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ANTENATAL CARE (ANC) SERVICES QUALITY ANALYSIS OF PREGNANT WOMEN'S SATISFACTION

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ABSTRACT
Puskesmas Bungus recorded high coverage for K1 (94.3%) and K4 (92.4%) visits; however, which dimensions of antenatal care (ANC) quality most influence pregnant women's satisfaction remain unclear. This study aimed to analyse pregnant women's satisfaction with ANC quality based on expectations versus actual experience across the SERVQUAL and SERPERF dimensions, and to identify the dimension most strongly influencing satisfaction at Puskesmas Bungus. A mixed-methods sequential explanatory design was employed. The quantitative sample comprised 113 pregnant women selected via accidental sampling, analysed using chi-square testing, multiple logistic regression, and Importance-Performance Analysis. Qualitative data were obtained from six informants through in-depth interviews and analysed using structured thematic analysis. Bivariate testing showed all five SERVQUAL dimensions were significantly associated with satisfaction ($p<0.05$). Gap analysis revealed tangibles as the only dimension with a negative gap (−0.282). Multivariate analysis identified tangibles as the most dominant predictor of satisfaction (OR=125.434, p=0.002). Qualitative findings confirmed constraints including prolonged waiting times (1–2 hours), limited physical facilities, inadequate privacy, and insufficient communication during the standard 10T examination. All SERVQUAL dimensions were significantly associated with satisfaction, with tangibles being the most dominant factor and the only unmet expectation. Strengthening physical facilities and queue efficiency should be prioritised.

Keywords: ANC quality; satisfaction; SERVPERF; SERVQUAL

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INTRODUCTION

Antenatal care (ANC) remains one of the most decisive interventions for lowering maternal and perinatal mortality worldwide. Women who skip recommended ANC visits face roughly four times the likelihood of maternal death and twice the likelihood of neonatal death compared with those who attend regularly, and inadequate antenatal monitoring has been implicated in more than a third of antepartum fetal losses (Ulfah, 2021). Regular ANC attendance has consistently been associated with reductions in maternal mortality of fifty to seventy percent, underscoring why coverage indicators such as first visit (K1) and fourth visit (K4) attendance remain central to national maternal health monitoring (Ulfah, 2021).

Padang City's own ANC coverage tells a cautionary story. In 2023, only 84.7% of pregnant women completed a K1 visit and 77.6% completed K4, both falling short of the 100% national target and representing a decline from the previous year (Laila et al., 2024). Against this backdrop, Puskesmas Bungus stands out: its K1 and K4 coverage reached 94.3% and 92.4% respectively in late 2023, figures considerably above the city average (Laila et al., 2024). This apparent success, however, raises an unanswered question rather than settling one. High attendance numbers describe how many women show up, not whether the care they receive once they arrive meets their expectations. Coverage statistics are silent on the lived experience of service quality, and a facility can post strong attendance figures while still falling short on dimensions of care that matter most to the women it serves (Muninjaya, 2021).

Patient satisfaction offers a more direct lens into that experience, since it functions both as a quality outcome in its own right and as a predictor of continued care-seeking behaviour (Tjiptono and Chandra, 2022). The SERVQUAL framework operationalises satisfaction through five service dimensions: reliability (the consistency and accuracy of service delivery), responsiveness (willingness and speed in addressing patient needs), assurance (competence, courtesy, and trustworthiness of providers), empathy (individualised attention and caring), and tangibles (the physical evidence of the service environment, including facilities, equipment, and provider appearance) (Parasuraman, Zeithaml and Berry, 1988). A substantial body of prior research links these five dimensions to patient satisfaction across diverse antenatal care settings, yet no study using this framework had previously been conducted specifically at Puskesmas Bungus (Sinulingga et al., 2024). That gap, paired with the unresolved tension between strong coverage figures and an unverified quality experience, motivated the present investigation. This study therefore aimed to analyze pregnant women's satisfaction with ANC service quality at Puskesmas Bungus by comparing their expectations against their actual experience across the five SERVQUAL dimensions, identifying which dimension most strongly predicts satisfaction, and explaining the underlying reasons for satisfaction or dissatisfaction through complementary qualitative inquiry.

