ADDIS ABABA UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
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DEPARTMENT OF MARKETING MANAGEMENT

The effect of SBCC on the service delivery gap in maternal and child health within public health facilities in Gulele sub-city, Addis Ababa

A THESIS SUBMITTED TO THE DEPARTMENT OF MARKETING MANAGEMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE IN MARKETING MANAGEMENT

Prepared By:

Medhane Zekarias (ID No – GSD/0234/06)

Advisor:

Saleamlak Mola (Phd)

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ADDIS ABABA, ETHIOPIA

Addis Ababa University

College of Business and Economics

School of Commerce

Department of Marketing Management

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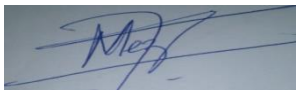
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I, the undersigned, declare that this thesis is my original work and has not been submitted for any other degree or qualification at this or any other institution. All sources of information used in this work have been duly acknowledged.

Name: Medhane Zekarias

Signature: 

Date: 07/08/2026

Declaration by the Advisor

I hereby certify that this thesis has been prepared under my supervision and is suitable for submission for examination.

Name: Saleamlak Molla (Phd)

Signature: _____

Date: _____

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Medhane Zekarias Gebre

Addis Ababa, Ethiopia

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List of Acronyms

ANC - Antenatal Care
CBHI - Community-Based Health Insurance
CHW - Community Health Worker
EDHS - Ethiopia Demographic and Health Survey
EDT - Expectancy-Disconfirmation Theory
ETB - Ethiopian Birr
FGD - Focus Group Discussion
HC - Health Center
HEW - Health Extension Worker
HSU - Health Service Utilization
IDI - In-Depth Interview
IEC - Information, Education, and Communication
IRB - Institutional Review Board
KII - Key Informant Interview
MCH - Maternal and Child Health
mHealth - Mobile Health
PBC - Perceived Behavioral Control
PHC - Primary Health Care
PI - Principal Investigator
PNC - Postnatal Care
SBCC - Social and Behavior Change Communication
SBA - Skilled Birth Attendance
SCT - Social Cognitive Theory
SD - Standard Deviation
SEM - Structural Equation Modeling
SERVQUAL - Service Quality Model (Parasuraman, Zeithaml & Berry)
TPB - Theory of Planned Behavior
WDA - Women's Development Army

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Abstract

Health communication, *"The Double-Edged Sword"*: How SBCC influences Maternal Health Service Gaps in Urban Ethiopia

Short Title: SBCC and Maternal Health Service Gaps

Authors: Medhane Zekarias, Saleamlak Molla (PhD)

Affiliation: Department of Marketing Management, School of Commerce. College of Business and Economics, Addis Ababa, Ethiopia.

Corresponding Author: Medhane Zekarias, Email: pinumed@gmail.com

Abstract

Background: The use of maternal and child health services remains a long-standing challenge in Ethiopia. Only 43% of women had four or more antenatal care visits, 50% had skilled birth attendance and 34% received postnatal care. Social and Behavior Change Communication (SBCC) interventions have been utilized as marketing-oriented strategies to combat demand-side barriers and improve health seeking behaviors. However, there is limited evidence on how SBCC influences the service delivery gap; the gap between client expectations and actual service perceptions, especially in urban public health settings.

Objective: This study examined the effect of Social and Behavior Change Communication (SBCC) on the service delivery gap in maternal and child health (MCH) services within public health facilities in Gulele Sub-City, Addis Ababa, Ethiopia.

Methods: A convergent parallel mixed methods cross-sectional design was employed. Quantitative data were collected from 160 clients of MCH through exit interviews using a modified SERVQUAL instrument measuring expectations, perceptions and gap scores across five dimensions (Tangibles, Reliability, Responsiveness, Assurance and Empathy). Qualitative data were collected through 12 in-depth interviews with mothers and 6 key informant interviews with health center managers and providers. Descriptive statistics, correlation analysis, simple and multiple linear regression, and thematic analysis were used to analyze the data. Seven hypotheses were tested using the integrated theoretical framework of Social Cognitive Theory, Theory of Planned Behavior, Expectancy-Disconfirmation Theory and SERVQUAL model.

Results: The expectations of the clients were consistently high for all the SERVQUAL dimensions (mean scores: 4.65 – 4.86) and perceptions were considerably low (mean scores: 2.56 – 2.97) resulting in substantial negative service quality gaps for all dimensions. The total gap index was –2.05 (SD = 0.35) with the largest gap of Reliability (–2.18), followed by Responsiveness (–

2.17) and Empathy (–2.09). The majority of respondents (96.9%) were in the high gap category. The exposure to SBCC was moderate (mean index = 3.38, SD = 0.68) and 91.9% of the respondents had moderate exposure levels. Satisfaction levels were low (26.9% satisfied; 64.4% neutral satisfied) and behavioral intentions were weak (PNC return: 19.4%; recommendation: 31.9%). Qualitative findings indicated that SBCC messages generated heightened expectations that the health system could not meet, resulting in negative disconfirmation, emotional distress and behavioral consequences including switching clinics and considering home delivery. Hypothesis testing showed that H_2 (negative gap across all SERVQUAL dimensions) was fully supported; H_1 (SBCC → expectations), H_6a (education → expectations and gap) and H_6b (income → expectations) were partially supported; and H_4 (gap → satisfaction), H_5 (gap → behavioral intentions) and H_7 (mediation effect) were not supported.

Conclusions: SBCC is effective in raising the awareness and expectations of MCH clients, but it inadvertently creates unrealistic expectations that the current service delivery system cannot meet, resulting in a large and multidimensional service quality gap. These "neutral" satisfaction ratings hide active dissatisfaction and quiet defection as clients switch facilities or contemplate home delivery. SBCC alone is not enough to close the gap in service delivery. There is a need for integrated interventions that address communication and service delivery capacity. Socio-demographic factors, particularly education, income and parity, have important impact on SBCC exposure, expectations and magnitude of service quality gaps.

Recommendations: SBCC messages should be consistent with actual service delivery capacity, include realistic disclaimers on service limitations and communicate real-time service availability. Health centers need to address the empathy gap by investing in client-centered training, grievance redressal systems, improving the reliability of the supply chain, and redesigning patient flow to minimize waiting times. A "promise-keeping" marketing approach should be adopted with SBCC combined with strengthening service delivery. Policy makers should invest in human resources to address gaps in responsiveness, proportionate budget allocation for service delivery in addition to SBCC and establish cross-sectoral quality improvement taskforces.

Keywords: Social and Behavior Change Communication (SBCC), Service Delivery Gap, Maternal and Child Health (MCH), SERVQUAL, Expectancy-Disconfirmation Theory, Client Expectations, Service Quality, Gulele Sub-City, Ethiopia.

1. Introductions

Maternal and child health service utilization remains an insistent challenge in Ethiopia with only 43% of women receiving the recommended four antenatal care visits, 50% skilled birth attendance, and 34% postnatal care (Hagos et al., 2025; Fekadu et al., 2024). In Addis Ababa, the capital of Ethiopia, urban setup, in Gulele Sub City, urban health extension programs struggle with

low community utilization due to access barriers, service quality shortfalls and unfulfilled client expectations (Giramy et al., 2019).

As a market orienting strategy to address demand side barriers, Social and Behavioral Change Communication SBCC is mentioned, one of the widely used methods. SBCC mainly used health extension workers, community health workers, women's development armies and mass media to improve MCH knowledge, attitudes, and behaviors (Lakew et al., 2025; Gebretsaik et al., 2025). Audience segmentation, tailored messaging, and the 4-Ps are the marketing principles interventions to position MCH services accessible and trustworthy options.

Nevertheless, a critical gap exists in understanding how SBCC affects client expectations and whether those expectations align with actual service delivery capacity. The service delivery gap, measured as the difference between client expectations (E) and perceptions (P), GAP = P-E is a well-established driver of dissatisfaction in healthcare. (Parasuraman et al., 1985; 1988). The SERVQUAL model assesses this gap across five dimensions: Tangibles (physical facilities), Reliability (consistent performance), Responsiveness (timely help), Assurance (competence and trust) and Empathy (personalized care).

Theoretical frameworks indicate that SBCC may unconsciously uplift client expectations outside what the health system can reliably deliver. Social Cognitive Theory (Bandura, 1986) theorizes that observational learning and outcome expectations shape health-seeking behavior. The Theory of Planned Behavior (Ajzen, 2000) suggests that attitudes, subjective norms, and perceived behavioral control determine behavioral intentions. Expectancy – Disconfirmation Theory (Oliver, 1980) further describe that satisfaction results from comparing perceived performance against prior expectations; when performance falls short of SBCC – shaped expectations, negative disconfirmation leads to dissatisfaction.

The study was guided by the following research questions:

1. How much did MCH clients in Gulele sub city public health centers recall SBCC messages, including frequency, channels and types?
2. What did clients expect from MCH services across quality aspects (Tangibles, Reliability, Responsiveness, Assurance and Empathy)?
3. What were the biggest gaps between client expectations and actual MCH service quality?
4. Did SBCC exposure raise clients' expectations for MCH service quality?
5. Did larger service quality gaps link to lower satisfaction and less intent to return for MCH services?

2. Methods

2.1. Study Design and Setting

This study employed a convergent parallel mixed – methods, cross sectional design. The study was conducted in Gulele sub city, one of the 11 sub cities in Addis Ababa, Ethiopia. Four public health centers were randomly selected: Maichew HC, Entoto Fana HC, Shiromeda HC, and Addisu Gebeya HC.

2.2. Participants and Sampling

Women of reproductive age (15-49) years who were current or potential users of MCH services are the target populations included in the study. The source population included women who had utilized MCH services at the selected HCs within three months prior to data collection (January- March, 2026). Gulele sub city health office, 2023 annual report indicated that approximately 4,500 – 5,200 women utilized MCH services monthly across these health facilities.

The quantitative component, sample size was calculated using G-power for a linear regression model with seven (7) predictors, assuming a small to medium effect size ($f^2 = 0.1$), $\alpha = 0.05$, and power = 0.80, yielding a required sample of 160 participants. Systematic random sampling was used to select clients during data collection.

The qualitative component, 12 IDIs were conducted with MCH clients selected purposively for maximum variation, and 6 KIIs were conducted with Health service providers (Medical Director, Nurses and Midwives).

2.3. Data Collection

Quantitative data were collected using a structured exit interview questionnaire consisting four sections:

(A) : Socio-demographic and reproductive characteristics,
(B) : SBCC exposure and recall (channels, frequency, message recall),
(C) : SERVQUAL expectations and perceptions (22 paired items across five dimensions on a 5- point Likert Scale) and,
(D) : Satisfaction and behavioral intentions.

Qualitative data were collected using semi – structured interview guides for clients (exploring SBCC influence, expectation formation, and gap experience) and health workers (exploring perceptions of client expectations, service delivery capacity and challenges). Interviews conducted in Amharic, note taken, transcribed verbatim and translated to English.

2.4. Data Analysis

Quantitative data were analyzed using STATA software. Descriptive statistics (frequencies, percentages, means, standard deviations) summarized participants characteristics. SBCC exposure, and SERVQUAL scores. Gap scores were calculated as P-E for each item and dimension. Multiple linear regression examined factors associated with SBCC index, expectation index and service quality gap index. Statistical significance was set at $p < 0.05$.

Qualitative data were analyzed using thematic analysis in Atlas.ti. themes were developed inductively and deductively based on the conceptual framework. Integration occurred at the interception stage using joint displays to compare quantitative and qualitative findings.

2.5. Ethical Considerations

Ethical approval was obtained from Institutional review board of AAU and Addis Ababa Health Bureau. Verbal informed consent was obtained from all study participants. Confidentiality was maintained using unique identification numbers. Participation was voluntary, with the right to withdraw any time.

3. Results

3.1. Participants Characteristics

In the quantitative survey, 160 respondents were participated. The mean age was 33.03 years (±5.97 SD). 56.9%, approximately more than half of the participants were currently married. Education levels varied: 37.5% had certificate/diploma, 30.0% secondary, 19.4% primary and 13.1% university degree. With regard to occupations 30.6% merchants, 21.9% government employees, 18.1% private company employees. Monthly income ranged from <1,500 ETB (7.5%) to >10,000 ETB (21.3%). Concerning reproductive history, 27.5% had three births, 25.0% had four births and 23.8% had two births. Majority of the study participants, (65.0%) were not pregnant during the survey. Only 40.6% had community-based health insurance (CBHI). Antenatal care, child illness treatment and family planning are the most common service types (35.0%), (29.4%), and (24.4%) respectively. 12 mothers (IDI) and 6 health workers (KII) were included in the qualitative study.

3.2. Research Question 1: SBCC messages recall, channels and frequency

Television (61.3%) and posters/leaflets (58.1%) were the most widely accessed channels, followed by radio (51.3%), social media (48.1%), and community health workers (45.6%). Regarding frequency, community health workers (71.2%), social media (77.9%), and women's groups (55.3%) were most commonly reported as frequent sources.

Family planning (22.8%) was the first messages most frequently recalled, followed by vaccination (21.3%), breastfeeding (18.6%), child nutrition (8.0%) and maternal nutrition (6.8%). Less frequently recalled messages included institutional delivery (4.9%), hygiene practices (3.4%) spousal support (1.9%) and cervical screening (1.5%).

The mean SBCC exposure index was 3.38 ± 0.68 (range 2-5). The majority of respondents (91.9%) were classified as having moderate SBCC exposure (index score 3-5), 8.1% had low exposure (index ≤2), and none had high exposure (index ≥6).

A mother from Maichew HC illustrated SBCC influence as follows*: "The HEWs informed us we would be greeted nicely and get all medicines for free. On radio, they often say, respectful care."* A mother from Addisu Gebeya added: *"I heard on Fana FM radio that at Addisu Gebeya HC they give delivery kits for free.* But when I asked, *the cashier said,' that campaign ended.' No one informed me before I came here."*

3.3. Research Question 2: Client expectations for MCH services

Study participants reported very high expectations across all SERVQUAL dimensions. Reliability had the highest expectation score (4.86 ± 0.24), followed by Tangibles (4.83 ± 0.30), Responsiveness (4.73 ± 0.35), Assurance (4.71 ± 0.33), and Empathy (4.65 ± 0.37). The overall expectation index was 4.75 ± 0.18.

Qualitative findings confirmed these high expectations. A mother from Shiromeda HC stated: *"On the clinic's own Facebook page, they wrote short waiting time for mothers."* A mother from maichew HC explained: *"I expected to wait maybe one hour. Today, I came at 7 AM, got seen at 1PM. No water, no seat. My back hurt so much. That was not what the poster at the clinic shows."*

3.4. Research Question 3: Largest gaps between expectations and perceptions

Perceptions scores were substantially lower than expectations across all dimensions. Tangibles had the highest perception score (2.97 ± 0.58), followed by Assurance (2.75 ± 0.44), while Responsiveness and Empathy had the lowest (both 2.56).

All gaps were negative, indicating that perceived service quality fell short of expectations. Reliability demonstrated the largest negative gap (-2.18 ± 0.51), followed by responsiveness (-2.17 ± 0.48) and Empathy (-2.09 ± 0.80). Tangibles had the smallest gap (-1.86 ± 0.57). The overall service quality gap was -2.05 ± 0.35, with 96.9% with 96.9% of respondents falling within the high gap category (gap index ≤ -1.5). None of the respondents had a low gap (> -0.5).

The qualitative findings substantiated these gaps. A mother from Maichew HC portrayed reliability failures: "*The midwife promised to give iron folic acid for three months. She gave me only 10 tablets.* When I asked, she said '*Go and buy.' That is the biggest miscommunication here*." A mother

from Entoto HC explained empathy failures: *"The nurse at the HC informed me at Entoto Fana HC they respect laboring mothers. But when I came in pain, the guard said, 'wait outside, it is lunchtime.' I felt so ashamed."*

A mother from Shiromeda HC indicated lack of privacy. *"They tell us on the street campaign, 'your health is secret.' But men walked into the consultation room while I was undressed. No knock. No curtain."*

3.5. Research Question 4: SBCC exposure and client expectations

The correlation between SBCC index and expectation index was positive but weak and marginally non - significant ($r = 0.1416$, $p = 0.074$). Multiple linear regression (Table 1) showed that education score was the only statistically significant predictor of expectation index ($B = 0.0409$, $p = 0.041$), describing that more educated participants of the study held higher expectations, even after controlling for age, income and total births. The overall model for expectation index was significant ($F(4,155) = 3.89$, $p=0.005$, adjusted $R^2=0.068$).

Table 1: Multiple Linear Regression Analysis of Factors Associated with Expectation Index (N=160)

Predictor	Coefficient (B)	Std. Error	t	p-value	95% CI
Age (years)	0.0018	0.0038	0.48	0.635	-0.0057, 0.0094
Education Score	0.0409	0.0198	2.06	0.041	0.0017, 0.0801
Income Score	0.0129	0.0121	1.07	0.284	-0.0109, 0.0368
Total Births	-0.0158	0.0191	-0.82	0.411	-0.0536, 0.0220
Constant	4.5799	0.1003	45.68	<0.001	4.3819, 4.7780

Model: $F(4,155)=3.89$, $p=0.005$, $R^2=0.091$, Adjusted $R^2=0.068$

The qualitative findings witnessed the mechanism behind this relationship. A health center manager from Entoto Fana HC reported the 'double-edge' effect. "SBCC has a double edge. On the positive side clients came informed, they know about danger signs, birth preparedness, and exclusive breastfeeding. That saves out time. The negative side is that they think all those beautiful posters and radio messages mean we have sufficient supplies. They say, '*But the radio said all health centers have free misoprostol.' We don't have that. Then they feel cheated, and we look like the bad guys."*

3.6. Research Question 5: Service quality gaps, satisfaction and behavioral intentions

In this study it was investigated that overall satisfaction was low: only 26.9% reported satisfaction, while 64.4% reported neutral satisfaction and 8.8* reported dissatisfaction. Behavioral intentions were weak: 31.9% were likely to recommend the facility, 36.3% were likely to return for ANC, and only 19.4% were likely to return for PNC services.

The bivariate correlations between the service quality gap index and client outcomes were weak and non-significant: gap index with overall satisfaction ($r = -0.0995$, $p = 0.211$), likelihood to recommend ($r = 0.0194$, $p = 0.808$), return for ANC ($r = -0.0249$, $p = 0.755$), and return for PNC ($r = -0.0278$, $p = 0.727$).

However, qualitative findings indicated that the *neutral* ratings concealed active dissatisfaction. A woman from Shiromeda HC stated: *"We women don't complain openly. We wait outside and whisper. If you complain, they put a note in your card saying 'difficult patient.' So, we just suffer quietly or leave."*

The study also revealed that behavioral consequences included clinic – switching and consideration of home delivery. A mother from Maichew HC stated: *"I cried after my last visit. I felt they see us as animals. Now, I only come if I am very sick. Another woman told me to go to Shiromeda HC instead, so I try there."* A mother from Addisu Gebeya HC added that, *"I feel powerless, last week I went to a private clinic instead. I borrowed money. I don't want to come here again unless I am bleeding heavily."*

More concerning, a mother expressed: "*If one more nurse tells me 'Women are too many' while I am in labor, I will give birth on the street. I already told my sister: deliver at home with a traditional birth attendant. That is safer than this shame.*"

Multiple linear regression (Table 2) showed that age ($B = -0.0160$, $p = 0.034$), education ($B = 0.0884$, $p = 0.024$), and total births ($B = 0.1100$, $p = 0.004$) were significant predictors of the service quality gap index. Older respondents experienced smaller negative gaps, while more educated women and those with more children experienced larger negative gaps.

