital health information use is on the rise but where digital literacy infrastructure still varies among population groups.

The finding that platform inclusivity is the best predictor of counter-narrative agency, more so than credibility, is the most policy-relevant result of the study. This is consistent with the digital health citizenship framework suggested by Vicari (2021) and with the findings of Vraga and Bode (2021) who found that the willingness to refute misinformation and user empowerment are linked to inclusive and participatory digital spaces. The discovery that an inclusive digital environment can facilitate counter-narrative agency, in the Bangladeshi context, where historically women have been stifled in health-related discourse due to gendered power relations (Faisal et al., 2022; Islam, 2024), implies platform design and governance directly influence gender health equity. These outcomes provide evidence that user empowerment will not only be achieved as a cognitive achievement but also as an environmental one, which is generated as part of safe, participatory digital architectures.

On the other hand, exposure to a stereotype was a notable negative predictor of counter-narrative agency, which was also consistent with Stienstra (2022) conclusion that the repetitive exposure to gendered images erodes the confidence needed to challenge hegemonic narratives. This effect of suppression underscores the structural paradox that faces Bangladeshi digital health users, in that the same digital spaces that offer a chance to create a counter-narrative agency, also maintain the exposure of stereotypes, where the emancipatory nature of platform inclusivity is directly canceled by such algorithmic reinforcement of traditional gender norms (Kontolatou, 2025).

7. Conclusions

The research question of this study was to determine the effects of gendered health message framing (agentic and communal frames) on the outcome of users of digital media in Bangladesh and perceived message credibility was identified to be the most important psychological process by which these effects take place. With n = 500, the study showed that both types of framing are significant predictors of credibility, and that credibility entirely mediates the relationships between framing and behavioral intent and framing and counter-narrative agency, in both the full mediation pattern. Media literacy positively forecasted behavioral intent, and platform inclusivity was the most influential predictor of counter-narrative agency and stereotype exposure was its most influential negative predictor. The gender role beliefs of traditional gender did not largely mediate the framing-credibility relationship, which might be due to the changes in generational or demographic factors in following gender norms among digitally active Bangladeshi communities. Theoretically, the findings contribute in three ways: they refine Framing Theory by showing the credibility as a mediating threshold that is implicit in the original formulation of Framing Theory; they extend Social Constructionism by showing that the social construction of health credibility happens dynamically in digital media spaces as shaped by gendered power relations; and apply to Gender Performativity Theory.

These results suggest that successful digital health communication in Bangladesh should focus on credibility of the source in the message construction, i.e., the transparency of authorship, institutional and expertise cues. Health communicators need to understand that the gendered framing of health messages themselves does not contribute to behavioral intention, but the judgments of credibility that the frames evoke. The behavioral intent and ability to disrupt detrimental gendered health narratives would be reinforced through investment in both inclusive digital platforms and in media literacy initiatives aimed at younger audiences in Bangladesh.

7.1. Limitations

There are a few limitations to this study. To begin with, the cross-sectional design does not allow making any causal conclusions; longitudinal or experimental designs are needed to determine the temporal and causal priority of framing, credibility, and results. Second, the purposive online strategy of sampling over-representing urban, younger and more educated Bangladeshi respondents' limits generalizability to rural and older populations where traditional gender norms in health communication might be functioning differently. Third, Media Literacy was measured using one self-reported measure, which is not an accurate measure of the construct; further research ought to utilize multi-item measures that have been used before. Fourth, the research was based on self-reported framing exposure measures, which can confound actual message properties and the attitudinal orientations of respondents; the content analysis of specific digital health-related messages would offer such an important methodological angle. Fifth, single-item construct in SEM is not typically advised; the approach of Media Literacy being a control variable alleviates but does not eradicate this issue. Sixth, the limitation of common method variance may be one of the constraints of the research based on self-report survey in spite of procedural controls such as the assurance of anonymity.

7.2. Future Research

Future studies can reduce these limitations by using experimental or longitudinal designs to determine causal sequences; using multi-group analysis across urban/rural, gender, age, and educational subgroups to determine the moderating influences that may not be seen in aggregate samples; using content analysis of Bangladeshi online health messages to objectively identify exposure to framing; and by developing contextually appropriate multi-item measurements of media literacy in the Bangladeshi context. The generalization and cross-cultural validity of the theoretical contributions to this model would be enhanced by applying this model to other South Asian and Global South settings as well.

7.3. Ethical Considerations

This study followed the accepted ethical principles of social science research involving human participants. Since the research was based on an anonymous online survey and did not collect any personally identifiable information, formal IRB approval was not considered necessary. The study involved minimal risk to participants, and careful attention was given to maintaining confidentiality, voluntary participation, and informed consent throughout the research process. Before participating, respondents were clearly informed about the purpose of the study, the nature of the questions, and their right to withdraw at any stage without any consequence. All responses remained anonymous and were used solely for academic purposes. Participants were also free to skip any question they considered sensitive or uncomfortable. In addition, the survey was distributed through transparent and non-coercive online recruitment practices, ensuring that the research was conducted responsibly and in accordance with established ethical standards for digital social science research.

Declarations

Author(s) Contributions

Farzana Nizam Prity contributed to the original draft preparation and the overall writing of the manuscript. Parboti Das was responsible for the conceptualization. Tamim Anowar contributed to writing, reviewing, editing, and supervising the study throughout the research process. Sapan Bepari conducted the data processing and statistical analysis. All authors reviewed and approved the final version of the manuscript.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Competing Interest

The authors declare no competing interests.

Data Availability Statement

The manuscript includes all data required to support the findings. All authors have read and approved the final version of the manuscript. The corresponding author had full access to all data in this study and takes complete responsibility for the integrity of the data and the accuracy of the data analysis.

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