METHOD

A mixed-methods sequential explanatory design was employed, beginning with a quantitative cross-sectional survey and followed by an in-depth qualitative phase intended to clarify and contextualise the quantitative findings. The study was conducted at Puskesmas Bungus, a community health centre serving six urban villages across a 100.78 km² catchment area on the southern coastal fringe of Padang City, between December 2025 and April 2026. The accessible population comprised all pregnant women receiving ANC services within the Puskesmas Bungus working area during the study period (N = 157). Sample size was calculated using the Slovin formula with a 5% margin of error, yielding a required minimum of 113 respondents; this exact number was achieved using accidental (consecutive) sampling of women presenting for ANC visits and willing to complete the questionnaire. Inclusion criteria required respondents to provide informed consent, to have completed at least two prior ANC visits, and to be able to understand and respond to the questionnaire independently. Women with medical conditions precluding participation or who submitted incomplete questionnaires were excluded. Satisfaction was measured with a 70-item SERVQUAL questionnaire (35 expectation items paired with 35 perceived-performance items) covering the five canonical dimensions, scored on a four-point Likert scale (Parasuraman, Zeithaml and Berry, 1988). Pearson correlation testing confirmed item validity (critical value 0.444), and Cronbach's alpha of 0.982 indicated excellent internal consistency (Sitoayu et al., 2020).

A gap score was computed for each dimension as the difference between mean perceived-performance and mean expectation scores; non-negative gaps were classified as "satisfied" and negative gaps as "dissatisfied." Service quality percentages were derived from perceived-performance scores relative to the maximum possible score, with an empirically derived cut-off of 86.06% separating "good" from "poor" quality ratings (Arikunto, 2013). Normality was assessed via Kolmogorov–Smirnov testing; given non-normal distributions, Wilcoxon Signed-Rank tests examined expectation–performance differences per dimension. Univariate analysis described frequency distributions; bivariate associations between each SERVQUAL dimension (and respondent characteristics) and satisfaction were tested using chi-square ($\alpha = 0.05$); multivariate logistic regression identified the dimension(s) most predictive of satisfaction after mutual adjustment. Importance-Performance Analysis (IPA) mapped all 35 items onto a Cartesian quadrant matrix using grand-mean crosshairs (expectation = 3.23; performance = 3.44) to visually prioritise improvement targets.

Six informants were purposively selected following the quantitative phase: three pregnant women (primary informants, each with at least two prior ANC visits), two ANC-providing midwives with a

minimum of two years' service experience (key informants), and the head of Puskesmas Bungus (supporting informant, offering managerial perspective). Sample adequacy was guided by the principle of data saturation rather than a predetermined count. In-depth, face-to-face interviews lasting 10–30 minutes were audio-recorded with consent and transcribed verbatim; informant identities were anonymised using codes (IF.1–IF.6). Data were analysed using structured thematic analysis through four sequential stages: verbatim transcription, inductive coding, clustering of codes into themes and sub-themes, and interpretive synthesis. Source triangulation across the three informant groups, combined with method triangulation against the quantitative gap-analysis findings, was used to validate emergent themes (Sinulingga et al., 2024). Ethical clearance was obtained from the Faculty of Medicine, Universitas Andalas, and written informed consent was secured from all participants.

RESULT

Table 1.
Distribution of Respondent Characteristics at Puskesmas Bungus

Characteristic	f	%
Maternal age		
<20 or >35 years	14	12,4
20–35 years	99	87,6
Education level		
Primary/Junior secondary	34	30,1
Senior secondary/Higher education	79	69,9
Employment status		
Not employed	96	85
Employed	17	15
Nasional health insurance category		
Subsidiesed (PBI)	87	77
Non Subsidised (Non PBI)	26	23
Distance from home to health care		
<5 km	36	31,9
>5 km	77	68,1

Based on table 1, most respondents (87.6%) were within the reproductively optimal age range of 20–35 years, were not formally employed (85.0%), held senior-secondary or higher education (69.9%), were enrolled as subsidised BPJS beneficiaries (77.0%), and lived more than 5 km from the facility (68.1%).