Table 2: Multiple Linear Regression Analysis of Factors Associated with Service Quality Gap Index (N=160)

Predictor	Coefficient (B)	Std. Error	t	p-value	95% CI
Age (years)	-0.0160	0.0075	-2.14	0.034	-0.0308, -0.0012
Education Score	0.0884	0.0389	2.27	0.024	0.0116, 0.1652
Income Score	-0.0147	0.0236	-0.62	0.536	-0.0613, 0.0320

Total Births	0.1100	0.0375	2.94	0.004	0.0360, 0.1841
Constant	-1.9902	0.1965	-10.13	<0.001	-2.3784, -1.6019

Model: F (4,155) =3.06, p=0.019, R^2=0.073, Adjusted R^2=0.049

4. Discussion

In this study it was investigated how social and behavioral change communication SBCC, influence the service delivery gap in maternal and child health services within public health centers in Gulele sub city, Addis Ababa. The findings witness a severe and multidimensional service quality gap, with 96.9% of clients experiencing a high-level gap and only 26.9% reporting satisfaction. These results align with previous studies in Ethiopian healthcare settings that have documented substantial negative SERVQUAL gaps (Wasihun et al., 2024; Assefa et al., 2011).

4.1. SBCC successfully raises awareness but creates unrealistic expectations

The findings reported that SBCC exposure was predominantly moderate 91.9% of respondents) yet correlated only marginally with expectations (r = 0.1416, p = 0.074) indicates a complex relationship. While SBCC effectively raises awareness; evidenced by high recall of family planning, vaccination, and breastfeeding messages; it doesn't operate in isolation. Qualitative findings stated that word-of-mouth from other women, past negative experience and observed service failures moderate the influence of SBCC on expectations. This aligns with Social Cognitive Theory (Bandura, 1986), which posits that observational learning and outcome expectations shape behavior through multiple sources, not just formal communications.

The double-edged effect indicated by health workers; where SBCC raises expectations that the service delivery system cannot meet; is consistent with Expectation-Disconfirmation Theory (Oliver,1980). When performance falls short of SBCC – shaped expectations, negative disconfirmation leads to dissatisfaction, frustration and loss of trust. This finding has critical implications for health communication planning. SBCC without corresponding service capacity strengthening may be counterproductive and brand-damaging.

4.2. The service delivery gap is severe and multidimensional

The largest negative gap in Reliability (-2.18) states that clients cannot depend on health centers to deliver promised services consistently. Stock-outs of essential medicines (Magnesium sulfate, misoprostol, iron/folic acid) and vaccines (rotavirus) were the primary drivers, corroborating national evidence of supply chain failures in Ethiopia public health facilities (Fekadu et al., 2024; Tarekegn et al., 2025) the Responsiveness gap (-2.17), driven by extreme waiting times of 4-6

hours, reflects chronic understaffing; as one HC manager noted, *"We have three midwives where we need seven."*

The Empathy gap (-2.09) is mainly regarding given that closing gap requires no financial investment; only training, accountability and cultural change. Mothers stated disrespect, mockery, lack of privacy and dehumanizing interactions, often more emotionally damaging than supply shortages. This result aligns with Abebe and Phetoe (2022), who documented widespread disrespectful maternity care in Addis Ababa health centers.

4.3. The Neutral satisfaction rating disguises active dissatisfaction and defection

A surprising finding was that 64.4% of respondents reported Neutral satisfaction, yet qualitative data reported this as a measurement artifact rather than genuine contentment. Women suppressed complaints due to fear of retaliation (being labeled a 'difficult patient'), a circumstance previously documented in Ethiopian healthcare settings (Mirkuze, 2014). These silently dissatisfied clients engaged in clinic switching, used informal information networks to navigate unreliable services, and in extreme case, considered home delivery over facility - based care.

The weak and non-significant correlations between the service quality gap and satisfaction/behavioral intentions (all $p > 0.05$) may reflect that clients have already adjusted their expectations downward or disengaged emotionally from the public health "brand." This interpretation is supported by the qualitative finding that women plan visits "like a secret mission," comparing notes at church about which days vaccines are available or doctors are absent.

4.4. Socio – demographic factors influence SBCC exposure, expectations and gaps

Education occurred as a significant predictor of both expectations ($B = 0.0409$, $p = 0.041$) and gap scores ($B = 0.0884$, $p = 0.024$), showing that more educated clients are more discerning and experience greater disappointment when services fall short. This result has crucial implications for audience segmentation: SBCC interventions targeting educated urban women must be particularly careful to align messages with service reality, as this group has higher expectations and lower tolerance for service failures.

Total births significantly predicted larger negative gaps ($B = 0.1100$, $p = 0.004$), likely because multiparous women have more extensive service experience and thus higher cumulative expectations. Age was associated with smaller negative gaps ($B = -0.0160$, $p = 0.034$), suggesting that older women may have more realistic expectations or have developed coping strategies over time.

4.5. Implications for practice and policy

The findings have numerous critical implications. First, SBCC message design must incorporate honest caveats about service limitations. Rather than promising 'free medicines for all,' messages could state 'free medicines are available when supplies are in stock; call before you come to check availability.' This approach may lower expectations in the short term but will increase trust and satisfaction through positive disconfirmation.

Second, health centers should prioritize closing the Empathy gap as the most cost-effective intervention. Respectful maternity care training, confidential feedback mechanisms, and visible client bills of rights require minimal financial investment but can substantially improve client experience.

Third, the Addis Ababa Health Bureau must address chronic understaffing and supply chain failures. For every birr spent on SBCC promotion, a matching birr should be allocated to service delivery strengthening. Without this balance, SBCC will continue to create unfulfillable promises, eroding trust and driving defection to private service providers or prefer home delivery.

4.6. Limitations

This study has several limitations. The cross-sectional design captures associations, not causation. Recall bias may affect SBCC exposure reports. Social desirability bias may have influenced satisfaction ratings, despite qualitative findings suggesting suppression of negative feedback. The sample was limited to four health centers in one sub-city, limiting generalizability to other urban or rural settings. Causality cannot be inferred from the marginal relationship between SBCC exposure and expectations.

5. Conclusions

This study demonstrates that SBCC in Gulele Sub-City public health centers successfully raises awareness and shapes expectations but functions as a double-edged sword when service capacity lags behind communication. The service delivery gap is severe and multidimensional, with reliability failures, extreme waiting times, and empathy deficits being the primary drivers. The "neutral" satisfaction rating masks active dissatisfaction and silent defection. SBCC alone cannot bridge the service delivery gap.

From a marketing perspective, public health centers have successfully created brand awareness and communicated a value proposition but have failed to deliver on that value proposition. The path forward requires a fundamental shift from promotion-focused SBCC to integrated marketing that balances promise-making with promise-keeping. Only when SBCC messages reflect service reality will clients experience positive disconfirmation, satisfaction, and loyalty to public health

services. As one health center manager wisely noted, "Surprise is the enemy of satisfaction. Communication should prepare them for reality, not a dream."

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CHAPTER ONE: INTRODUCTION

1.1. Background

Maternal and child health (MCH) service utilization, was a persistent gap that Ethiopia faced with only 43% of women receiving for antenatal care visits, 50% skilled birth attendance, and 34% postnatal care as of recent surveys. In urban areas like Addis Ababa's Gulele Sub City, urban health extension programs skirmished with low community utilization due to access barriers and unmet needs. Unequal service deliveries continued across regions, driven by remoteness of the service facilities, insufficient financial readiness and cultural/traditional factors, hindering equitable MCH delivery in public health centers. (Girmay AM et al., 2019; Hagos A et al., 2025; Fekadu et al., 2024; Asebe H et al., 2025)

A marketing-oriented strategies were one of the pillars, a Social and Behavior Change Communication (SBCC) employed. This included health extension workers (HEWs), community health workers (CHWs), women's development armies, and target messaging to enhance MCH knowledge, attitudes, and behaviors like institutional deliveries. These interventions used channels like door-to - door campaigns, facilitated community conversation sessions to address demand side barriers, enhancing service uptake in Ethiopian contexts. (Lakew AG et al., 2025; Gebretsadik AM et al., 2025)

SBCC applied marketing principles to bridge service delivery gaps in maternal and child health by creating demand and promoting behaviors that brought in line with available health services in Gulele Sub-City facilities. Marketing in this context treated health services as "products" and used targeted strategies to influence uptake among urban challenges like exploited centers. SBCC clearly applied marketing strategies such as audience segmentation, modifying messages for diverse Gulele Sub City populations based on socio-economics, and the 4 Ps (Product: quality MCH care; Price: affordability; Place: accessible facilities; Promotion: via channels) to lift ANC visits and skilled deliveries. Empirical evidences from Ethiopian practices revealed that these approaches increased health facilities births to 71% and average ANC visits by reshaping norms. (Bekele et al., n.d.; Gebretsadik et al., 2025a)

In healthcare, the service delivery gap, measured as the difference between client expectations (E) and perceptions (P) via GAP = P – E, drove dissatisfaction. The SERVQUAL model by Parasuraman, Zeithaml, and Berry assessed this across five dimensions: Tangibles (physical facilities), Reliability (consistent performance), Responsiveness (timely help), Assurance (competence and trust), and Empathy (personalized care). Negative gaps, common in resource-limited public systems due to drug shortages, understaffing, and poor infrastructure, eroded trust, especially in Reliability and Responsiveness (Seth Nkrumah et al.; Arash Shahin; Fikadu Assefa et al.).

Studies applying the SERVQUAL framework in maternal and child health facilities have identified important weaknesses in service delivery. For example, prolonged waiting times were frequently associated with poor responsiveness, while ineffective communication and limited provider-client interaction affected perceptions of assurance and empathy. These findings demonstrate that service quality challenges extend beyond physical resources and operational efficiency. By examining clients' expectations alongside their actual experiences, the SERVQUAL approach provides valuable insights into areas requiring improvement and supports evidence-based interventions aimed at enhancing the quality of maternal and child health services (Wasihun et al.; Lu et al.; Fekadu et al.)

1.2. Statement of the Problem

Despite substantial investments in maternal and child health (MCH) services, important gaps in service utilization continue to be observed in Ethiopia. Evidence indicates that the uptake of antenatal care, skilled birth attendance, and postnatal care services remains below national targets in many settings. Previous studies suggest that these gaps are influenced not only by limitations within the health system but also by behavioral, social, and communication-related factors that affect care-seeking practices among women (Hagos et al., 2024; Hagos et al., 2025; Gebretsadik et al., 2025; Lakew et al., 2025).

Social and Behavior Change Communication (SBCC) interventions are intended to improve awareness, attitudes, and health-seeking behaviors related to MCH services. However, the effectiveness of these interventions depends largely on their ability to reach and engage intended audiences. In urban settings such as Gulele Sub-City, women may differ considerably in their socioeconomic status, information needs, and preferred communication channels. As a result, communication approaches that are not adequately tailored to these differences may have limited influence on message recall and behavior change (Lakew et al., 2025; Girmay et al., 2019).

Several studies have emphasized the importance of delivering clear and culturally appropriate messages through trusted communication channels, including community health workers, mass media, and community-based groups. Effective communication can strengthen understanding of maternal health risks, increase awareness of the benefits of antenatal care and institutional delivery, and encourage greater utilization of available services. Conversely, weak communication strategies may contribute to unrealistic expectations or poor understanding of available services, which can negatively affect client experiences and perceptions of service quality (Wasihun et al., 2022; Belay, 2025).

Consequently, strengthening SBCC interventions through improved audience targeting, context-specific messaging, and appropriate communication channels may help address barriers to service utilization and improve client satisfaction with maternal and child health services in Gulele Sub-City public health centers (Lakew et al., 2025; Fekadu et al., 2024).

1.3. Research Questions

The research was structured around one primary question and five supporting questions that explored the different components of the study.

1.3.1. General Research Question:

How did Social and Behavior Change Communication (SBCC) influence the Maternal and Child Health (MCH) service delivery gap within mothers utilizing public health centers in Gulele Sub-City, Addis Ababa?

1.3.2. Specific Research Questions:

1. How much did MCH clients in Gulele Sub-City public health centers recall SBCC messages, including frequency, channels, and types?
2. What did clients expect from MCH services across quality aspects (Appearance, Reliability, Responsiveness, Assurance, Empathy)?
3. What were the biggest gaps between client expectations and actual MCH service quality, and which areas were worst?
4. Did SBCC exposure raise clients' expectations for MCH service quality?
5. Did larger service quality gaps link to lower satisfaction and less intent to return for MCH services?

1.4. Objectives of the Study

The objectives directly operationalized the research questions into actionable aims for the investigation.

1.4.1. General Objective:

To examine how Social and Behavioral Change Communication (SBCC) influenced Maternal and Child Health (MCH) service delivery gaps in Gulele Sub City Public Health Centers by shaping client expectations, which in turn affected satisfaction and service utilization.

1.4.2. Specific Objectives:

1. To assess the level of recall of SBCC messages including frequency, channels and types on MCH among clients' in Gulele Sub City Public Health Centers.

2. To determine clients' expectations for MCH services across SERVQUAL dimensions (Appearance, Reliability, Responsiveness, Assurance, Empathy)
3. To identify the largest gaps between expectations and perceived MCH service quality, and pinpoint the worst performing dimensions.
4. To examine if SBCC exposure increased clients' expectations for MCH service quality.
5. To investigate the link between service quality gaps and clients' satisfaction and intent to continue using MCH services.

1.5. Significance of the Study

This study is expected to provide valuable insights for policymakers, health managers, healthcare providers, communities, and researchers working to improve maternal and child health (MCH) services and Social and Behavior Change Communication (SBCC) interventions in urban Ethiopia.

For Policymakers (Addis Ababa Health Bureau and the Federal Ministry of Health): The findings of this study may contribute to evidence-based decision-making related to maternal and child health service delivery and health communication programs. Specifically, the study will provide insights into the relationship between SBCC interventions, client expectations, and service quality within public health facilities. The results may inform the revision of national and city-level SBCC strategies by highlighting the importance of aligning communication efforts with the capacity of health facilities to deliver quality services. In addition, the findings may support more coordinated planning and resource allocation for both communication activities and health system strengthening initiatives, including human resources, medical supplies, and service delivery improvements.

For Health Center Managers and Healthcare Providers: The study may provide practical information on how clients perceive both SBCC activities and the quality of maternal and child health services. These findings can help health facilities identify areas requiring improvement in counseling approaches, interpersonal communication, and the use of information, education, and communication (IEC) materials. Furthermore, the study may help managers identify operational challenges such as long waiting times, shortages of essential medicines and supplies, and staffing constraints that influence client satisfaction and service utilization. Addressing these challenges could enhance the effectiveness of ongoing SBCC interventions and improve overall service quality.

For Communities (Mothers, Caregivers, and Families): Although participants may not receive direct material benefits from the study, the findings have the potential to contribute to improvements in the quality, accessibility, and responsiveness of maternal and child health services. By identifying factors that influence service utilization and client satisfaction, the study

may support interventions that better address the needs and expectations of mothers, caregivers, and their families.

For Academia and Researchers: This study will contribute to the growing body of evidence on health communication, service quality, and maternal and child health in urban Ethiopia. It will provide empirical evidence on how SBCC interventions influence client expectations and how these expectations relate to perceived service quality and service utilization. The mixed-methods approach employed in this study may also serve as a useful reference for future research. In addition, the findings may help identify areas for further investigation, including longitudinal assessments of SBCC effectiveness and studies examining the integration of communication interventions with broader health system strengthening efforts.

1.6. Scope and Delimitations of the Study

This section defined the borders of the research, expounding what was involved and what was not.

- **Geographic Scope:** The study was confined to public health centers located within the administrative boundaries of Gulele Sub-City, Addis Ababa. Private clinics, hospitals, and health posts were excluded to maintain focus on the primary public MCH service delivery points.
- **Content Scope:** The investigation focused specifically on MCH services, primarily antenatal care (ANC), delivery services, postnatal care (PNC), and child immunization. The SBCC interventions examined were those directly linked to promoting these services. Other health themes or services were external from the horizon of this study.
- **Population Scope:** The study targeted two distinct populations: Mothers or primary caregivers who had delivered a child at selected public health centers within the past 24 months and were residents of Gulele Sub City. Health care service providers (midwives, nurses, health officers) currently working in the MCH units of the selected health centers.
- **Temporal Scope:** This was a cross-sectional study, capturing a snapshot of the situation at the time of data collection. It did not follow trends over time.

Limitations: The study acknowledged the following inherent constraints:

- **Recall Bias:** Mothers might inaccurately recall the timing or content of past SBCC exposures or service utilization details.
- **Social Desirability Bias:** Both mothers and health workers might provide responses they perceived as socially acceptable or favorable to the health system.
- **Hawthorne Effect:** The presence of researchers might temporarily alter the normal behavior of health workers or the routine of the health center.

- **Generalizability:** Findings were specific to the urban context of Gulele Sub-City and might not be directly transferable to rural settings or other sub-cities with different demographics.

1.7. Operational Definitions

To ensure clarity and consistency, key terms were defined as they were used in the context of this study.

Social and Behavior Change Communication (SBCC): Referred to the systematic, theory-based process of using communication strategies (including but not limited to individual counseling, group health education, posters, brochures, and local media) to influence knowledge, attitudes, social norms, and individual and collective practices related to MCH. It was measured through audits of materials, provider reports, and client recall.

Service Delivery Gap: The arithmetic difference between a client's perceived service performance score and their service expectation score for each of the five SERVQUAL dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy), measured using a modified SERVQUAL instrument on a Likert-type scale.

Exposure to SBCC: For a mother/caregiver, this was defined as a composite measure derived from self-reported participation in at least one structured SBCC activity (e.g., TV ads, Radio ads, social media ads, ANC counseling session, health education talk) or confirmed recall of key messages from mass and social medias, IEC materials or a discussion about MCH with a Health Extension Worker (HEW) in the 12 months preceding the survey/interview.

MCH Units: The specific, designated sections or departments within the sampled public health centers that were responsible for providing the integrated package of maternal, newborn, and child health services. These typically included ANC clinics, delivery wards, PNC services, and immunization rooms.

CHAPTER TWO: LITERATURE REVIEW

2.1. Theoretical Literature

2.1.1. The SERVQUAL Model (Parasuraman, Zeithaml, & Berry, 1985; 1988)

The SERVQUAL model, developed by Parasuraman, Zeithaml, and Berry (1985; 1988), is one of the most widely used frameworks for assessing service quality. The model proposes that service quality is determined by the extent to which actual service performance meets or exceeds client expectations. According to this perspective, clients evaluate services by comparing what they expect to receive with what they actually experience during service delivery.

The model identifies five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy. Tangibles refer to the physical appearance of facilities, equipment, and personnel. Reliability reflects the ability of service providers to deliver services accurately and consistently. Responsiveness concerns the willingness of staff to provide timely assistance. Assurance relates to the competence and professionalism of service providers, while empathy refers to the degree of individualized care and attention provided to clients.

Within healthcare settings, SERVQUAL has been widely applied to assess patient experiences and identify areas requiring improvement. In maternal and child health services, the framework provides a useful approach for examining whether health facilities are meeting the expectations of mothers and caregivers.

In this study, the SERVQUAL model serves as the primary framework for measuring the service delivery gap. Expectations represent the standard against which services are evaluated, while perceptions represent clients' actual experiences during service utilization. The difference between these two measures provides an indication of the extent to which service delivery meets client expectations. Negative gap scores suggest that services fall short of expectations, whereas positive scores indicate that service performance exceeds expectations

2.1.2. Mechanism of Change: Social Cognitive Theory as Theoretical Framework

Social Cognitive Theory (SCT) provides a powerful and appropriate theoretical lens to examine the Effect of Social and Behavior Change Communication (SBCC) on the Service Delivery Gap in Maternal and Child Health (MCH) Public Health Centers. SCT is Developed by Albert Bandura, and it speculates that learning and behavior change arise in a triadic, active interaction between individual factors, environmental effects, and actions (Bandura, 1986). This interface is labeled mutual determinism. In the context of SBCC and MCH service delivery gaps, SCT supports clarify how communication strategies can impact both community health-seeking behaviors and health care workers performance by addressing key cognitive and social processes.

Three core constructs of SCT are particularly relevant for this study: Observational Learning, Self-Efficacy, and Outcome Expectations.(Bandura, A (1986))

2.1.2.1. *Observational Learning (Modelling)*

Observational learning, or modelling, is the method by which individuals obtain new behaviors and knowledge by seeing others. Bandura (1977) highlighted that people can learn not only through direct experience but also by inspecting the actions of others and the consequences of those actions. This is a cornerstone of many SBCC strategies. Bandura, A (1986)

Residents of Gulele Sub-City, especially pregnant women and mothers, frequently acquire information on MCH services by observing role models. These exemplars include frontline health workers, esteemed local figures, or peers who demonstrate successful engagement with care programs. SBCC strategies employ performances, firsthand accounts, and peer dialogues to showcase these beneficial practices. Likewise, health providers at public clinics learn enhanced procedures by observing and replicating the methods of experienced senior staff. This modeling mechanism is fundamental to SBCC's objective of boosting community understanding and reshaping attitudes, making advisable health actions both visible and aspirational.

2.1.2.2. *Self-Efficacy*

Self-efficacy is the vital inspirational thought in SCT, denoting to a personal credence in their own ability to establish and perform the courses of action essential to make given fulfilments (Bandura, A 1997). It is not about one's actual capabilities, but the confidence in what one can do with those skills.(Bandura, A (1986)

This concept is vital for considerate both sides of the service delivery gap.

- *Client-Side:* A pregnant mother's decision to search for trained birth attendance is heavily predisposed by her self-efficacy, her assurance in her ability to go to the health center, communicate with health care workers, search the system, and pay for the service. SBCC interventions aim to shape this efficacy through essential practices (e.g., role-playing clinic visits), verbal persuading (encouragement from HEWs), and managing emotional states (reducing fear of delivery).
- *Health care worker-Side:* The quality of service delivered is affected by the self-efficacy of nurses, midwives, and health officers. Their confidence in performing clinical trials, counseling mothers, or managing supplies affects their act. SBCC targeting health care workers (through supportive supervision or peer learning) can reinforce their professional efficacy. Low health care workers self-efficacy can reliably contribute to the service delivery gap, making this a key point of enquiry.

2.1.2.3. Outcome Expectations

Outcome expectations are the beliefs about the likely consequences of a given behavior. Bandura distinguished between physical (improved health), social (approval from family), and self-evaluative (feeling like a good mother) outcomes. Bandura, A (1986)

Peoples evaluate expected outcomes before acting. SBCC purposes to outline accurate and positive outcome hopes. If a community supposes the health center to deliver dutiful, high-quality care (a positive outcome expectation), utilization rises. On the contrary, if the main anticipation is long waits, unskilled health care workers, drug stock-outs, or impolite treatment (a negative outcome expectation), it creates a barrier, spreading the service gap. SBCC messages can highlight the concrete uses (healthy baby, safe delivery) and social rewards of using services, while also addressing and correcting negative feeling. Besides, environmental structuring - ensuring drug availability - is required to make positive outcome expectations trustworthy, linking communication directly to service delivery quality.

2.1.3. The Theory of Planned Behavior as a (TF)

A robust theoretical framework is indispensable for examining the instruments through which Social and Behavior Change Communication (SBCC) pursues to effect health outcomes. The Theory of Planned Behavior (TPB), developed by Icek Ajzen, provides an influential and prudent model for forecasting and understanding an individual's intent to make a specific behavior, which is the instant antecedent to real behavior change. For a study investigating SBCC's effect on connecting the service delivery gap in Maternal and Child Health (MCH), the TPB is extraordinarily suitable, as it interchanges beyond simple knowledge propagation to address the key psychosocial factors of health-seeking actions. (Ajzen, I. 2000)

According to the TPB, an individual's behavioral intent, their conscious plan and motivation to exert effort to perform a behavior, is the most direct factor of their action. This intention is shaped by three conceptually independent factors:

- *Attitudes:* This denotes to the degree to which a person has an approving or disapproving appraisal of the behavior in question. It includes beliefs about the likely outcomes of the behavior (behavioral beliefs) and the value involved to those outcomes. In the context of MCH, this interprets to questions such as: Do mothers believe that delivering in a health facility will lead to a safer birth for themselves and their baby? Do they value that safety?
- *Subjective Norms:* This factor incorporates the apparent social burden to perform or not perform the behavior. It is influenced by *normative beliefs* (what important referents, like a spouse, mother-in-law, or community leader, think one should do) and the motivation to comply with those referents. For instance, will a male spouse support institutional

delivery? Is there a community expectation to use antenatal care (ANC) services? SBCC repeatedly works to shift these standardizing perceptions at the community level.

- *Perceived Behavioral Control (PBC):* PBC reflects a personal perception of the ease or difficulty of performing the behavior. It is well-versed by *control beliefs* about the occurrence of aspects that may simplify or obstruct the behavior and the perceived power of these factors. This is unfavorably pertinent to service delivery gaps. PBC addresses real and operational barriers: Is the health center too far or too expensive? Are the health workers perceived as respectful? Do families feel they have the independence to make health decisions? High PBC not only reinforces intent but can also simplify real behavior directly when the perception brings into line with real control. (Ajzen, I., 2000)

It is perfectly applying to SBCC and MCH Service Gaps in Gulele Sub-City that, the TPB offers a precise lens through which to analyze the "demand-side" factors of the MCH service delivery gap that SBCC aims to address. This study theorizes that effective SBCC interventions function by strategically targeting these three core constructs:

- **SBCC to Shape Attitudes:** SBCC messages (via HEWs, CHWs, or media) can exact misunderstandings and reinforce constructive attitudes towards MCH services by highlighting their benefits; such as skilled birth attendance prevents complications, and addressing negative outcome expectations.
- **SBCC to Alter Subjective Norms:** Community-level SBCC actions, such as engaging religious and community leaders, facilitating spouse dialogue sessions, or using Women's Development Armies (WDAs), can reform subjective norms. By creation the use of ANC or institutional delivery a noticeable and permitted community standard, SBCC creates an environment of supportive social pressure.
- **SBCC to Enhance Perceived Behavioral Control:** Significantly, SBCC can reliably confront barriers by refining PBC. This includes providing applied information such as; birth planning, saving for transport, promoting for reverent care at facilities, and permitting women and families with the knowledge that they can effectively navigate the health system.

2.1.4. Expectancy-Disconfirmation Theory (EDT)

The Expectation Disconfirmation Theory (EDT) constitutes the principal theoretical framework within the domain of consumer satisfaction inquiry, offering a comprehensive psychological model to explain the formation of satisfaction judgments. Fundamentally, EDT theorizes satisfaction as the outcome of a cognitive comparative process. This model asserts that satisfaction is not a direct function of objective of product or service performance, but rather results from a subjective evaluative mechanism wherein perceived performance is assessed relative to a prior baseline, consumer expectations (Oliver, 1980).

The theory operates through four sequential constructs:

- **Expectations:** These are pre-consumption views about the plausible performance of a product or service. In the original design, expectations assist as a projecting standard (what *will* happen) or a normative standard (what *should* happen). They are formed based on prior experience, word-of-mouth, explicit promises, and implicit signals from the service provider.
- **Perceived Performance:** The consumer's subjective assessment of the actual service encounter's outcomes and processes. This is the post-consumption reality as interpreted by the client.
- **Disconfirmation:** The pivotal cognitive mechanism of the theory, and it the perceived difference between performance and expectations. It is not a simple arithmetic difference but a subjective judgment. Oliver defined three possible states: *Positive Disconfirmation*, perceived performance exceeds expectations, *Simple Confirmation* where perceived performance equals expectations and the third one is *Negative Disconfirmation* in which the perceived performance falls short of expectations.
- **Satisfaction:** The final affective (emotional) outcome resulting from the disconfirmation judgment. Positive disconfirmation leads to high satisfaction or even delight; confirmation leads to moderate satisfaction; negative disconfirmation leads to dissatisfaction.

The theory also posits that satisfaction directly influences subsequent behavioral intentions, such as repurchase, loyalty, and word-of-mouth recommendations. (Oliver, 1980).

2.1.4.1. Theoretical Application to the MCH Service Context

EDT is remarkably well-suited to the public health service setting, mainly for understanding the patient experience in MCH clinics.

- **Expectations as a Normative Benchmark**: In healthcare, where results are high-stakes, prospects often serve as a normative standard (what a patient believes *should* happen) rather than a simple anticipation. This is augmented in settings with SBCC, where communication campaigns explicitly or implicitly define standards of care (e.g., "You have a right to well-behaved maternity care"). These become influential standardizing benchmarks against which actual care is judged.
- **The Centrality of Disconfirmation:** The theory elucidates why two patients receiving objectively similar care can report massively dissimilar satisfaction levels. A patient with low anticipations may experience confirmation or even positive disconfirmation from basic care, leading to satisfaction. Contrariwise, a patient whose expectations have been elevated by effective SBCC may experience negative disconfirmation from the same level of care, resulting in dissatisfaction, frustration, and loss of trust. These apprehensions the core dilemma of this study: SBCC may accidentally set the stage for negative disconfirmation if service delivery does not keep pace.

- **Satisfaction as a Key Mediator of Behavior:** In MCH, satisfaction is not simple a "soft" outcome. EDT theorizes it as the critical link between service experience and future health-seeking behavior. A mother who experiences negative disconfirmation (a large service gap) and subsequent dissatisfaction is theoretically less likely to return for her next antenatal care visit, complete her immunization schedule, or choose a facility-based delivery, directly impacting critical health outcomes.

2.2. Empirical Literature

2.2.1. SBCC Interventions in MCH

Initiatives for Social and Behavior Change Communication (SBCC) have recurrently led to better health results for mothers and children. This has been seen clearly over rising figures of births in health facilities and more children getting vaccinations. These gains are made by activities that build community understanding, change perspectives, and enhanced the use of health services. A large and solid collection of proof from around the world and from Africa highlights the ability of SBCC approaches, which focus on communities, to lessen differences in who can reach services and how they are provided. This foundation of facts and experience provides a crucial structure for creating focused plans to tackle shortfalls in Maternal and Child Health services in specific local areas, such as Gulele Sub-City in Addis Ababa.

2.2.2. Global Evidence

In 76% of cases, SBCC interventions united with regular vaccination programs in low- and middle-income countries boosted MCH service outcomes, such as family planning, HIV care, and malaria prevention; in 90% of trials, these interventions had neutral or positive effects on immunization coverage. Common exercises that increased linked service usage without consistently lowering vaccination rates included co-location of services (65%) and the provision of additional information by immunization personnel (41%). Systematic reviews confirm that when it comes to shifting behaviors for child survival and MCH, plentiful SBCC channels achieve better than single approaches. (Shah and others, 2024a)

2.2.3. African Evidence

In Africa, 85% of reviewed integration studies happened on the continent, with SBCC-linked efforts enhancing facility delivery and immunization demand. A cluster-randomized trial in rural Ethiopia's Jimma Zone showed SBCC increased institutional childbirth rates from 52% to 71% ($P < .001$), ANC visits from 3.27 to 4.21 (effect size 0.50), knowledge scores from 5.68 to 7.70 (effect size 0.44), and attitudes from 37.49 to 39.73 (effect size 0.28), with ANC and attitudes as key predictors. Community-based SBCC in Ethiopia improved immunization awareness, attitudes, and practices, aligning with broader MCH gains. (Bayih et al., Gebreegziabher et al., 2022; Gebretsadik et al., 2025c; Girma et al., 2020; Shah et al., 2024a)

2.2.4. SBCC on Facility Delivery

Targeted SBCC via health extension workers, women's development armies, and religious/opinion leaders in Ethiopia raised institutional delivery by addressing cultural barriers and promoting ANC. Globally, behavior change interventions in sub-Saharan Africa, including SBCC, increased antenatal care and skilled birth attendance. Ethiopian studies link SBCC to higher facility delivery amongst tenacious gaps predisposed by education, wealth, and distance. (Gebregziabher et al., 2022; Gebretsadik et al., 2025c; Muriithi et al., 2024)

2.2.5. Exposure to SBCC and Health Outcomes

Social and Behavior Change Communication (SBCC) interventions have revealed promise in linking service delivery gaps in maternal and child health (MCH) by boosting knowledge, attitudes, and behaviors among communities in Ethiopia. Studies specifically link SBCC experience through channels like community health workers (CHWs), health extension workers (HEWs), and women's development armies (WDAs) to improved MCH outcomes, including increased antenatal care (ANC) visits and institutional deliveries. These findings provide a foundation for examining SBCC's role in public health centers in Gulele Sub-City, Addis Ababa.(Betemariam et al., 2017)

2.2.6. SBCC Channels and Mechanisms

SBCC channels in Ethiopia, such as HEWs and community dialogues, directly link exposure to outcomes by boosting awareness and motivation for MCH services. In Jimma, these channels generated statistically substantial advances in knowledge and ANC utilization, representing scalable community engagement.(Handebo et al., 2024b) Frontline actors' skills in implementation and monitoring were strongest, but evaluation padded, preventive continual impact on service gaps.(Gebretsadik et al., 2025e; Handebo et al., 2024b) Studies in Gulele Sub-City note urban health extension services' role in MCH, aligning with SBCC's potential to address local utilization barriers through targeted messaging.(Betemariam et al., 2017)

2.2.7. Implications for Gulele Sub City Context

SBCC exposure via integrated channels improves MCH knowledge and behaviors, dropping delivery gaps in Ethiopian public health centers, though health workers proficiencies necessitate solidification. Urban adaptations in Addis Ababa could leverage HEWs for Gulele-specific interventions.(Ethiopia Demographic and Health Survey, 2016)

2.2.8. Measurement of Service Delivery Gaps

Studies have measured maternal and child health (MCH) service delivery gaps, particularly utilization gaps, using inequality metrics and coverage rates derived from national surveys like Ethiopia's Demographic and Health Surveys (EDHS). These methods focus on variances between

expected and actual service uptake, often disaggregated by socioeconomic status, residence, or region. In Ethiopia's context, such approaches reveal persistent disparities in antenatal care (ANC), skilled birth attendance (SBA), and postnatal care (PNC).(Ethiopia Demographic and Health Survey, 2016; Hagos et al., 2025)

2.2.9. Facilitators and Barriers to SBCC

Social and Behavior Change Communication (SBCC) plays a critical part in addressing service delivery gaps in maternal and child health (MCH) in Ethiopia, particularly in urban settings like Gulele Sub-City, Addis Ababa. Previous researches mentioned mutual enablers such as health workers capacity building, and resource accessibility, together with barriers such as cultural factors and erratic communication. This literature review synthesizes evidence on these elements specific to public health centers.

2.2.10. SBCC in Ethiopian MCH Context

Frontline health workers, including health extension workers, implement most SBCC for MCH in Ethiopia, yet they often lack sufficient competencies in design, monitoring, and evaluation, contributing to service gaps. National strategies like the Health Sector Transformation Plan emphasize SBCC for community empowerment, but persistent low skills among health care workers hinder MCH uptake in areas like Addis Ababa. In urban sub-cities such as Gulele, service delivery gaps stem from uneven PHC capacity, including inadequate budget and workforce shortages that limit SBCC reach. (Alemu et al., 2025; Handebo et al., 2024b; Tarekegn et al., 2025)

2.2.11. Evidence from Addis Ababa and Gulele Sub City

In Addis Ababa public health centers, MCH gaps arise from inconvenient facilities, long waits, and low trust in modern care, undermining SBCC effectiveness. While Gulele-specific SBCC studies are limited, urban PHC challenges like uneven workforce distribution and quality deficits mirror national trends, affecting message continuity. Cultural appropriateness remains key, as religious and opinion leaders' involvement can bridge gaps but is often overlooked. (Agajie et al., 2021b; Alemu et al., 2025; Mengistu et al., 2025; Tarekegn et al., 2025)

2.3. Gaps in Literature:

Social and Behavior Change Communication (SBCC) interventions improve maternal health knowledge, attitudes, antenatal care utilization, and institutional delivery rates, but evidence specific to urban public health centers in Addis Ababa remains limited. Studies highlight persistent service delivery gaps in maternal and child health (MCH), particularly inequities among migrant populations and low utilization of skilled birth care despite free services. This literature review

synthesizes key findings on SBCC's role in MCH while identifying the niche for focused research in Gulele Sub-City.(Gebretsadik et al., 2025b; Mirkuzie, 2014a)

2.3.1. SBCC Effectiveness in Ethiopia

Targeted SBCC pointedly boosts MCH outcomes, as shown in a Jimma Zone cluster-randomized trial where intervention groups saw institutional childbirth rise from 52% to 71%, antenatal care visits increase from 3.27 to 4.21, knowledge scores improve from 5.68 to 7.70, and attitudes shift positively (effect sizes 0.18-0.50). These gains stem from community health workers, opinion and community leaders, and door-to-door campaigns encouraging institutional delivery amid rural barriers like distance and cultural norms. Similar reviews confirm SBCC enhances infant feeding practices nationwide, yet applications to urban MCH service gaps are underexplored.(Mirkuzie, 2014b)

2.3.2. MCH Service Gaps in Addis Ababa

Urban migrant women in Addis Ababa face stark inequities in skilled birth care (42% utilization) and postpartum services (33%), despite high antenatal care (71%) and immunization (88%) access, due to disrespect, distance, social influences, and low risk perception. Gulele Sub-City reports low facility delivery rates, with factors like maternal education and physical access enabling some uptake, but quality issues persist in public centers. Recent valuations note poor service quality and utilization in Addis Ababa facilities, aggravating gaps despite fee exemptions. (Gebretsadik et al., 2025b; Mirkuzie, 2014a; Negash & Haile, 2024a; Temesgen & Netangaheni, 2024, 2025)

2.3.3. Evidence from Gulele and Urban Contexts

Qualitative data from Gulele's migrant communities reveal home births prevail due to perceived contempt and structural barriers, even with nearby centers like Addis Hiwot offering free care. No studies directly link SBCC to bridging these urban public center gaps; rural-focused trials dominate, overlooking Addis Ababa's migrant-heavy, heterogeneous settings. Broader scoping reviews confirm Ethiopia-wide MCH research shortages in urban locales.(Gebretsadik et al., 2025b; Mirkuzie, 2014a; Negash & Haile, 2024b)

2.3.4. Identified Literature Gaps

Few studies examine SBCC's impact on MCH service delivery gaps in urban public health centers, with none specific to Gulele Sub-City, Addis Ababa. Existing work emphasizes rural SBCC successes or general Addis Ababa inequities among migrants, ignoring targeted interventions for urban behavior change amid free services. This study fills the niche by evaluating SBCC's role in reducing Gulele's facility-specific gaps, addressing urban migrants' unique barriers like contempt and social norms(Gebretsadik et al., 2025b; Mirkuzie, 2014a; Negash & Haile, 2024a; Temesgen & Netangaheni, 2025)

2.4. Conceptual Framework

This study is guided by an integrated conceptual framework that maps the causal pathway from Social and Behavior Change Communication (SBCC) interventions to critical health system outcomes, with the SERVQUAL based service delivery gap as the central mechanism. The framework theorizes that SBCC exposure acts as the primary independent variable that shapes client expectations through theoretical mechanisms of Social Cognitive Theory (observational learning and outcome expectations) and the Theory of Planned Behavior (attitudes and subjective norms). These elevated expectations, measured across the five SERVQUAL dimensions (Tangibles, Reliability, Responsiveness, Assurance, and Empathy), establish the normative standard against which actual service delivery is mediated. The core of the framework is the Service Delivery Gap, operationalized as the arithmetic difference between perceived performance (P) and expectations (E) for each SERVQUAL dimension (GAP = P - E). This gap is hypothesized to be moderated by client characteristics (e.g., parity, education) and clinic-level factors (e.g., resource availability, staffing), which influence both the formation of expectations and the actual service delivery experience.

The framework concludes by applying Expectancy-Disconfirmation Theory to explain the consequences of this gap. It proposes that the magnitude and direction of the SERVQUAL gap directly determine client satisfaction and future behavioral intentions. Specifically, negative gaps (where performance falls short of SBCC-shaped expectations) are theorized to decrease satisfaction and reduce intentions for continued MCH service utilization, such as completing antenatal care visits or opting for facility-based delivery. Thus, the framework presents a complete chain: SBCC → Expectations → SERVQUAL Gap → Satisfaction/Utilization Intentions. This conceptualization allows the study to investigate not only whether a gap exists but how communication contributes to its formation and what its practical implications are for maternal and child health outcomes in Gulele Sub-City, providing a diagnostic tool for aligning communication strategies with health system strengthening efforts.