Table 2.
Distribution of Perceived ANC Service Quality by SERVQUAL Dimension

Dimension ANC Quality	f	%
Reliability		
Poor	20	17,7
Good	93	82,3
Responsiveness		
Poor	19	16,8
Good	94	83,2
Assurance		
Poor	14	12,4
Good	99	87,6
Empathy		
Poor	10	8,8
Good	103	91,2
Tangibles		
Poor	74	65,5
Good	39	34,5

Based on table 2, empathy received the highest "good" rating (91.2%), followed by assurance (87.6%) and reliability (82.3%). Tangibles was rated lowest, with only 34.5% of respondents rating it "good" and a majority (65.5%) rating it “poor”.

Table 3.
Distribution of Pregnant Women's Satisfaction by SERVQUAL Dimension

Dimension Satisfaction	f	%
Reliability		
Dissatisfied	42	37,2
Satisfied	71	62,8
Responsiveness		
Dissatisfied	38	33,6
Satisfied	75	66,4
Assurance		
Disatisfied	30	26,5
Satified	83	73,5
Empathy		
Disatisfied	27	23,9
Satisfied	86	76,1
Tangibles		
Disatisfied	76	67,3
Satisfied	37	32,7

Based on table 3, empathy yielded the highest satisfaction rate (76.1%), while tangibles yielded the lowest (32.7%), with most respondents (67.3%) reporting dissatisfaction on this dimension.

Table 4.
Association Between Overall ANC Service Quality and Satisfaction

		Pregnant Women's Satisfied			Total	p-v*alue*
			Dissatisfied	Satisfied		
ANC Quality	Poor	N	19	27	46	0.019
		%	41.3	58.7	100	
	Good	N	14	53	67	
		%	20.9	79.1	100	

Based on table 4, overall ANC quality was significantly associated with satisfaction (p = 0.019): women rating overall quality as good were considerably more likely to report satisfaction (79.1%) than those rating it poor (58.7%).

Table 5.
Association by Reliability and Satisfaction

Pregnant Women's Satisfied					Total		
Reliability Quality	Dissatisfied		Satisfied				*p-value*
	f	%	f	%	f	%	
Poor	19	34.5	36	65.5	55	100	0,002
Good	6	10.3	52	89.7	58	100	

Table 6.
Association by Responsiveness and Satisfaction

Pregnant Women's Satisfied					Total		
Responsiveness Quality	Dissatisfied		Satisfied				*p-value*
	f	%	f	%	f	%	
Poor	22	44.9	27	55.1	49	100	0,003
Good	12	18.8	52	81.3	64	100	

Table 7.
Association by Assurance and Satisfaction

Assurance Quality	Pregnant Women's Satisfied				Total		
	Dissatisfied		Satisfied				*p-value*
	f	%	f	%	f	%	
Poor	14	32.6	29	67.4	43	100	<0,001
Good	1	1.4	69	98.6	70	100	

Table 8.
Association by Empathy and Satisfaction

Empathy Quality	Pregnant Women's Satisfied				Total		*p-value*
	Dissatisfied		Satisfied				
	f	%	f	%	f	%	
Poor	11	25.6	32	74.4	43	100	
Good	7	10.0	63	90.0	70	100	0,028

Table 9.
Association by Tangibles and Satisfaction

Tangibles Quality	Pregnant Women's Satisfied				Total		*p-value*
	Dissatisfied		Satisfied				
	f	%	f	%	f	%	
Poor	47	100	0	0	47	100	
Good	12	18.2	54	81.8	66	100	<0,001

Based on tables 5 to 9 is all five SERVQUAL dimensions showed statistically significant associations with overall satisfaction ($p < 0.05$). Notably, every respondent who rated tangibles as poor (100%) reported dissatisfaction the strongest bivariate signal among all dimensions tested.