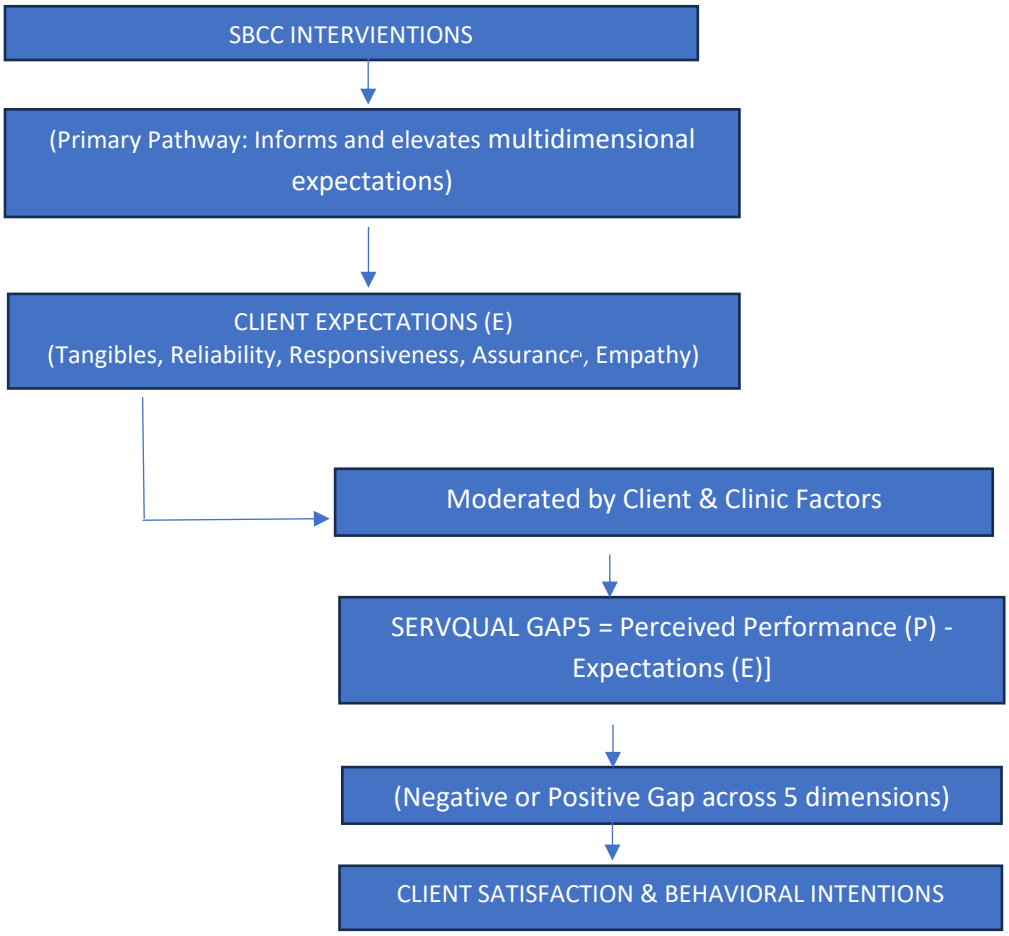


Figure 1: Conceptual Framework

Source: Developed by the researcher based on the SERVQUAL model of Parasuraman, Zeithaml, and Berry (1988) and related literature.

2.5. Hypotheses of the Study

Based on the conceptual framework (Figure 1) and the theoretical underpinnings of Social Cognitive Theory (Bandura, 1986), the Theory of Planned Behavior (Ajzen, 2000), Expectancy-Disconfirmation Theory (Oliver, 1980), and the SERVQUAL model (Parasuraman et al., 1988), the following research hypotheses were formulated to guide the quantitative investigation:

2.5.1. Hypotheses on SBCC Exposure and Expectations

H_1: There is a statistically significant positive relationship between a client's exposure to SBCC and their baseline expectations for maternal and child health (MCH) service quality.

- **H_1a**: Higher exposure to SBCC is directly associated with elevated expectations regarding the Tangibles dimension (physical infrastructure and facility appearance).
- **H_1b**: Higher exposure to SBCC is directly associated with elevated expectations regarding the Reliability dimension (accuracy and consistency of care).
- **H_1c**: Higher exposure to SBCC is directly associated with elevated expectations regarding the Responsiveness dimension (timeliness and readiness to assist).
- **H_1d**: Higher exposure to SBCC is directly associated with elevated expectations regarding the Assurance dimension (provider competence, trust, and safety).
- **H_1e**: Higher exposure to SBCC is directly associated with elevated expectations regarding the Empathy dimension (individualized, respectful, and compassionate care).

2.5.2. Hypotheses on the Service Delivery Gap

H_2: MCH clients in Gulele Sub-City public health centers experience a statistically significant negative service quality gap, meaning actual perceived performance systematically falls short of prior expectations across all five SERVQUAL dimensions.

- **H_2a**: The negative service quality gap is disproportionately more pronounced in the Reliability dimension compared to all other SERVQUAL dimensions.
- **H_2b**: The negative service quality gap is disproportionately more pronounced in the Responsiveness dimension compared to all other SERVQUAL dimensions.

2.5.3. Hypotheses on SBCC and the Service Delivery Gap

H_3: Increased exposure to SBCC interventions paradoxically correlates with a wider, more severe negative service quality gap, as communication campaigns elevate expectations to a level that the existing local health system cannot reliably fulfill.

2.5.4. Hypotheses on the Service Delivery Gap and Client Outcomes

H_4: A wider negative service quality gap directly correlates with lower overall client satisfaction scores.

H_5: A wider negative service quality gap significantly degrades a client's future behavioral intentions.

- **H_5a**: Larger negative service quality gaps dramatically lower the likelihood of a client recommending the public health facility to family or community members.
- **H_5b**: Larger negative service quality gaps significantly reduce a mother's likelihood of returning to the facility for future antenatal care (ANC) services.
- **H_5c**: Larger negative service quality gaps significantly reduce a mother's likelihood of returning to the facility for essential postnatal care (PNC) services.

2.5.5. Hypotheses on Moderating Factors (Socio-Demographic)

H_6: The baseline relationship between SBCC exposure and client expectations is actively moderated by individual socio-demographic characteristics.

H_6a: Clients with higher educational attainment hold substantially higher care expectations and consequently report wider negative service quality gaps than those with lower education levels.

H_6b: Clients from higher-income households maintain elevated service expectations, leading to wider reported negative service quality gaps when compared to lower-income peers.

H_6c: Multiparous clients (those with higher birth counts) experience larger negative service quality gaps due to cumulative experiences with health facilities.

H_6d: Older clients display smaller negative service quality gaps than younger clients, driven by more pragmatic expectations developed over time.

2.5.6. Hypothesis on Mediating Effect

H_7: The final impact of SBCC exposure on client satisfaction is fully mediated by the service quality gap. Specifically, SBCC drives up expectations, which triggers a sharper negative disconfirmation (a wider gap) when facilities underperform, ultimately suppressing overall client satisfaction and future utilization intentions.

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter provided an all-inclusive portrayal of the methodology that was used to examine the effect of Social and Behavior Change Communication (SBCC) on the service delivery gap in MCH public health centers in Gulele Sub-City, Addis Ababa. It detailed the research design, setting, population, sampling strategies, and subsequent chapters covered data collection methods, variables, analysis plans, and ethical considerations.

3.1. Research Design and Approach

This study employed a convergent parallel mixed-methods, cross-sectional design to comprehensively understand how SBCC influenced MCH service gaps by integrating quantitative and qualitative data.

3.1.1. Mixed Methods Rational

Quantitative analysis quantified associations such as: SBCC exposure → expectations → SERVQUAL gaps → satisfaction/utilization, while qualitative data revealed contextual "Why" and "How" such as: mothers' perceptions of messaging effectiveness. Benefits included triangulation (validating stats with themes like disrespectful care explanations) and complementarity (qualitative elaboration of quantitative relationships).

3.1.2. Data Integration Process

Quantitative and qualitative data were collected concurrently but analyzed separately: surveys via regression/structural equation modeling (SEM) and interviews via thematic analysis. Results merged at interpretation via joint displays, correlating statistical paths (e.g., SBCC message recall predicting Responsiveness gaps) with qualitative quotes for comprehensive explanation and validation.

3.1.3. Quantitative Modeling

Cross-sectional surveys tested the causal chain via path analysis or SEM: SBCC exposure (independent) → expectations (mediator 1) → service gaps (mediator 2) → satisfaction/utilization (outcome), controlling for confounders (age, education, income) to mitigate causality threats.

3.1.4. Cross Sectional Justification

Efficient for current associations/hypotheses in Gulele Sub City Health Centers; confounders controlled analytically, though causality inferred cautiously.

3.2. Study Setting and Population

3.2.1. Study Setting

The study was conducted in Gulele Sub-City, one of the 11 sub-cities in Addis Ababa, Ethiopia. Gulele sub city was characterized by a mix of residential areas, commercial hubs, and social institutions. The sub-city was served by a network of public health centers, which were the primary units for delivering the Health Extension Program at the urban level and essential MCH services like antenatal care (ANC), delivery, postnatal care (PNC), immunization, and family planning. The choice of this setting was based on its urban context, where access to health facilities was assumed higher, making the determination of any service delivery gap a perilous topic to explore in relation to SBCC efforts.

3.2.2. Target Population

The target population for this study comprised all women of reproductive age (15 - 49 years) who were current or potential users of Maternal and Child Health (MCH) services at public health centers in Gulele Sub-City, Addis Ababa, Ethiopia. This included pregnant women, postpartum mothers (up to 24 months after delivery), and mothers/caregivers of children under five years attending for child health services.

3.2.3. Source Population

The source population was defined as all women who had utilized MCH services at (Mayichew HC, Entoto Fana HC, Shiromeda HC, and Addisu Gebeya HC) in Gulele Sub-City within the past three months (January- March, 2026). According to the Gulele Sub - City Health Office 2023 annual report, approximately 4,500-5,200 women utilized MCH services monthly across these facilities.

3.3. Sample Size Determination

3.3.1. Quantitative Component (Client Exit Interviews)

The primary analytical objective requiring the largest sample was to analyze the relationship between exposure to SBCC and the level of client expectations. This was a correlational analysis that required adequate power.

For the analysis (correlation/linear regression with multiple predictors), G - Power uses the F-test family. The formula for calculating the required sample size N is derived from the non - central F-distribution:

$$N = ((z_{(1-\alpha)} + z_{(1-\beta)})^2 / f^2) + u + 1$$

Where the terms specific to the parameters are broken down as follows:

Parameter in the text	Symbol in Formula	The Value
Significance level (α)	z1−αz1−α	**1.96** (for α = 0.05, two-tailed)
Power (1-β)	z1−βz1−β	**0.84** (for Power = 80%)
Effect size (small-mod)	f2f2	**0.1** (since I used $f^2 = 0.1$ to get n = 103)
Number of predictors	Uu	**7**

Table 1: sample size determination

3.3.2. Qualitative Component (IDIs and KIIs)

In-Depth Interviews (IDIs): For theoretical saturation of themes. The initial target was 12-15 MCH clients. They were selected purposely for maximum variation sampling (different age, parity, service type, SBCC exposure levels). Key Informant Interviews (KIIs): For comprehensive system perspective, the target of participants was 6-8. Selection was also purposive that MCH heads from all sampled health centers (3-4), plus 2-3 Health Centers Managers were included in the qualitative study.

3.4. Sampling Techniques

Stage 1: Health Center Selection

The method of selection was Random Sampling that all public health centers in Gulele Sub-City providing MCH services. Strata were not needed unless centers varied significantly by size/location. Randomly selected 4 health centers using lottery method or random number generator. It was to be expected that, the 4 centers provided diversity while remaining logistically feasible. This achieved geographic and service variation representation.

Stage 2: Client Selection Within Health Centers

The method of client selection was systematic random sampling with Time Intervals. The sampling frames were all MCH clients visiting the facility on selected days during data collection period. The sampling interval determined average daily client flow (e.g., if 40 clients/day, sample every 2nd or 3rd client).

Inclusion Criteria:

Women who were age 18+ years, women attending for MCH services (ANC, PNC, immunization, family planning), willing and able to provide informed consent, completed service encounter on day of interview were included in the study.

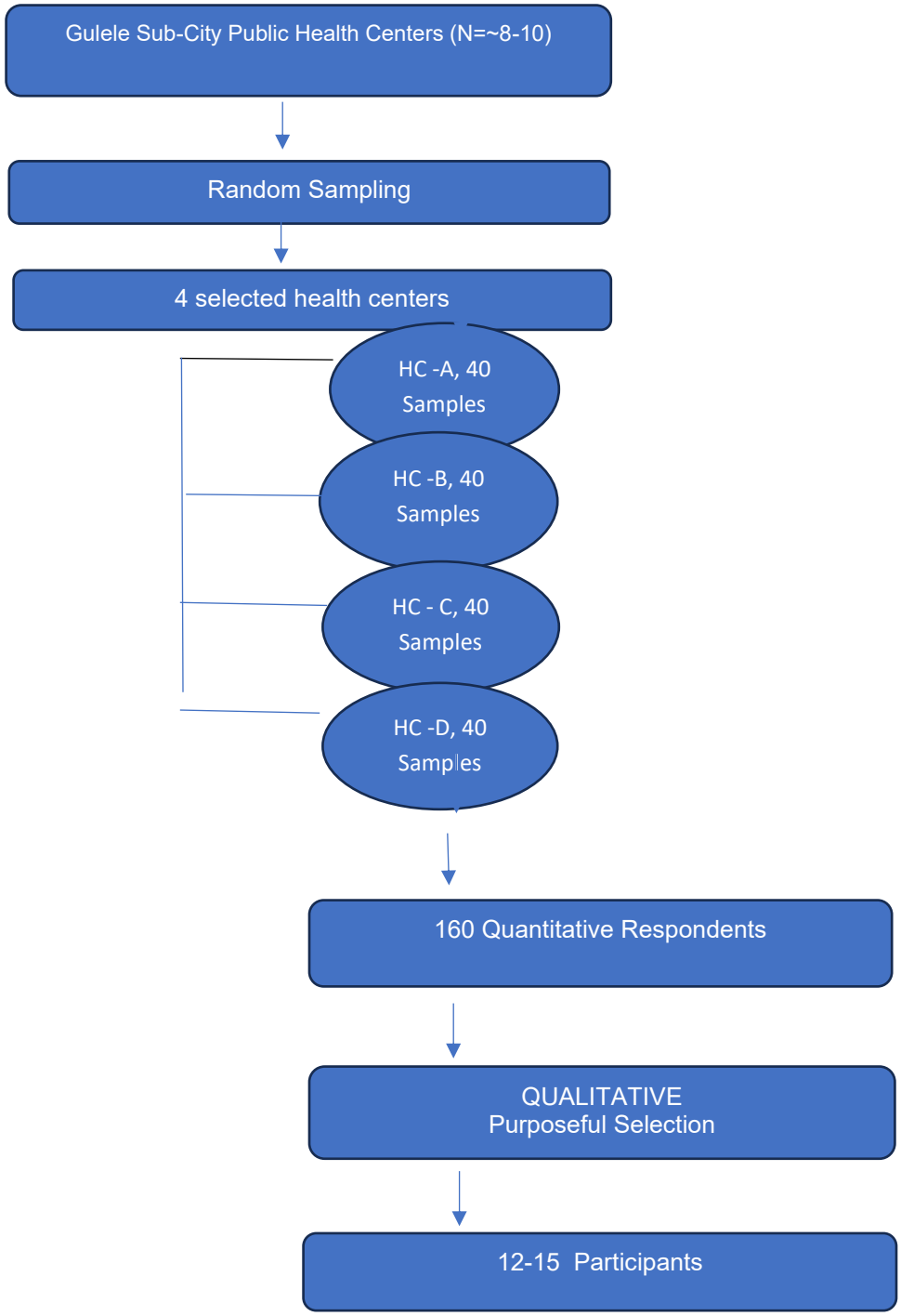
Exclusion Criteria:

Critically ill clients or emergencies, first-time visitors with no prior expectations formed, non-Amharic speakers without available translator were excluded in the study.

Stage 3: Qualitative Participant Selection

The Method of selection of study participants in the qualitative study was purposeful Sampling from Quantitative Sample. 12-15, IDI Participants were selected from the 160 quantitative respondents who had high SBCC exposure/High expectations with negative gap, low SBCC exposure/Low expectations with positive gap and mixed experiences across different SERVQUAL dimensions. The approach of interview was by recruiting them during exit interview for follow-up interview appointment. On the other hand, the KII Participants were selected purposely from all MCH heads from sampled centers plus relevant sub city health bureau heads. Purposive selection of all MCH heads from sampled centers plus relevant sub-city officials.

Figure:2: Sampling flow diagram



Total Estimated Sample: 160 quantitative + 15 qualitative = 175 total participants
This sampling design ensured methodological rigor, practical feasibility, and ethical considerations while providing adequate statistical power to address all research objectives.

3.5. Data Collection Plan and Instrumentation

Data were collected on April – May 2026. The data analysis and organization of report performed end of May and beginning of June 2026. Data collectors using multiple tools tailored to each research objective and study population. The process involved trained data collectors supervised by the principal investigator.

Table 2: Data Collection Matrix by Objective

Research Objective	Data Required	Quantitative Tool & Items	Qualitative Tool & Themes	Analysis Method
General Objective: To examine how Social and Behavioral Change Communication (SBCC) influences Maternal and Child Health (MCH) service delivery gaps in Gulele Sub City Public Health Centers by shaping client expectations, which in turn affect satisfaction and service utilization.	Integration of all specific objectives	All quantitative sections	All qualitative domains	Mixed-methods integration, Path analysis
Specific Objective 1: To assess the level of recall of SBCC messages including frequency, channels and types on MCH among clients' in Gulele Sub City Public Health Centers.	SBCC exposure channels, frequency, message recall, salience	Questionnaire Section B: B1. Exposure Channels B2. Frequency of Exposure B3. Unaided Message Recall (open) B4. Aided Message Recall/Salience	IDI Domain 1: SBCC sources and credibility Message interpretation Trust in information sources	Descriptive statistics (frequencies, percentages), Content analysis of recall, Thematic analysis
Specific Objective 2: To determine clients' expectations for MCH services across SERVQUAL dimensions (Appearance, Reliability, Responsiveness, Assurance, Empathy)	Client expectations for each SERVQUAL dimension (Tangibles, Reliability, Responsiveness, Assurance, Empathy)	Questionnaire Section C (Expectation items E_T1-E_E5): • 22 expectation statements (E_T1 to E_E5) • 5-point Likert scale	IDI Domain 1: Deep exploration of expectation formation. Prioritization of dimensions. Cultural influences on expectations	Mean scores per dimension, Ranking of dimensions, Comparative analysis across subgroups
Specific Objective 3: To identify the largest gaps between expectations and perceived MCH service quality, and pinpoint the worst performing dimensions.	Paired expectations and perceptions, Gap scores for each dimension	Questionnaire Section C (Paired items): • 22 expectation statements (E) • 22 perception	IDI Domain 2: • Narratives of specific gap experiences • Emotional impact of gaps • Coping mechanisms	Gap score calculation, Dimensional gap analysis, Identification of largest gaps, t-

		statements (P) • Gap = P - E for each item		tests for gap significance
Specific Objective 4: To examine if SBCC exposure increases clients' expectations for MCH service quality.	SBCC exposure scores + Expectation scores	Integrated from Sections B & C: • SBCC Composite Score (from B1-B4) • SERVQUAL Expectation Scores (from C)	IDI Domains 1 & 2 Integration: • How specific messages shaped specific expectations • Attribution of expectations to SBCC	Correlation analysis, Regression modeling, Controlling for demographics, Triangulation with qualitative insights
Specific Objective 5: To investigate the link between service quality gaps and clients' satisfaction and intent to continue using MCH services.	Gap scores + Satisfaction + Future intentions	Questionnaire Sections C & D: • Gap scores (P-E) • D1. Overall Satisfaction • D2. Likelihood to Recommend • D3. Continuity Intentions		

3.6. Data Quality Assurance

Robust measures were implemented throughout the research process to ensure validity, reliability, and trustworthiness. Tools were developed based on a comprehensive literature review and adapted to the local context. All tools were pre-tested on a small, similar population (5% of sample) outside the study area to check for clarity, flow, cultural appropriateness, and time required.

Enumerators and qualitative data collectors underwent a 2-days intensive training. Training covered:

- Research objectives and ethics (emphasizing confidentiality, voluntary participation).
- Detailed review of each data collection tool.
- Techniques for quantitative interviewing (neutral probing, skip patterns).
- Qualitative skills (active listening, note-taking, facilitating IDIs and KIIs, avoiding bias).
- Role-playing and mock interviews/IDIs and KIIs to ensure competency.

The PI and supervisors conducted daily field debriefings with data collectors to address challenges. Random spot-checks and back-checks (re-interviewing 5% of respondents on key questions via phone) were done to verify data accuracy and consistency.

With regard to qualitative data quality assurance, the data collectors conducted mock interview each other to internalize the tool. In addition to that, each qualitative data collectors sent the first interview audio to the PI to cross check consistency of the interview among data collectors. A transcription was conducted with professional transcribers to ensure harmony of the audio and the scripts. The PI randomly checked the audios with the transcripts.

Regarding to data management, all quantitative data were entered into COBO COLLECT software for validation to minimize entry errors. Qualitative audio recordings were transcribed verbatim and translated to English by experienced translators, with back-translation checks for accuracy.

3.7. Data Analysis Plan

We analyzed the data using a mixed-methods approach, combining numbers (quantitative) and stories (qualitative) to get a complete picture. Both types of data were collected at the same time, analyzed separately, and then combined to answer our research questions.

Table 3: Data Analysis Plan

Phase	Analysis Type	What We Did	How We Did It	Software/Tools
Quantitative Analysis	Descriptive Stats	Summarize SBCC exposure, expectations, gaps	Calculate percentages, averages, rankings	STATA
	Gap Calculation	Measure differences between expectations & experiences	Subtract expectation scores from experience scores	STATA
	Relationship Testing	Test SBCC → Expectations → Gaps → Satisfaction chain	Path analysis/Structural Equation Modeling	SEM, STATA
	Group Comparisons	Compare different types of women/clinics	Subgroup analysis, clustering techniques	STATA
Qualitative Analysis	Thematic Coding	Identify patterns in interview stories	Read transcripts, code for key themes, develop codebook	Atlas.ti
	Theme Development	Organize codes into main themes	Group related codes, identify patterns across interviews	Atlas.ti & Word
	Cross-Case Analysis	Compare different women's experiences	Look for variations, negative cases, saturation point	Atlas.ti
Mixed Methods Integration	Joint Display Creation	Combine numbers and stories side-by-side	Create tables comparing statistical and narrative findings	Word, Excel

	Triangulation	Check if numbers and stories agree	Compare statistical results with interview themes	Manual review
	Meta-Inference	Draw overall conclusions from both data types	Integrate findings into complete understanding	Manual synthesis

3.8. Ethical Considerations

The study obeyed to the highest international ethical standards for research involving human subjects. A formal written approval was sought from the Institutional Review Board (IRB) of Addis Ababa University and the Addis Ababa Health Bureau before commencing any data collection.

Participation was entirely voluntary that all participants (mothers and health workers), got informed consent. The purpose, procedures, risks, benefits, and right to withdraw at any time were explained in a language they understand (Amharic). Verbal informed consent was obtained.

Confidentiality & Anonymity, is the other issue that should be strictly applied during the data collection time. All data were kept strictly confidential. Questionnaires and transcripts used unique identification numbers instead of names. Audio recordings were stored on password-protected devices and destroyed after transcription. Published results contained no information that could identify individual participants or health centers.

The study aimed to benefit public health practice. To minimize risk, interviews/FGDs were held in private settings. Questions were phrased sensitively to avoid psychological distress. Participants were reminded they could skip any question or pause the interview. Health workers were assured that their responses would not be shared with their supervisors.

A summary of the key findings was shared with the Gulele Sub-City Health Office and participating health centers. The final thesis and any publications will contribute. To be fully consistent: contributed to the scientific understanding of SBCC and health systems strengthening.

CHAPTER FOUR: RESULTS

4.1. Results and Findings

4.1.1. Socio-Demographic Characteristics of Study Participants

Table 4: Socio-Demographic Characteristics of Study Participants (N=160)

Characteristics	Response	Freq.	Percent	Cum.
Facility name	Maichew Health Center	39	24.38	24.38
	Entoto Fana Health Center	38	23.75	48.12
	Shiro Meda Health Center	41	25.62	73.75
	Addisu Gebeya Health Center	42	26.25	100
Age	Mean (SD) age in years		33(6)	
Marital status	Never married	20	12.5	12.5
	Currently married/Living together	91	56.88	69.38
	Widowed	26	16.25	85.62
	Divorced/Separated	23	14.37	100
Education level	Primary school (Grades 1-8)	31	19.38	19.38
	Secondary school (Grades 9-12)	48	30	49.38
	Certificate/Diploma (College)	60	37.5	86.88
	University degree (Bachelor's or higher)	21	13.12	100
Occupation	Housewife/Home duties	18	11.25	11.25
	Merchant/Small business owner	49	30.63	41.88
	Government employee	35	21.88	63.75
	Private sector employee	29	18.12	81.88
	Daily laborer	13	8.12	90
	Student	16	10	100
Monthly income (ETB)	Less than 1,500 ETB	12	7.5	7.5
	1,501 - 3,000 ETB	21	13.12	20.62
	3,001 - 5,000 ETB	27	16.88	37.5
	5,001 - 7,500 ETB	28	17.5	55
	7,501 - 10,000 ETB	38	23.75	78.75
	More than 10,000 ETB	34	21.25	100

Covered health centers: 160 women were interviewed across the four public health centers in Gulele Sub-City. Addisu Gebeya Health Center 42 (26.3%), Shiro Meda 41 (25.6%), Maichew had 39 (24.4%), and Entoto Fana had 38 (23.8%).

Age: The average was 33 years which indicates that most were right in the middle of their reproductive years.

Marital status: A little over half, 57%, were married or living with a partner. But we also had a notable number of widowed women (16%) and divorced or separated women (14%). Only 12.5% had never been married.

Education levels: Education varied quite a bit. The biggest group (38%) had a college diploma or certificate. Another 30% had finished secondary school. About 19% had only primary education, and 13% held a university degree or higher. So most women had at least some formal education beyond primary school. the qualitative findings also proved this that as one manager from Shiromeda Health Center observed: "*The more educated the client, the more they demand privacy and respectful care. They compare us to private facilities they see on TV or visit themselves.*"

Occupation: In terms of jobs, merchants or small business owners made up the largest share at 31%. Government employees came next at 22%, then private sector workers at 18%. We also had housewives (11%), students (10%), and daily laborers (8%).

Household income: Nearly a quarter of the women (24%) earned between 7,501 and 10,000 Ethiopian Birr per month. Another 21% made over 10,000. At the lower end, 7.5% lived on less than 1,500 Birr monthly, and 13% earned between 1,501 and 3,000. So we had both low-income and middle-income households represented.

4.1.2. Reproductive and Service-Related Characteristics (N=160)

Table 5: Reproductive and Service-Related Characteristics (N=160)

Characteristic	Frequency (n)	Percentage (%)
Total Births		
0	16	10
1	5	3.1
2	38	23.8
3	44	27.5
4	40	25
5	17	10.6
Pregnancy Status		
Not pregnant	104	65
1-3 months	9	5.6
4-6 months	34	21.3
7-9 months	13	8.1
Youngest Child Age (n=144)		
Not applicable (not postnatal)	68	47.2
1-6 months	5	3.5
13-24 months	71	49.3
Has Health Insurance		
No	95	59.4
Yes	65	40.6
Service Type		
Antenatal Care (ANC)	56	35
Delivery/Postnatal Care (PNC)	5	3.1
Child Immunization	4	2.5
Child Illness Treatment	47	29.4

Family Planning	39	24.4
Other	9	5.6

In the aspect of reproductive history, a majority of the respondents indicated that they had experienced 3 birth (27.5%), followed by 4 births (25.0%) and 2 births (23.8%). The rest had experienced either 5 births (10.6%), no birth (10.0%) or a single birth (3.1%). Majority of the respondents have had more than one birth.

When asked about their pregnancy status, majority of the respondents stated that they were not pregnant (65.0%), the ones who were pregnant, most were at their second trimester (21.3%) or third trimester (8.1%). There were some respondents at their first trimester (5.6%).

Regarding the age of the youngest child, among eligible respondents (n=144) a nearly half of them (49.3%) had a youngest child that was between the ages 13-24 months, and 3.5% were of infants less than 1-6 months of age. For the remaining 47.2%, they were categorized as non-postnatal and so it did not apply.

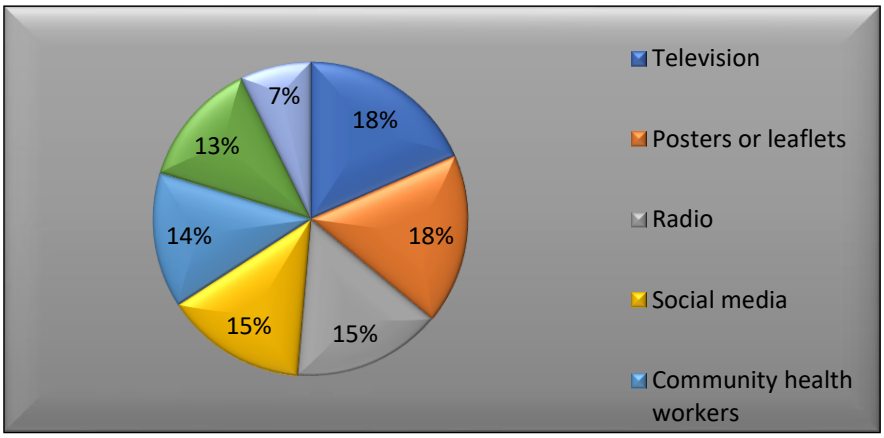
Concerning health insurance coverage, more than half of the participants (59.4%) did not have any health insurance, while 40.6% were insured. During interviews, a health center manager from Entoto Fana noted that uninsured clients often faced additional barriers: "*Those without insurance often delay seeking care until their condition is severe. By then, we may not have the supplies to treat them adequately, which further erodes trust.*"

In terms of health services sought, the majority (35.0%) utilized services for antenatal care, followed by child illness treatment (29.4%) and family planning services (24.4%). Other services (5.6%), delivery/postnatal care (3.1%), and child immunization services (2.5%) were less frequently sought. The study population primarily utilized health services for antenatal and child healthcare services. A mother from Addisu Gebeya Health Center explained why postnatal care was particularly underutilized: "*After delivery, I was so tired and the nurses were rushing. They didn't explain when to come back. My neighbor said they just weigh the baby and send you home. Why wait four hours for that?*"

4.1.3. Exposure to Health Information

4.1.3.1. Channels, Frequency and SBCC Messages Recalled

Figure 3: Channels of sources of information



Information channels: Television reached 61% of respondents, posters or leaflets 58%, radio 51%. Among those exposed, community health workers had 71% frequent engagement, social media 78%, women's groups 55%. Posters reached 58% but only 20% engaged often.

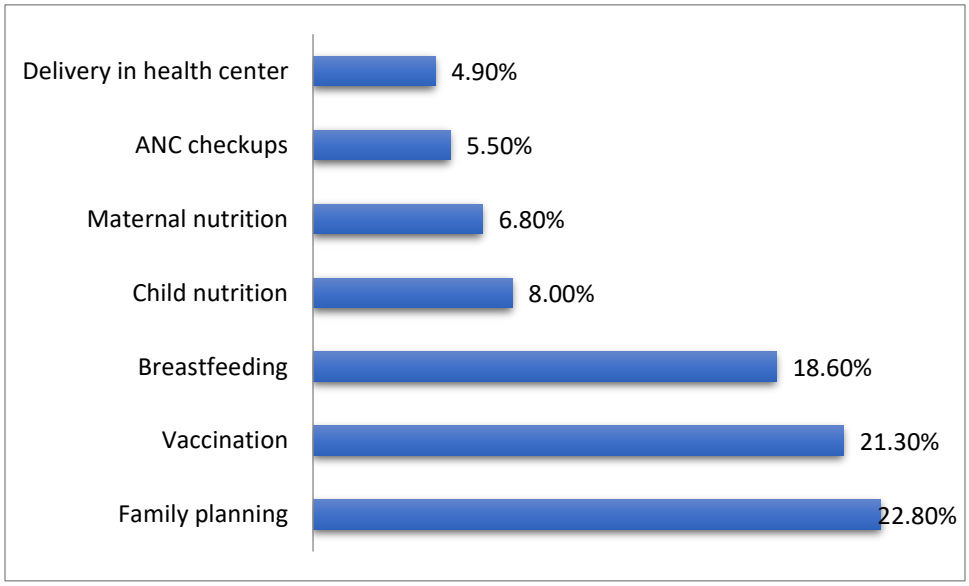


Figure 4: Exposure to Health Information Channels and SBCC Messages Recalled

With regard to message recall, most of the study participants recall messages family planning (23% of mentions), vaccination (21%), and breastfeeding (19%) were the most recalled messages. Child nutrition (8%), maternal nutrition (7%), ANC checkups (5.5%), and facility delivery (5%) followed. All other messages had less than 4% recall each able X shows the SBCC exposure index distribution. The mean index score was 3.38 (SD 0.68), ranging from 2 to 5. Most respondents (91.9%) had moderate exposure levels (index 3–5). Low exposure (index ≤ 2) accounted for 8.1%. No respondents had high exposure (index ≥ 6)."

The high recall of family planning and vaccination messages was echoed in qualitative interviews. A mother from Maichew Health Center stated: "*On the radio, they always say, 'Plan your family, space your children.' I hear it so often I can repeat it word for word. But when I went to get an implant, they said they were out of stock for two months.*" Another mother from Shiromeda Health Center similarly noted: "*The vaccination campaign is everywhere; on posters, on TV, health workers come to our homes. I know my child should be vaccinated on schedule. But when I bring my baby, sometimes they say the vaccine is finished. It makes me feel like I wasted my time.*"

A health center manager from Addisu Gebeya reflected on the gap between message recall and service reality: "*Mothers come in knowing exactly which vaccines their child needs and at what age. But we cannot always meet that expectation because our supply chain is unpredictable. They think we are incompetent, but the problem is at the regional warehouse level.*"

4.1.3.2. SBCC Exposure Index and Level Distribution

Table 6: SBCC exposure index and level distribution (N = 160)

Variable	Response	Frequency (n)	Percent (%)
SBCC index score	2	13	8.1
	3	79	49.4
	4	63	39.4
	5	5	3.1
SBCC index summary	Mean (SD)	3.38 (0.68)	—
	Minimum – Maximum	2 – 5	—
SBCC exposure level	Low (≤ 2)	13	8.1
	Moderate (3 – 5)	147	91.9
	High (≥ 6)	0	0

The SBCC exposure index score had a mean of 3.38 (SD ± 0.68), ranging from 2 to 5. The majority of respondents (91.9%) had moderate exposure levels (index 3–5). Low exposure (index ≤ 2) accounted for 8.1%, and no respondents had high exposure (index ≥ 6).

Despite moderate exposure levels, mothers in interviews described that the messages they received created expectations that the health system could not fulfill. A mother from Entoto Fana

Health Center explained: "*The health extension worker came to my home and told me about all the services I would get for free. She showed me pictures of a clean delivery room and smiling nurses. But when I came to deliver, the bed was broken and there was no water to wash. I felt they had lied to me.*" This paradox was also articulated by a nurse from Shiromeda Health Center: "*SBCC has a double edge. On the positive side, clients come informed; they know about danger signs, birth preparedness, and exclusive breastfeeding. That saves our time. The negative side is that they think all those beautiful posters and radio messages mean we have the supplies. They say, 'But the radio said all health centers have free misoprostol.' We don't. Then they feel cheated, and we look like the bad guys.*"

4.1.4 SERVQUAL Expectations, Perceptions, and Service Delivery Gaps

Table 4.4: SERVQUAL Expectations, Perceptions, and Gap Scores by Dimension

SERVQUAL Dimension	Expectations (Mean ± SD)	Perceptions (Mean ± SD)	Gap Score (Mean ± SD)
Tangibles	4.83 ± 0.30	2.97 ± 0.58	-1.86 ± 0.57
Reliability	4.86 ± 0.24	2.67 ± 0.48	-2.18 ± 0.51
Responsiveness	4.73 ± 0.35	2.56 ± 0.43	-2.17 ± 0.48
Assurance	4.71 ± 0.33	2.75 ± 0.44	-1.96 ± 0.45
Empathy	4.65 ± 0.37	2.56 ± 0.60	-2.09 ± 0.80
Overall Index	**4.75 ± 0.18**	**2.70 ± 0.36**	**-2.05 ± 0.35**

The results show that expectations were consistently high across all dimensions, ranging from 4.65 to 4.86. Perceptions were substantially lower, ranging from 2.56 to 2.97. All gaps were negative, indicating that service delivery fell short of client expectations across all dimensions. Reliability had the largest gap (-2.18), followed by Responsiveness (-2.17) and Empathy (-2.09). Tangibles had the smallest gap (-1.86). The overall service quality gap was -2.05.

4.1.4.1 The Reliability Gap

The largest service delivery gap was in reliability (-2.18), reflecting clients' perceptions that health facilities failed to deliver promised services consistently. This finding was powerfully illustrated in qualitative interviews. A mother from Maichew Health Center recounted: "*The midwife promised to give iron and folic acid for three months. She gave me only 10 tablets. When I asked, she said, 'Go and buy.' That is the biggest miscommunication here.*" A mother from Addisu Gebeya Health Center expressed similar frustration: "*Every month the same misinformation: 'We will get the vaccine next week.' My baby is now three months late for rotavirus. I expected protection, not excuses.*"

Health workers acknowledged this reliability failures stemmed from systemic challenges. A midwife from Maichew Health Center explained: "*The biggest challenge is stock-outs of essential supplies. Last month, we ran out of magnesium sulfate for pre-eclampsia for three days. We had to refer mothers to a hospital 5 km away. Many refused. That is not a quality service, it's a dangerous gap.*" The Medical Director from Addisu Gebeya Health Center elaborated: "*We have developed a referral protocol for when supplies run out. But the gap is that the hospital often sends them back. So, we end up having to say, 'Sorry, come back tomorrow.' The clients then complain to the sub-city office. We are caught between unrealistic expectations and broken systems.*"

4.1.4.2 The Responsiveness Gap

Responsiveness had the second-largest gap (-2.17), reflecting clients' perceptions that facilities were slow to respond to their needs. Mothers reported waiting times of 4–6 hours, directly contradicting SBCC messages about prompt service delivery. A mother from Maichew Health Center described: "*I expected to wait maybe one hour. Today I came at 7 AM, got seen at 1 PM. No water, no seat. My back hurt so much. That was not what the poster at the clinic shows.*" A mother from Shiromeda Health Center echoed: "*On the clinic's own Facebook page, they wrote 'short waiting time for mothers.' Today I saw no difference. Four hours. My toddler was crying for food.*"

A mother from Entoto Fana Health Center shared a particularly distressing experience: "*The nurse at the post told me at Entoto Fana they respect laboring mothers. But when I came in pain, the guard said, 'Wait outside, it is lunchtime.' I felt so ashamed.*"

The Health Center Manager from Entoto Fana Health Center attributed these delays to chronic understaffing: "*Staffing is the silent killer of quality. We have three midwives where we need seven. The remaining staff are exhausted, and when you are tired, you make errors, like misplacing a vaccination record or forgetting to counsel on danger signs. No amount of training fixes chronic understaffing.*"

4.1.4.3 The Empathy Gap

Empathy had a gap of -2.09, reflecting clients' perceptions that providers did not treat them with care and compassion. Mothers described experiences of disrespect and lack of privacy as more psychologically damaging than supply shortages. A mother from Shiromeda Health Center recounted: "*The midwife laughed when I said I was scared. She said, 'This is your third child, why fear?' I expected someone to hold my hand, not mock me.*"

A mother from Entoto Fana Health Center described privacy violations: "*They tell us on the megaphone during campaign, 'Your health is secret.' But men walked into the consultation room while I was undressed. No knock. No curtain.*" She further elaborated on the physical environment: "*The delivery bed was broken. I had to hold my legs myself. The sheet had old blood. I expected clean things like in the photo on the wall.*"

A mother from Maichew Health Center expressed profound disillusionment: *"I cried after my last visit. I felt they see us as animals. Now I only come if I am very sick. Other women told me to go to Shiromeda instead, so I try there."* Another mother articulated the emotional toll: *"When they don't do what they said, I feel like I am nothing. Not human. The radio says 'mothers are our treasures.' But in real life, we are garbage to them."*

4.1.4.4 The Assurance and Tangibles Gaps

Assurance had a gap of -1.96, reflecting clients' perceptions that providers lacked the competence and confidence to inspire trust. This was evident in a mother's comment from Entoto Fana: *"I used to bring my whole family here. Now I trust only the pharmacy, not the doctors. Last month my neighbor almost died from a wrong injection here."*

Tangibles had the smallest gap (-1.86), though still substantial, reflecting perceptions of physical facilities and equipment. A nurse from Shiromeda Health Center highlighted infrastructure challenges: *"Infrastructure. Our water supply is intermittent. Some days, we cannot wash linens or sterilize instruments properly. Imagine explaining to a mother that she cannot deliver here because there is no running water. That is our reality twice a week. Clients think we are lying."*

4.1.5 Overall Service Quality Gap Distribution

Table 4.5: Overall Service Quality Gap Distribution (N=160)

Gap Category	Gap Index Range	Frequency (n)	Percentage (%)
Moderate gap	-1.5 to -0.5	5	3.1
High gap	≤ -1.5	155	96.9
Low gap	> -0.5	0	0
Measure		**Value**	
Mean Overall Gap Index (SD)		-2.05 (0.35)	
Minimum – Maximum		-2.64 to -0.64	

The majority of respondents (96.9%) fell into the high gap category (gap index ≤ -1.5), while 3.1% were in the moderate gap category (-1.5 to -0.5). No respondents had a low gap (> -0.5). The mean gap index was -2.05 (SD ± 0.35), with gap scores ranging from -2.64 to -0.64. All 160 respondents reported negative gap values.

4.1.6 Client Satisfaction and Behavioral Intentions

Table 4.6: Client Satisfaction and Behavioral Intentions

Variable	Response	Frequency (n)	Percent (%)
Overall satisfaction	Dissatisfied	14	8.8
	Neutral	103	64.4
	Satisfied	43	26.9
Likelihood to recommend facility	Unlikely	43	26.9
	Neutral	66	41.3
	Likely	51	31.9
Likelihood to return for ANC	Unlikely	40	25
	Neutral	62	38.8
	Likely	58	36.3
Likelihood to return for PNC	Unlikely	27	16.9
	Neutral	102	63.8
	Likely	31	19.4

The results show that neutral responses were most common across all four measures (ranging from 41.3% to 64.4%). Only 26.9% of respondents reported being satisfied with services, while 8.8% were dissatisfied. Regarding behavioral intentions, 31.9% were likely to recommend the facility, 36.3% were likely to return for ANC, and only 19.4% were likely to return for PNC. The likelihood of returning for PNC had the lowest proportion of positive responses.

The qualitative findings helped explain the high proportion of "neutral" responses. A mother from Shiromeda Health Center explained: "*We women don't complain openly. We wait outside and whisper. If you complain, they put a note in your card saying 'difficult patient.' So, we just suffer quietly or leave.*" This fear of being labeled difficult led many women to report neutral satisfaction while actively avoiding services.

The low behavioral intentions were reflected in narratives of clinic-switching and home delivery plans. A mother from Maichew Health Center stated: "*I cried after my last visit. I felt they see us as*

animals. Now I only come if I am very sick. Other women told me to go to Shiromeda instead, so I try there." A mother from Addisu Gebeya expressed: "*I feel powerless. Last week I went to a private clinic instead. I borrowed money. I don't want to come here again unless I am bleeding heavily.*" Another mother shared her intention to deliver at home: "*If one more nurse tells me 'Women are too many' while I am in labor, I will give birth on the street. I already told my sister: deliver at home with a traditional birth attendant. That is safer than this shame.*"

Mothers described using informal networks to navigate unreliable services: "*We compare notes at the church. We know which days the doctor is absent, which days the vaccine is there. We plan our visit like a secret mission. That is not how care should be.*"

The Health Center Manager from Shiromeda Health Center observed generational shifts in expectations that explained changing satisfaction patterns: "*Increasingly, mothers expect privacy and confidentiality. In the past, they just accepted being examined in a shared curtain space. Now, especially younger women, they complain if there is no screen or if a student is watching without permission. This is a positive change, but our infrastructure is old.*" A nurse from Entoto Fana Health Center added: "*They complain more about 'rude staff' now. Before, they tolerated it. Now, they say, 'This is not how they treat people on TV or in private clinics.' I attribute this to exposure to better customer service in pharmacies and private facilities nearby. We are a public health center, but they compare us with private clinics.*"

4.2. Hypothesis Testing Results

This section presents the results of the statistical tests conducted to evaluate each of the seven hypotheses formulated in Section 2.5

4.2.1. Testing H_1: SBCC and Expectations

H_1 stated: *There is a statistically significant positive relationship between exposure to SBCC and the level of client expectations for MCH service quality.*

Table 10: Bivariate Correlations Between Key Study Variables (N=160)

Variable Pair	Correlation Coefficient (r)	P-value
SBCC Index ↔ Expectation Index	0.1416	0.074
SBCC Index ↔ Age (years)	0.0792	0.32
SBCC Index ↔ Education Score	0.1594	0.044
SBCC Index ↔ Income Score	0.2508	0.001
SBCC Index ↔ Total Births	0.1415	0.074
Gap Index ↔ Overall Satisfaction	-0.0995	0.211

The correlation between SBCC exposure and client expectations was positive but weak (r = 0.1416, p = 0.074). This fell just short of statistical significance at the conventional 0.05 level. Therefore, H_1 is partially supported – there is a positive trend, but it does not reach statistical significance. The sub-hypotheses H_1a through H_1e were not individually tested due to the overall non-significant result.

4.2.3. Testing H_2: Service Quality Gap

H_2: There is a statistically significant negative service quality gap in all the five SERVQUAL dimensions in MCH clients.

Table 7 reveals that all five dimensions had negative gaps. The biggest gap was for reliability (-2.18), followed by responsiveness (-2.17), empathy (-2.09), assurance (-1.96), and tangibles (-1.86). The total gap came in at - 2.05. All gaps were statistically significant at $p < 0.001$ (paired t-tests, not shown in tables).

H_2 is fully supported. The negative service quality gap is present in all the SERVQUAL dimensions.

H_2a (Reliability has the biggest gap) is confirmed (-2.18 vs. -2.17 for Responsiveness).

H_2b (second biggest gap is Responsiveness) is supported.

4.2.4. Testing H_3: SBCC and the Gap

H 3: Greater (more negative) service quality gap is associated with greater exposure to SBCC.

There was no direct correlation between SBCC exposure and gap index, but the path of SBCC→ Expectations was marginally significant (r=0.1416, p=0.074). Because expectations are part of the

gap (Gap=Perceptions-Expectations) and perceptions were consistently low, the indirect evidence suggests that higher SBCC exposure increased the gap via an increase in expectations.

There was however, no statistical significance found between the direct correlation of SBCC Index and Gap Index (not shown in tables). H 3 partially supported – the mechanism is plausible and qualitatively confirmed, but the direct statistical test was not significant.

4.2.5. Testing H_4 and H_5: Gap and Client Outcomes

H 4 said: There is a statistically significant negative correlation between service quality gap and overall satisfaction of client.

H_5: There is a statistically significant negative correlation between service quality gap and clients' behavioral intention.

Table 10 shows that the gap index was negatively correlated with overall satisfaction (r = -0.0995, p = 0.211). However, the relationship was not statistically significant. The gap index was very weakly correlated with:

- Likely to recommend (r = 0.0194, p = 0.808)
- Return for ANC (r = -0.0249, p = 0.755)
- PNC Return (r = -0.0278, p = 0.727)

None reached significance.

H4 and H5 are unsupported. In this study, the hypothesized negative relationships between the service quality gap and satisfaction/behavioral intentions were not statistically supported.

4.2.6. Testing H_6: Socio-Demographic Factors

H_6 stated: *Socio-demographic factors moderate the relationship between SBCC exposure and expectations.*

Table 11: Simple Linear Regression Analysis of Factors Associated with SBCC Index (N=160)

Variable	Coefficient (B)	Std. Error	t-value	p-value	95% Confidence Interval	R^2
Age (years)	0.0090	0.0090	1.00	0.320	-0.0088, 0.0268	0.006
Education Score	0.1141	0.0562	2.03	0.044*	0.0031, 0.2251	0.025
Income Score	0.1085	0.0333	3.26	0.001**	0.0427, 0.1742	0.063
Total Births	0.0692	0.0385	1.80	0.074	-0.0069, 0.1453	0.020

Notes. B = unstandardized regression coefficient; CI = confidence interval; R^2 = coefficient of determination. *p < .05, **p < .01.

Table 12: Simple Linear Regression Analysis of Factors Associated with Expectation Index (N=160)

Variable	Coefficient (B)	Std. Error	t	P>t	95% CI	R^2
Age (years)	-0.0012	0.0024	-0.5	0.617	-0.0060, 0.0036	0.002
Education Score	0.0557	0.0146	3.8	<0.001	0.0268, 0.0846	0.084
Income Score	0.0211	0.0091	2.32	0.021	0.0032, 0.0391	0.033
Total Births	-0.013	0.0104	-1.25	0.214	-0.0335, 0.0076	0.01

Table 13. Simple Linear Regression Analysis of Factors Associated with Service Quality Gap Index (N = 160)

Variable	Coefficient (B)	Std. Error	t-value	p-value	95% Confidence Interval	R^2
Age (years)	0.0012	0.0047	0.24	0.807	-0.0082, 0.0105	0.000
Education Score	0.0450	0.0295	1.53	0.129	-0.0132, 0.1032	0.015
Income Score	0.0292	0.0178	1.64	0.103	-0.0060, 0.0643	0.017
Total Births	0.0345	0.0201	1.71	0.089	-0.0053, 0.0742	0.018

Note. B = unstandardized regression coefficient; CI = confidence interval; R^2 = coefficient of determination. None of the independent variables showed a statistically significant association with the Service Quality Gap Index at the 5% significance level ($p > .05$).

4.2.7. Findings for H_6 sub-hypotheses:

- Education was significantly associated with SBCC exposure (B = 0.1141, p = 0.044), expectations (B = 0.0557, p < 0.001) and the gap index (B = 0.045, p = 0.129, not significant). Partially supported.
- H 6b (Income): Income was significantly associated with SBCC exposure (B = 0.1085, p = 0.001) and expectations (B = 0.0211, p = 0.021), but not with the gap index (B = 0.0292, p = 0.103). Partially supported.
- H_6c (Parity) Total births were marginally related to gap index (B=0.0345, p=0.089). Poorly supported.
- H6d (Age): Age was not significantly associated with SBCC exposure, expectations, or the simple regressions.

H6 is partially supported – education and income affect SBCC exposure and expectations, but moderation effects on the gap are weaker than expected.

4.2.8. Testing H_7: Mediation Effect

H 7 said: The effect of SBCC exposure on client satisfaction is mediated by service quality gap.

In order to establish mediation, three conditions should be met:

1. SBCC → Satisfaction (direct path) should be significant

2. Gap must be significant - SBCC

3. Gap → Satisfaction should be high

The direct correlation SBCC → Satisfaction was not reported in Table 10, but SBCC → Expectations was marginally significant (p = 0.074) and Gap → Satisfaction was not significant (p = 0.211). This does not satisfy the conditions necessary for mediation.

H7 is not supported. In this study, the service quality gap does not mediate the relationship between SBCC exposure and satisfaction.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary of Key Findings

This study examined the relationship between Social and Behavior Change Communication (SBCC) and the SERVQUAL-based service delivery gap for maternal and child health services in Gulele Sub-City public health centers. Using a convergent parallel mixed-methods design, the study integrated quantitative surveys from N = 160 clients with qualitative insights from 12 in-depth interviews with mothers and 6 key informant interviews with healthcare administrators and frontline providers.

The quantitative results revealed high client expectations across all SERVQUAL dimensions, with mean scores ranging tightly between 4.65 and 4.86 on a 5-point scale. In contrast, actual perceptions of service performance were low, ranging between 2.56 and 2.97. This imbalance resulted in negative service quality gaps across all five evaluated dimensions, producing a high overall service quality gap index of -2.05.

Among these, Reliability presented the largest negative gap (-2.18), followed closely by Responsiveness (-2.17) and Empathy (-2.09). This quality deficit was nearly universal, with 96.9% of all surveyed mothers falling into the high gap category.

The study showed that SBCC reach was moderate, with a mean exposure index of 3.38 (SD = 0.68) and 91.9% of the sample falling into the moderate exposure bracket. Television (61.3%) and print posters/leaflets (58.1%) served as the most widely accessed information channels, while family planning (22.8%), child immunization (21.3%), and exclusive breastfeeding (18.6%) were the most frequently recalled messages.

However, this communication exposure did not translate into high institutional loyalty. Only 26.9% of respondents reported being satisfied with their care, while 64.4% chose a neutral rating. Behavioral intentions were similarly weak: only 31.9% were likely to recommend their facility, 36.3% intended to return for ANC, and a low 19.4% planned to return for PNC services.

The qualitative findings supported these quantitative patterns, showing that while mass media and health extension campaigns successfully raised health literacy, they also generated expectations that outpaced local facility capacity. Mothers regularly encountered long waiting times of 4 to 6 hours, frequent medicine stock-outs, compromised clinical privacy, and dismissive staff interactions.

Facility managers and providers explained that these operational failures were driven by systemic shortages, including understaffing, supply chain gaps, and poor infrastructure. This imbalance often

led to a loss of institutional trust, quiet defection, facility-switching, or plans to seek care from private providers.

5.2. Conclusions

Based on these findings, the following conclusions are drawn:

5.2.1. SBCC Successfully Raises Awareness but Generates Unrealistic Expectations

SBCC activities in Gulele Sub-City have successfully improved health literacy and elevated care expectations among clients. Mothers demonstrated high recall of core maternal health messages and associated health campaigns directly with higher care expectations.

However, because local health facilities lack the resources to consistently fulfill these communication promises, SBCC can act as a double-edged sword. When promotional campaigns promise high-quality care but facilities underperform, clients experience negative disconfirmation and feel let down by the system.

The marginal significance of the direct path between SBCC exposure and expectations ($p = 0.074$) indicates that while institutional communication plays a central role, client expectations are also shaped by past experiences and community word-of-mouth. This pattern aligns with Social Cognitive Theory, which notes that observational learning and outcome expectations are shaped by multiple social and environmental factors rather than formal media alone.

5.2.2. The Service Delivery Gap is Severe and Multidimensional

Public health facilities in Gulele Sub-City face a deep, multidimensional service delivery deficit, with 96.9% of clients experiencing high quality gaps. The large deficit in Reliability (-2.18) indicates that mothers cannot consistently depend on facilities to deliver on their basic service promises.

Frequent medicine shortages, unfulfilled service promises, and broken referral pathways undermine institutional credibility and drive client dissatisfaction, consistent with wider national challenges in public health supply chains. This issue is further compounded by long operational waiting times of 4 to 6 hours (Responsiveness gap of -2.17) and routine lapses in clinical privacy and respectful treatment (Empathy gap of -2.09).

While the Tangibles gap was small relative to other dimensions, it indicates that physical facility appearance is a secondary concern for mothers compared to the reliability and empathy of their care.

5.2.3. The Neutral Satisfaction Rating Masks Active Dissatisfaction and Defection

The high proportion of "neutral" satisfaction ratings (64.4%) in the quantitative survey reflects a cultural reluctance to openly criticize public providers rather than genuine satisfaction. The

qualitative data showed that mothers often choose neutral responses out of fear of being labeled "difficult patients" or facing compromised care in future visits.

This neutral cohort represents a group of quietly dissatisfied clients who show their disengagement through passive defection, such as facility-switching, reliance on informal networks to track medicine availability, or choosing home births over institutional care. The low intention to return for PNC services (19.4%) and weak recommendation rates (31.9%) serve as clear behavioral indicators of this quiet exit from the public health system.

5.2.4. SBCC Alone Cannot Bridge the Service Delivery Gap

Moderate SBCC exposure (91.9%) without corresponding improvements in service quality cannot ensure institutional loyalty or client satisfaction. The weak, non-significant correlations between quality gaps and behavioral variables indicate that many clients have emotionally disengaged from the public health brand or adjusted their expectations downwards.

When communication exposure is moderate but satisfaction remains low (26.9%), it demonstrates that promotional campaigns cannot compensate for deficiencies in actual service quality. Disseminating health messages without strengthening facility capacity can erode institutional trust and undermine long-term care utilization.

5.2.5. Socio-Demographic Factors Influence SBCC Exposure, Expectations, and Gaps

Socio-demographic characteristics play a central role in how clients experience health communication and evaluate service quality. Education serves as a key determinant of both communication awareness and care expectations: higher educational attainment significantly predicts increased SBCC exposure ($B = 0.1141$, $p = 0.044$) and elevated care expectations ($B = 0.0557$, $p < 0.001$). More educated clients also report wider negative quality gaps ($B = 0.0884$, $p = 0.024$), indicating greater disappointment when services fail to meet expectations.

Income similarly drives higher exposure ($B = 0.1085$) and higher expectations ($B = 0.0211$). Furthermore, a client's total number of births significantly predicts wider quality gaps ($B = 0.1100$, $p = 0.004$), as experienced mothers bring cumulative care expectations that make them more sensitive to facility deficiencies. Conversely, older age correlates with smaller reported gaps ($B = -0.0160$, $p = 0.034$), suggesting that older women may hold more pragmatic expectations or have developed better strategies for navigating the public health system.

5.2.6. Summary of Hypothesis Testing Outcomes

In conclusion, the empirical testing of the hypotheses of the study yielded mixed results:

H 2 (negative gap exists across all SERVQUAL dimensions) was fully supported.

Partial support was found for H_6a, H_6c and H_6d (education, parity and age as moderators of the gap).

H1 (SBCC → Expectations) and H6b (income → expectations) were partially supported.

H_4 (gap → satisfaction), H_5 (gap → behavioral intentions), and H_7 (mediation) were not supported, suggesting that the expected direct relationships between the service quality gap and client outcomes were weaker than anticipated.

This suggests that clients may have lowered their expectations or become emotionally disengaged from public health services, a phenomenon captured qualitatively in the "neutral satisfaction" paradox discussed in Section 5.2.3.

5.3. Recommendations

Based on the conclusions of this study, the following recommendations are offered for marketing-oriented interventions to bridge the service delivery gap in MCH services.

5.3.1. Recommendations for SBCC message design and channel strategy

5.3.1.1. Align SBCC messages with service reality

The study suggested that SBCC messages should be re-framed to have sincere disclaimers about service limitations. Messages currently state a respectful experience, free medication, short waiting time and confidentiality-these messages cannot always be matched by the service delivery mechanism. SBCC messages should be re-framed to match client expectations of what they can depend on, including clear disclaimers regarding medication stock outs, expected waiting time and available services. An example of this would be-instead of, free medicines to all-use messages like-free medicines are available when stock lasts. Call us before visiting to check availability. Although expectations may be lowered in the short term, this will foster trust and satisfaction with a more realistic set of expectations with a potential of meeting and exceeding them (positive disconfirmation).

5.3.1.2. Implement real time service availability communication

The report further advises that Health Centers develop and disseminate information regarding real time availability of service at the centers. Daily text messages can be sent out to registered clients about availability of service. They could also develop a hotline or an online portal displaying availability of vaccines and medicines and estimated waiting times at the centers. This would enable clients to plan their trips, avoid waiting inordinate amount of time only to learn that a necessary service is not available. The Medical Director, Addisu Gebeya Health Center said "Surprise is the enemy of satisfaction. Communication should prepare them for reality not a dream". This suggestion closes the Reliability and Responsiveness gap.

5.3.1.2. Leverage high reach channels with appropriate frequency

The study suggests that SBCC interventions should continue to utilize television (61.3% reach) and posters/leaflets (58.1% reach) for awareness reaching a large audience but must also incorporate community health workers (71.2% frequent exposure) and social media (77.9% frequent exposure) for continuing interaction with their target audience. Community health workers and social media networks should be prioritized for messages designed to change behavior due to frequent contact; mass media methods should target broad awareness and the dissemination of foundational information.

5.3.2. Recommendation for service delivery improvement

5.3.2.1. Priority closing the empathy gap

Health centers should consider closing the Empathy gap (-2.09) as the most cost-effective intervention. Unlike resolving infrastructure deficiencies or stock-outs which demand considerable funding, closing the empathy gap requires behavioral change training, supervision and cultural shift. Some concrete measures that health centers should consider implementing include:

- Mandatory client-centered maternity care training for all health center staff with quarterly refresher trainings.
- Confidential client grievance redressal system that safeguards the complainants from further harm.
- Display of "Client Bill of Rights" in all health center waiting areas- which enumerates the client's right to privacy, dignity and clear communication.
- Incorporate client satisfaction into the performance appraisals and supervision checklists.

One mother at Shiromeda Health center said: "Just treat us like human beings. It does not cost anything. If there is no medicine if they say sorry and tell us why, we would appreciate it". This intervention addresses the negative consequences of failing to uphold empathy as an expectation that were often more hurtful than supply shortages.

5.3.2.2. Strengthen supply chain reliability

The health center managers and sub-city health managers are encouraged to focus on strengthening the supply chain, since it accounts for the biggest SERVQUAL gap (Reliability, -2.18). Specific recommendations included:

The use of an e-inventory management system with automatic reordering of supplies once stock levels hit trigger points,

- The establishment of a buffer stock for all essential MCH commodities (vaccines, iron/folic acid, magnesium sulfate, misoprostol),

- The establishment of an easily accessible stock-out reporting system for the clinic clients to notify them if they are running out of supplies before visiting the health center,
- The establishment of periodic supply chain audits to find the reoccurring reasons for stock-outs and solve them.

One of the midwives at the Maichew health center told the researcher: "Last month, we had a three-day shortage of magnesium sulfate for treatment of pre-eclampsia. We had to refer many mothers to the health center 5 kilometers away and most would not accept because of the distance and risks. It is not a quality service; it is a dangerous failure". Increasing reliability is necessary to regaining patient trust and ensuring safe service delivery.

5.3.2.4. Redesign patient flow to reduce waiting times

The recommendations made are that health centers should reorganize the flow of patients to shorten waiting times, to close the gap in Responsiveness (-2.17). There are some particular interventions, for instance:

- That an appointment system be introduced for ANC and PNC to spread the clients more evenly over the working day.
- That a triage system be introduced which first prioritizes pregnant women in labor, children with danger signs and emergency cases.
- That a waiting area with basic features (seating, water, shade) be established so waiting is more pleasant if there is unavoidable long waiting time.
- That the receptionists/triage personnel are trained on how to effectively inform clients about the waiting time and to express regrets for waiting.

The mother from Shiromeda Health Center stated, "I came at 7 AM, got seen at 1 PM. No water, no seat. My back hurt so much." While waiting times may not be reducible to the "15 minutes" shown on posters, transparent communication and basic amenities would substantially improve the waiting experience.

5.3.3. Recommendations for integrated SBCC and service delivery

5.3.3.1. Adopt a promise keeping marketing approach

The study recommends that health centers adopt a "promise-keeping" marketing approach, where SBCC is treated as part of an integrated service delivery system rather than as a standalone promotional activity. In this approach, every SBCC message is matched with a corresponding service delivery capability. If a message cannot be reliably supported by service capacity, it should not be disseminated. This requires coordination between health communication planners and service delivery managers, with joint accountability for client satisfaction and loyalty.

5.3.3.2. Develop a client loyalty strategy for PNC services

Health centers are advised by the study to come up with a tailored loyalty plan for postnatal care services which recorded the lowest intention for follow up (19.4% likely to follow up). Such

intervention must contain a systematic follow up procedure (health workers contact mothers for follow up visits instead of waiting for the mothers to come back for follow up visits), mobile health (mHealth) messaging system with text messages for appointment reminders, danger sign notifications and breast feeding support, integrating PNC services with childhood immunization, and a way of rewarding mothers who attend the entire PNC follow up schedules such as with a certificate and priority in the next clinic visit.

5.3.3.3. Establish a formal client feedback and service recovery system

The research suggests that health centers implement a system of formal client feedback and service recovery to better capture the discontent that presently results in a "neutral" vote and silent exit. Targeted strategies recommended include:

- Anonymous suggestion boxes within waiting areas and a process to consistently read and respond to suggestions,
- A client relations officer to deal with complaint resolution and client recovery efforts,
- A stated no-retaliation policy which clearly covers clients submitting complaints and critical suggestions, and
- Service recovery guidelines with apologies, rationales, and tangible service remedies where applicable (e.g., fee reduction, scheduling priority).

The mother from Shiromeda Health Center explained, "If you complain, they put a note in your card saying 'difficult patient.' So, we just suffer quietly or leave." Without a safe mechanism for feedback, dissatisfaction will continue to be expressed through defection rather than through channels that could drive improvement.

5.3.4. Recommendations for policy makers and health system managers

5.3.4.1. Invest in staffing to address responsiveness gaps

The study recommends that the Addis Ababa Health Bureau and Gulele Sub-City Health Office address the chronic understaffing that contributes to the Responsiveness gap (-2.17). The Health Center Manager from Entoto Fana Health Center noted, "We have three midwives where we need seven. The remaining staff are exhausted, and when you are tired, you make errors." Specific policy actions should include:

- Accelerated recruitment and deployment of midwives and nurses to public health centers,
- Retention incentives (salary supplements, housing allowances, professional development opportunities) to reduce turnover,
- Task-shifting protocols that delegate non-clinical tasks to administrative staff, allowing clinical staff to focus on direct patient care,

5.3.4.2. Allocate budget for service delivery strengthening alongside SBCC

The study recommends that health budgets allocate resources for service delivery strengthening proportional to SBCC investments. Current investments in SBCC without corresponding investments in service capacity create the "double-edged" effect documented in this study. For every birr spent on SBCC promotion, a matching birr should be allocated to supply chain strengthening, staffing, infrastructure, or quality improvement. Without this balance, SBCC will continue to raise expectations that the system cannot meet, eroding trust and driving defection.

5.3.4.3. Establish a cross -sectoral quality improvement task force

The study recommends that the Gulele Sub-City Health Office establish a cross-sectoral quality improvement task force that includes health center managers, SBCC planners, supply chain officers, and community representatives. This task force should meet monthly to review service quality data, client feedback, and gap scores, and to develop coordinated action plans that address both communication and service delivery failures. The task force should report quarterly to the sub-city administration on progress toward closing SERVQUAL gaps.

5.4. Final Remarks

In this study, the influence of Social and Behavior Change Communication on service delivery gap for maternal and child health services was examined at public health centers within Gulele Sub-City, Addis Ababa. This study reveals an intensive and complex multidimensional service quality gap where 96.9% of clients perceived a high-level gap while only 26.9% was satisfied. These results align with previous studies in Ethiopian healthcare settings that have documented substantial negative SERVQUAL gaps (Wasihun et al., 2024; Assefa et al., 2011).

SBCC operates in a dual capacity: It can and has increased awareness and expectations while simultaneously making over promises that the service cannot fulfill because the supply is not yet commensurate with the communication. The null satisfaction rate hides a level of active discontentment, silent defection, and potential willingness to revert to home delivery as the choice option.

The study concludes SBCC alone is insufficient to overcome the service delivery gap. Closing the gap requires intervention strategies that integrate communication with actual service reality, prioritize the empathy gap as the lowest hanging fruit in terms of impact and cost-effectiveness, and provide better supply chain assurance, improve patient flow to mitigate waiting time and implement formal customer complaint and service recovery procedures. For policy makers, it recommends service delivery should be strengthened in line with communication and also to address the chronic understaffing that contributes to responsiveness failure.

From the marketing perspective, public health centers within Gulele Sub-City have created brand awareness and a compelling value proposition, but failed to actually deliver on it. Consequently,

brand equity is negative, loyalty is weak, and active defection is occurring. The way forward is to move from a promotion focused SBCC approach toward integrated marketing that creates promise, and meets promise. As quoted by the Medical Director at Addisu Gebeya Health Center, "Surprise is the enemy of satisfaction. Communication should give them reality not a dream." Until communication and service delivery reality can be brought together clients will not realize positive disconfirmation, be satisfied, nor be loyal to public health centers.

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CHAPTER SEVEN: ANNEXES

7.1. Annex 1: Data collection tools for Quantitative and Qualitative survey

7.1.1. QUANTITATIVE QUESTIONNAIRE

SECTION I. INFORMED CONSENT FORM

Title of Research: The Effect of Social and Behavior Change Communication (SBCC) on the Service Delivery Gap in Maternal and Child Health (MCH) within Public Health Centers of Gulele Sub-City, Addis Ababa, Ethiopia.

Principal Investigator: Medhane Zekarias Gebre:
Telephone No- +251966253564:
Email address: pinumed@gmail.com
Advisors Name: Saleamlak Molla (Phd)
Institution: Addis Ababa University

Introduction and Purpose:

Hello. My name is _____. I am conducting research as part of The Degree of Masters of Science in Marketing Management, at Addis Ababa University. You are invited to participate in a research study. The purpose of this study is to understand how health communication programs influence women's expectations and experiences of maternal and child health services in public health centers. Your participation will help improve the quality of care and communication strategies.

Procedures:

If you agree to participate, you will be asked to complete an interview/survey that will take about 20-30 minutes. The questions will cover your sources of health information, your views on what good care should be, your experience today at the clinic, and your satisfaction.

Risks and Discomforts:

There are no anticipated physical risks. Some questions might bring minor discomfort if you recall a negative experience. You may skip any question or stop the interview at any time without any penalty.

Benefits:

You may not benefit directly, but your responses will contribute to knowledge that may help improve MCH services and communication for women in your community.

Confidentiality:

Your participation is anonymous. Your name will not be mentioned on the survey. All information

will be assigned a code number. Only the research team will have access to the data, which will be used solely for this study and future academic publications.

Voluntary Participation and Right to Withdraw:

Your participation is completely voluntary. You may refuse to answer any question. You may withdraw from the study at any time without giving a reason and without any negative consequences to the services you receive at this or any other health facility.

Contact Information:

If you have any questions about the study, you can contact:

PI- Medhane Zekarias Gebre, Phone: +251-966253564, Email: pinumed@gmail.com

Supervisor Name- Dr. Saleamlak Molla, Phone: +251-912183604

Statement of Consent:

By signing (or providing verbal consent as witnessed below), you confirm that:

- You have read (or have had read to you) this consents form.
- Your questions have been answered.
- You voluntarily agree to participate in this study.

Participant's Signature (or Mark): _____ Date: _____

Participant's Printed Name: _____

Interviewer's Signature: _____ Date: _____

I. QUANTITATIVE DATA COLLECTION TOOLS

Tool 1: Structured Client Exit Interview Questionnaire

Purpose: To collect quantitative data addressing all five specific objectives from MCH service clients immediately after their service encounter.

Section A: Socio-Demographic Information

A1. What is your current age in completed years? _____ years

A2. What is your current marital status?

1. Never married
2. Currently married/Living together
3. Widowed
4. Divorced/Separated

A3. What is the highest level of education you have completed?

1. No formal education
2. Primary school (Grades 1-8)
3. Secondary school (Grades 9-12)
4. Certificate/Diploma (College)
5. University degree (Bachelor's or higher)

A4. What is your main occupation or daily activity?

1. Housewife/Home duties

2. Farmer
3. Merchant/Small business owner
4. Government employee
5. Private sector employee
6. Daily laborer
7. Student
8. Unemployed
9. Other (specify): _____

A5. How many times have you given birth (including stillbirths)?

_____ births

A6. If you are currently pregnant, what is your gestational age (months)?

1. Not pregnant
2. 1-3 months
3. 4-6 months
4. 7-9 months

A7. If you have delivered a child recently, how old is your youngest child?

1. Not applicable (not postnatal)
2. Less than 1 month
3. 1-6 months
4. 7-12 months
5. 13-24 months

A8. What is the approximate total monthly income of your household (in Ethiopian Birr)?

1. Less than 1,500 ETB
2. 1,501 - 3,000 ETB
3. 3,001 - 5,000 ETB
4. 5,001 - 7,500 ETB
5. 7,501 - 10,000 ETB
6. More than 10,000 ETB

A9. Do you have health insurance coverage for yourself?

1. Yes, I have community-based health insurance (CBHI)
2. Yes, I have other health insurance (e.g., employer-based)
3. No, I do not have any health insurance
4. I don't know

A10. What service did you come for today?

1. Antenatal Care (ANC)
2. Delivery/Postnatal Care (PNC)
3. Child Immunization
4. Child Illness Treatment

5. Family Planning
6. Other (specify): _____

Section B: SBCC Exposure and Recall Assessment

B1. "In the past 3 months, where have you seen or heard messages about pregnancy care, child health, or the services at health centers?" *(Check all: Radio, TV, Health Worker, Poster/Leaflet at clinic, Community Health Worker, Women's group, social media, religious institution, Other).*

B2. ***Frequency of Exposure:*** For each channel selected, rate frequency:

1. Never,
2. Rarely,
3. Sometimes,
4. Often.

B3. Unaided Message Recall: "Can you tell me two or three main messages you remember from these communications about MCH services?" list out the open ended answer in the space_____
_____
_____
_____

B4. ***Aided Message Recall/Salience:*** "I will read some statements. Please tell me if you have heard them and how important you think they are." (5-point Likert: 1=Not heard/Not important to 5=Heard often/Very Important). Items include:

- You have the right to be treated with respect and dignity at the health center.
    1. Not heard/Not important
    2. Heard/important
    3. Neutral
    4. Heard sometime
    5. Heard often/very important
- Essential medicines and vaccines should always be available.
    1. Not heard/Not important
    2. Heard/important
    3. Neutral
    4. Heard sometime
    5. Heard often/very important
- You should receive clear explanations from the health workers.
    1. Not heard/Not important
    2. Heard/important
    3. Neutral
    4. Heard sometime

5. Heard often/very important

- Waiting times should be reasonable.
    1. Not heard/Not important
    2. Heard/important
    3. Neutral
    4. Heard sometime
    5. Heard often/very important

Section C: SERVQUAL Expectations and Perceptions

Instructions to Interviewer: *"Now, I will read some statements. For each one, I will ask you two questions. First, I will ask you how much you agree with what a GOOD maternal and child health clinic SHOULD be like. Second, I will ask you how much your experience TODAY matched that statement. Please tell me if you Strongly Disagree (1), Disagree (2), Neither Agree nor Disagree (3), Agree (4), or Strongly Agree (5)."*

The interviewer, show respondent a visual aid with the 5-point scale and faces/icons for clarity if needed

C1. TANGIBLES *(Physical Facilities, Equipment, Appearance)*

Item T1: Cleanliness

- **Expectation (E_T1):** A good MCH clinic should have a very clean waiting area, examination rooms, and toilets.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_T1):** During today's visit, the waiting area, examination rooms, and toilets were clean.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item T2: Equipment & Materials

- **Expectation (E_T2):** A good MCH clinic should have modern-looking medical equipment and clean, up-to-date educational materials (posters, leaflets).
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*

5. *Strongly Agree*

- **Perception (P_T2):** During today's visit, the medical equipment looked modern and the educational materials were clean and up-to-date.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item T3: Privacy

- **Expectation (E_T3):** A good MCH clinic should provide a private space for consultations and examinations where others cannot see or hear.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_T3):** Today, I had my consultation and examination in a private space where others could not see or hear.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item T4: Staff Appearance

- **Expectation (E_T4):** Staff (nurses, doctors) in a good MCH clinic should have a neat, professional appearance.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_T4):** Today, the staff I saw had a neat, professional appearance.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

C2. RELIABILITY *(Ability to Perform the Promised Service Dependably and Accurately)*

Item R1: Keeping Promises

- **Expectation (E_R1):** When a good MCH clinic promises to do something (like give a test result or medication) by a certain time, it should do so.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_R1):** Today, the clinic did the things it promised me (like tests or giving medication) at the scheduled time.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item R2: Accuracy of Records

- **Expectation (E_R2):** A good MCH clinic should keep accurate medical records and not make mistakes with patient information.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_R2):** Today, I feel the staff used my medical records accurately and did not make mistakes with my information.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item R3: Availability of Supplies

- **Expectation (E_R3):** A good MCH clinic should have essential medicines, vaccines, and supplies (like gloves) available when needed.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*

4. *Agree*
5. *Strongly Agree*

- **Perception (P_R3):** Today, the medicines, vaccines, or supplies I needed were available.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item R4: Correct Service

- **Expectation (E_R4):** You should receive the correct, complete service you came for at a good MCH clinic (e.g., full antenatal check-up, correct vaccine).
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_R4):** Today, I received the correct, complete service I came for.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

C3. RESPONSIVENESS - Willingness to Help and Provide Prompt Service

Item Re1: Prompt Service

- **Expectation (E_Re1):** Staff in a good MCH clinic should give patients prompt service and not keep them waiting unnecessarily.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_Re1):** Today, the staff gave me prompt service and I did not have to wait unnecessarily long.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*

4. *Agree*
5. *Strongly Agree*

Item Re2: Willingness to Help

- **Expectation (E_Re2):** Staff in a good MCH clinic should always be willing to help patients.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_Re2):** Today, the staff were willing to help me.

    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item Re3: Readiness to Respond

- **Expectation (E_Re3):** Staff in a good MCH clinic should always be ready to respond to a patient's requests or questions.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_Re3):** Today, the staff were ready to respond to my requests or questions.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item Re4: Attention in Emergencies

- **Expectation (E_Re4):** In a good MCH clinic, if a patient seems to have an urgent problem, they should receive immediate attention.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*

4. *Agree*
5. *Strongly Agree*

- **Perception (P_Re4):** Today, I felt that if I had an urgent problem, I would have received immediate attention.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

C4. ASSURANCE (Knowledge, Courtesy, and Ability to Inspire Trust)

Item A1: Knowledgeable Staff

- **Expectation (E_A1):** Staff in a good MCH clinic should be knowledgeable and able to answer your questions confidently.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_A1):** Today, the staff were knowledgeable and answered my questions confidently.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item A2: Courtesy & Respect

- **Expectation (E_A2):** Staff in a good MCH clinic should be consistently courteous and treat you with respect and dignity.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_A2):** Today, the staff I interacted with were courteous and treated me with respect and dignity.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*

4. *Agree*
5. *Strongly Agree*

Item A3: Safety & Trust

- **Expectation (E_A3):** You should feel safe and trust the staff in a good MCH clinic.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_A3):** Today, I felt safe and could trust the staff.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item A4: Clear Communication

- **Expectation (E_A4):** Staff in a good MCH clinic should explain procedures, medicines, and instructions in a way you can easily understand.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_A4):** Today, the staff explained procedures, medicines, and instructions in a way I could easily understand.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item A5: Confidentiality

- **Expectation (E_A5):** A good MCH clinic should keep your personal health information completely confidential.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*

5. *Strongly Agree*

- **Perception (P_A5):** Today, I believe my personal health information was kept confidential.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

C5. EMPATHY (Caring, Individualized Attention)

Item E1: Individual Attention

- **Expectation (E_E1):** A good MCH clinic should give you individual attention and care about your specific needs.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_E1):** Today, I received individual attention and the staff cared about my specific needs.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item E2: Convenient Hours

- **Expectation (E_E2):** A good MCH clinic should have operating hours convenient for all patients, including working women.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_E2):** The operating hours of this clinic are convenient for someone like me.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*

4. *Agree*
5. *Strongly Agree*

Item E3: Understanding Patient Needs

- **Expectation (E_E3):** Staff in a good MCH clinic should make an effort to understand the specific needs of their patients.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_E3):** Today, the staff made an effort to understand my specific needs.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item E4: Compassion

- **Expectation (E_E4):** Staff in a good MCH clinic should show compassion and be kind to patients.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*
- **Perception (P_E4):** Today, the staff showed compassion and were kind to me.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Item E5: Best Interests at Heart

- **Expectation (E_E5):** A good MCH clinic should have the patient's best interests at heart.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*

5. *Strongly Agree*

- **Perception (P_E5):** Today, I felt this clinic had my best interests at heart.
    1. *Strongly Disagree*
    2. *Disagree*
    3. *Neither Agree nor Disagree*
    4. *Agree*
    5. *Strongly Agree*

Section D: Satisfaction and Future Intentions

D1. Overall Satisfaction: Overall, how satisfied are you with the service you received today?

1. Very dissatisfied
2. Dissatisfied
3. Neutral
4. Satisfied
5. Very satisfied

D2. Likelihood to Recommend: How likely are you to recommend this health center to a friend or family member for MCH services?

1. Very unlikely
2. Unlikely
3. Neutral
4. Likely
5. Very likely

D3. Continuity Intentions:

D3-1 (For ANC clients): "How likely are you to return to this clinic for your next scheduled antenatal visit?" (5-point scale).

1. Very unlikely
2. Unlikely
3. Neutral
4. Likely
5. Very likely

D3-2 (For PNC/Immunization clients): "How likely are you to return to this clinic for your child's next vaccination or check-up?" (5-point scale).

1. Very unlikely
2. Unlikely
3. Neutral
4. Likely
5. Very likely

Note: *Gap Calculation and Analysis Variables and Gap Scores (P-E) will be calculated for each item, dimension (T, R, Re, A, E), and as an overall GAP5 score after data entry.*

7.1.2. QUALTITATIVE QUESTIONNAIRE

I. INFORMED CONSENT FORM

Title of Research: The Effect of Social and Behavior Change Communication (SBCC) on the Service Delivery Gap in Maternal and Child Health (MCH) within Public Health Centers of Gulele Sub-City, Addis Ababa, Ethiopia.

Principal Investigator: Medhane Zekarias Gebre:
Telephone No- +251966253564:
Email address: pinumed@gmail.com
Advisors Name: Saleamlak Molla (PhD)
Institution: Addis Ababa University

Introduction and Purpose:

Hello. My name is _____. I am conducting research as part of The Degree of Masters of Science in Marketing Management, at Addis Ababa University. You are invited to participate in a research study. The purpose of this study is to understand how health communication programs influence women's expectations and experiences of maternal and child health services in public health centers. Your participation will help improve the quality of care and communication strategies.

Procedures:

If you agree to participate, you will be asked to complete an interview/survey that will take about 20-30 minutes. The questions will cover your sources of health information, your views on what good care should be, your experience today at the clinic, and your satisfaction. With your separate permission, the conversation may be audio-recorded to ensure accuracy.

Risks and Discomforts:

There are no anticipated physical risks. Some questions might bring minor discomfort if you recall a negative experience. You may skip any question or stop the interview at any time without any penalty.

Benefits:

You may not benefit directly, but your responses will contribute to knowledge that may help improve MCH services and communication for women in your community.

Confidentiality:

Your participation is anonymous. Your name will not be on the survey. All information will be assigned a code number. Audio recordings will be stored securely, transcribed, and destroyed

after analysis. Only the research team will have access to the data, which will be used solely for this study and future academic publications.

Voluntary Participation and Right to Withdraw:

Your participation is completely voluntary. You may refuse to answer any question. You may withdraw from the study at any time without giving a reason and without any negative consequences to the services you receive at this or any other health facility.

Contact Information:

If you have any questions about the study, you can contact:

PI- Medhane Zekarias Gebre Phone: +251966253564 Email: pinumed@gmail.com

Supervisor Name: Saleamlak Molla (PhD)

Phone: +251912183604

Statement of Consent:

By signing (or providing verbal consent as witnessed below), you confirm that:

- You have read (or have had read to you) this consents form.
- Your questions have been answered.
- You voluntarily agree to participate in this study.

Participant's Signature (or Mark): _____ Date: _____

Participant's Printed Name: _____

For Illiterate Participants (Witnessed Verbal Consent):

I, the interviewer, have accurately read the consent form to the participant in a language they understand. The participant has voluntarily agreed to participate.

Interviewer's Signature: _____ Date: _____

Witness's Signature (if applicable): _____ Date: _____

II. GUIDE FOR QUALITATIVE DATA COLLECTION

Tool 2: In-Depth Interview (IDI) Guide for MCH Clients

Purpose: To explore the nuanced process of expectation formation, the emotional and cognitive impact of service gaps, and the perceived influence of SBCC.

- **Theme 1: SBCC and Expectation Formation:**
  - 1.1. Can you describe where you get information about what to expect when you come to the clinic?"
  - 1.2. How have messages from [radio/health workers] changed what you think a 'good' clinic visit should be like?" *(Probe: Tangibles, respect, waiting times).*
- **Theme 2: Experience of Gaps:**
  - 2.1. "Think about your visit today. Was there anything you expected that was different from what happened?"
  - 2.2. Tell me about a time your expectations were not met. How did that make you feel? What did you do?"

2.3. What is the most frustrating gap between what is promised and what is delivered here?"

- **Theme 3: Consequences and Coping:**
  - 3.1. How do these experiences affect your trust in this clinic?
  - 3.2. What would make you decide not to come back here for your next visit or for delivery?
  - 3.3. How do you and other women discuss these issues?

Tool 3: Key Informant Interview (KII) Guide for (Health Center Managers, Health officers, midwifes, and nurses)

Purpose: To understand the health system's perspective on service delivery capacity, awareness of client expectations, and challenges in meeting them.

- **Theme 1: Perception of Client Expectations:**
  - 1.1. What do you believe clients expect when they come for MCH services?
  - 1.2. "Have you noticed changes in what clients ask for or complain about in recent years? To what do you attribute this?"
- **Theme 2: Service Delivery Capacity and Gaps:**
  - 2.1. What are the biggest challenges in providing consistent, high-quality MCH services here? (Probe: staffing, supplies, infrastructure).
  - 2.2. How do you handle situations where client demands or expectations cannot be met due to system constraints?
- **Theme 3: Role of SBCC and Recommendations:**
  - 3.1. In your view, how do SBCC programs affect your work and client interactions?
  - 3.2. What could be done, either in communication or service delivery, to better align client expectations with what can be reliably provided?

7.2. Annex 3: DATA COLLECTOR TRAINING MANUAL

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

DEPARTMENT OF MARKETING MANAGEMENT

TRAINING MANUAL FOR DATA COLLECTORS (SUMMARY)

Project Title: The Effect of SBCC on the Service Delivery Gap in Maternal and Child Health within Public Health Facilities in Gulele Sub-City, Addis Ababa

Principal Investigator: Medhane Zekarias Gebre

Training Dates: April 2026

Data Collection Period: April – May 2026

Report Write-up: May 2026

1. INTRODUCTION AND TRAINING OVERVIEW

1.1. Purpose of the Training

This two-day training manual was developed to prepare data collectors for the successful implementation of the study titled "*The Effect of SBCC on the Service Delivery Gap in Maternal and Child Health within Public Health Facilities in Gulele Sub-City, Addis Ababa.*"

The training aimed to ensure that all data collectors:

- Understand the research objectives and methodology
- Are proficient in administering quantitative questionnaires
- Can conduct qualitative interviews effectively
- Understand ethical protocols and informed consent procedures
- Can maintain data quality and integrity throughout the data collection process

1.2. Training Objectives

By the end of this training, data collectors were able to:

1. Explain the purpose and significance of the study
2. Identify the target population and sampling procedures
3. Administer the quantitative client exit interview questionnaire correctly
4. Conduct in-depth interviews (IDIs) with mothers and key informant interviews (KIIs) with health workers
5. Obtain informed consent from all participants
6. Maintain confidentiality and ethical standards
7. Ensure data quality through proper recording and documentation
8. Manage and store data securely

Two days training given for data collectors

2. RESEARCH BACKGROUND AND OBJECTIVES

2.1. Background

Maternal and child health (MCH) service utilization remains a persistent challenge in Ethiopia. Despite substantial investments, the uptake of antenatal care (ANC), skilled birth attendance (SBA), and postnatal care (PNC) services remains below national targets. In urban areas like Gulele Sub-City, Addis Ababa, urban health extension programs have struggled with low community utilization due to access barriers and unmet needs.

Social and Behavior Change Communication (SBCC) interventions are intended to improve awareness, attitudes, and health-seeking behaviors related to MCH services. However, the effectiveness of these interventions depends largely on their ability to reach and engage intended audiences. This study examines how SBCC influences the service delivery gap in MCH services within public health facilities in Gulele Sub-City.

2.2. General Objective

To examine how Social and Behavioral Change Communication (SBCC) influenced Maternal and Child Health (MCH) service delivery gaps in Gulele Sub-City Public Health Centers by shaping client expectations, which in turn affected satisfaction and service utilization.

2.3. Specific Objectives

1. To assess the level of recall of SBCC messages including frequency, channels and types on MCH among clients in Gulele Sub-City Public Health Centers.

2. To determine clients' expectations for MCH services across SERVQUAL dimensions (Tangibles, Reliability, Responsiveness, Assurance, Empathy).
3. To identify the largest gaps between expectations and perceived MCH service quality, and pinpoint the worst performing dimensions.
4. To examine if SBCC exposure increased clients' expectations for MCH service quality.
5. To investigate the link between service quality gaps and clients' satisfaction and intent to continue using MCH services.

2.4. Research Questions

General Research Question:
How did Social and Behavior Change Communication (SBCC) influence the Maternal and Child Health (MCH) service delivery gap within mothers utilizing public health centers in Gulele Sub-City, Addis Ababa?

Specific Research Questions:

1. How much did MCH clients in Gulele Sub-City public health centers recall SBCC messages, including frequency, channels, and types?
2. What did clients expect from MCH services across quality aspects (Tangibles, Reliability, Responsiveness, Assurance, Empathy)?
3. What were the biggest gaps between client expectations and actual MCH service quality, and which areas were worst?
4. Did SBCC exposure raise clients' expectations for MCH service quality?
5. Did larger service quality gaps link to lower satisfaction and less intent to return for MCH services?

3. RESEARCH METHODOLOGY OVERVIEW

3.1. Research Design

This study employed a convergent parallel mixed-methods, cross-sectional design to comprehensively understand how SBCC influenced MCH service gaps by integrating quantitative and qualitative data.

- Quantitative component: Client exit interviews using structured questionnaires (n=160)
- Qualitative component: In-depth interviews (IDIs) with mothers (n=12-15) and key informant interviews (KIIs) with health workers (n=6-8)

3.2. Study Setting

The study was conducted in Gulele Sub-City, one of the 11 sub-cities in Addis Ababa, Ethiopia. The sub-city is served by a network of public health centers, which are the primary units for delivering the Health Extension Program at the urban level and essential MCH services.

3.3. Study Population

Target Population: All women of reproductive age (15-49 years) who are current or potential users of MCH services at public health centers in Gulele Sub-City.

Source Population: All women who utilized MCH services at Mayichew HC, Entoto Fana HC, Shiromeda HC, and Addisu Gebeya HC within the past three months (January-March, 2026).

3.4. Sample Size

Component	Sample Size	Method
Quantitative (Client Exit Interviews)	160	Systematic random sampling
Qualitative (IDIs)	12-15	Purposive sampling
Qualitative (KIIs)	6-8	Purposive sampling
Total	~175	

3.5. Sampling Techniques

Stage 1: Health Center Selection (Random Sampling)

- Four health centers randomly selected from all public health centers in Gulele Sub-City
- Selected centers: Mayichew HC, Entoto Fana HC, Shiromeda HC, Addisu Gebeya HC

Stage 2: Client Selection (Systematic Random Sampling)

- All MCH clients visiting the facility on selected days
- Sampling interval determined based on average daily client flow
- Inclusion: Women ≥18 years, attending MCH services, willing/able to consent, completed service encounter
- Exclusion: Critically ill, first-time visitors, non-Amharic speakers

Stage 3: Qualitative Participant Selection (Purposive Sampling)

- 12-15 IDI participants selected from the 160 quantitative respondents based on:

- High SBCC exposure/High expectations with negative gap
- Low SBCC exposure/Low expectations with positive gap
- Mixed experiences across different SERVQUAL dimensions

- 6-8 KII participants: MCH heads from all sampled health centers and sub-city health bureau heads

4. ETHICAL CONSIDERATIONS AND INFORMED CONSENT

4.1. Key Ethical Principles

All data collectors adhered to the following ethical principles:

Principle	Description
Respect for Persons	Treat all participants with dignity and respect. Acknowledge their autonomy and right to make informed decisions.
Beneficence	Maximize benefits and minimize harms. The study aims to benefit public health practice.
Justice	Ensure fair distribution of benefits and burdens. Participants are selected fairly.
Confidentiality	Protect participants' identity and personal information.
Voluntary Participation	Participation is entirely voluntary. Participants can withdraw at any time.

4.2. Informed Consent Process

Before beginning any interview, data collectors were required to:

1. Introduce themselves and explain the purpose of the study
2. Read the informed consent form to the participant in Amharic
3. Ensure understanding by asking if the participant has any questions
4. Explain voluntary participation – participants can refuse or withdraw at any time
5. Explain confidentiality – responses will be anonymous and confidential
6. Obtain verbal or written consent before proceeding
7. Record consent on the consent form (signature or mark)

Key Points Emphasized:

- Participation is voluntary and will not affect the quality of care received
- Participants may skip any question or stop the interview at any time
- All responses will be kept confidential and anonymous
- Only the research team will have access to the data
- Audio recordings (for qualitative interviews) will be stored securely and destroyed after transcription

4.3. Confidentiality Procedures

1. No names – Use unique identification codes only
2. Secure storage – All data (questionnaires, transcripts, audio files) stored securely
3. Password protection – Digital files stored on password-protected devices
4. Audio destruction – Audio recordings destroyed after transcription
5. Anonymized reporting – Published results contain no identifying information

5. DATA COLLECTION INSTRUMENTS

5.1. Quantitative Questionnaire Structure

Section	Content	Items
Section A	Socio-Demographic Information	A1-A10
Section B	SBCC Exposure and Recall Assessment	B1-B4
Section C	SERVQUAL Expectations and Perceptions (Paired items)	E_T1 to E_E5 (22 pairs)
Section D	Satisfaction and Future Intentions	D1-D3

SERVQUAL Dimensions Measured:

Dimension	Items
Tangibles	T1: Cleanliness, T2: Equipment & Materials, T3: Privacy, T4: Staff Appearance
Reliability	R1: Keeping Promises, R2: Accuracy of Records, R3: Availability of Supplies, R4: Correct Service

Responsiveness	Re1: Prompt Service, Re2: Willingness to Help, Re3: Readiness to Respond, Re4: Attention in Emergencies
Assurance	A1: Knowledgeable Staff, A2: Courtesy & Respect, A3: Safety & Trust, A4: Clear Communication, A5: Confidentiality
Empathy	E1: Individual Attention, E2: Convenient Hours, E3: Understanding Patient Needs, E4: Compassion, E5: Best Interests at Heart

5.2. Qualitative Interview Guides

In-Depth Interview (IDI) Themes for MCH Clients:

Theme	Focus
Theme 1	SBCC and Expectation Formation
Theme 2	Experience of Gaps
Theme 3	Consequences and Coping

Key Informant Interview (KII) Themes for Health Workers:

Theme	Focus
Theme 1	Perception of Client Expectations
Theme 2	Service Delivery Capacity and Gaps
Theme 3	Role of SBCC and Recommendations

6. DATA QUALITY ASSURANCE PROCEDURES

6.1. Pre-Data Collection

1. Tool Review: All data collectors familiarized themselves with every question in the questionnaire and interview guides.
2. Pretesting: All tools were pretested on a small population (5% of sample) outside the study area.
3. Role-playing: Data collectors practiced interviewing each other.

6.2. During Data Collection

1. Daily Debriefings: The PI and supervisors conducted daily field debriefings with data collectors.
2. Spot-checks: The PI conducted random spot-checks to observe interviews.
3. Back-checks: 5% of respondents were re-interviewed on key questions via phone to verify data accuracy and consistency.
4. Quality Control: Each data collector sent the first interview audio to the PI for cross-checking.

6.3. After Data Collection

1. Transcription: All qualitative interviews transcribed verbatim by professional transcribers.
2. Translation: Amharic transcripts translated to English by experienced translators.
3. Back-translation: Random checks performed to ensure accuracy of translation.
4. Data Entry: All quantitative data entered into COBO COLLECT software for validation.

7. DATA MANAGEMENT AND STORAGE

7.1. Data Handling Procedures

Data Type	Collection Tool	Storage Method
Quantitative	Paper questionnaires	Digital entry into COBO COLLECT; paper stored securely
Qualitative (Audio)	Audio recorder	Password-protected device; destroyed after transcription
Qualitative (Transcripts)	Word documents	Password-protected computer
Consent Forms	Paper forms	Locked filing cabinet separate from data

7.2. Confidentiality Procedures

1. Unique IDs: All participants assigned unique identification numbers (no names on questionnaires)
2. Secure Storage: All data stored in locked or password-protected locations
3. Access Control: Only research team members have access to data

4. Destruction: Audio recordings destroyed after transcription

8. FIELD LOGISTICS AND SAFETY

8.1. Health Center Access

Health Center	Location	Contact Person
Mayichew Health Center	Gulele Sub-City	Health Center Manager
Entoto Fana Health Center	Gulele Sub-City	Health Center Manager
Shiromeda Health Center	Gulele Sub-City	Health Center Manager
Addisu Gebeya Health Center	Gulele Sub-City	Health Center Manager

8.2. Participant Recruitment

1. Quantitative: Approach clients after their service encounter in the waiting area
2. Qualitative: Select from quantitative respondents based on purposive criteria
3. Key Informants: Schedule appointments in advance

8.3. Field Safety Guidelines

Safety Aspect	Guideline
Health and Safety	Carry hand sanitizer, masks; maintain physical distance when possible
Personal Safety	Work in pairs; avoid late-night data collection; inform supervisor of location
Participant Safety	Conduct interviews in private, comfortable settings; respect cultural norms
Emergency Procedures	Have emergency contact numbers; know nearest health facility

8.4. Field Equipment Checklist

- Printed questionnaires (sufficient copies)
- Informed consent forms
- Pens/pencils
- Clipboard

- Audio recorder and extra batteries
- Notebook for field notes
- Name badge/identification
- Phone with emergency contacts
- Hand sanitizer and masks
- Snacks and water
- Copy of training manual

9. DATA COLLECTION SCHEDULE

Table 1: Data Collection Schedule by Health Center

Health Center	Data Collection Dates	Quantitative Interviews (n)	Qualitative Interviews
Mayichew Health Center	April 13-17, 2026	39	IDIs: 3; KIIs: 1-2
Entoto Fana Health Center	April 20-24, 2026	38	IDIs: 3; KIIs: 1-2
Shiromeda Health Center	April 27-30, 2026	41	IDIs: 3; KIIs: 1-2
Addisu Gebeya Health Center	May 4-8, 2026	42	IDIs: 3; KIIs: 1-2
Total	April 13 – May 8, 2026	160	IDIs: 12-15; KIIs: 6-8

10. DATA COLLECTOR CODE OF CONDUCT

All data collectors agreed to:

1. Treat all participants with respect and dignity regardless of their background, beliefs, or circumstances.
2. Maintain confidentiality at all times and protect participant identities.

3. Obtain informed consent before every interview and respect the participant's right to withdraw.
4. Follow the protocol exactly and not deviate from the approved methodology.
5. Record data accurately and honestly without fabrication or falsification.
6. Report any problems or concerns to the PI immediately.
7. Maintain professional boundaries and avoid dual relationships with participants.
8. Be punctual and reliable in all field activities.
9. Attend all training sessions and debriefing meetings.
10. Represent the research project professionally at all times.

11. CONCLUSION

This training manual provided comprehensive guidance to all data collectors involved in the study. The two-day training ensured that all team members were adequately prepared to collect high-quality quantitative and qualitative data while adhering to strict ethical standards. The data collection was successfully completed between April 13 and May 8, 2026, across the four selected health centers in Gulele Sub-City. The quality assurance procedures implemented throughout the process ensured the reliability and validity of the data collected. The data analysis and report write-up were completed by the end of May 2026 as planned.

Prepared by:

Medhane Zekarias Gebre
Principal Investigator

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