Table 10.
Gap Analysis Between Expectation and Perceived Performance Across SERVQUAL Dimensions

Dimension	*Mean* Expectation	*Mean* Performance	*Gap*	Quality	Sig.	Conclusion
Reliability	3.25	3.57	0.314	89	0.002	Significant –Satisfied
Responsiveness	3.23	3.45	0.223	86	0.003	Significant –Satisfied
Assurance	3.21	3.61	0.410	90	<0.001	Significant –Satisfied
Empathy	3.20	3.63	0.428	91	0.028	Significant –Satisfied
Tangible	3.27	2.98	0.282	75	<0.001	Significant –Dissatisfied

Table 11.
Association between Respondent Characteristics and Satisfaction

			Satisfied		Total	P value
			Dissatisfied	Satisfed		
Maternal Age	<20 or >35 years	f	4	10	14	0.956
		%	28.6	71.4	100	
	20-35 years	f	29	70	99	
		%	29.3	70.7	100	
Education	Primary/Junior secondary	f	5	29	34	0.026
		%	14.7	85.3	100	
	Primary/Junior secondary	f	28	51	79	
		%	35.4	64.6	100	
Employment	Non Employed	f	18	78	96	<0.001
		%	18.7	81.3	100	
	Employed	f	15	2	17	
		%	88.2	11.8	100	
BPJS Category	Subsidiesed (PBI)	f	8	79	87	<0.001
		%	9.2	90.8	100	
	Subsidiesed (PBI)	f	25	1	26	
		%	96.2	3.8	100	
Distance to Facility	<5 km	f	17	19	36	0.004
		%	47.2	52.8	100	
	>5 km	f	16	61	77	
		%	20.8	79.2	100	

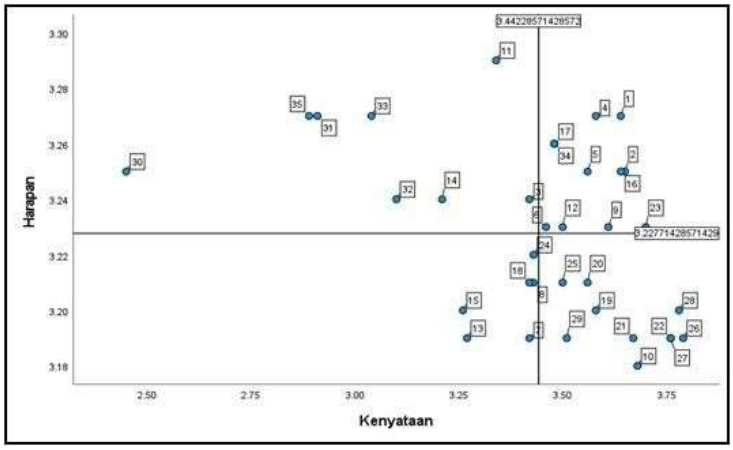
Based on table 10. Four dimensions empathy, assurance, reliability, and responsiveness recorded positive gaps and quality percentages exceeding 86%, indicating that actual performance exceeded expectations. Tangibles was the sole dimension with a negative gap, signalling that the physical service environment fell short of what pregnant women expected.

Based on tabel 11. Maternal age showed no association with satisfaction ($p = 0.956$). Education, employment status, BPJS category, and distance to the facility were each significantly associated with satisfaction ($p < 0.05$); notably, unemployed women and PBI beneficiaries reported markedly higher satisfaction than their employed and non-PBI counterparts.

Table 12.
Multiple Logistic Regression of SERVQUAL Dimensions on Satisfaction

Variabel	B	SE	Wald (z)	p-value	Exp (B)	Remark
Reliability	0.604	0.930	0.422	0.516	1.829	Not Significant
Responsiveness	4.270	1.453	8.632	0.003	71.549	Significant
Assurance	3.797	1.344	7.982	0.005	44.579	Significant
Empathy	3.384	1.201	7.939	0.005	29.477	Significant
Tangibles	4.832	1.574	9.422	0.002	125.434	Significant

Based on table 12. After mutual adjustment, tangibles emerged as the single strongest predictor of satisfaction (OR = 125.434, $p = 0.002$): women who rated the physical environment as good were over 125 times more likely to report satisfaction than those who rated it poor. Responsiveness, assurance and empathy remained independently significant, while reliability lost significance in the adjusted model ($p = 0.516$).



Picture 1. Importance Performance Analysis (IPA)

Based on picture 1. Grand-mean crosshairs were set at 3.23 (expectation) and 3.44 (performance). All four tangibles items concerning the waiting and examination environment, waiting-room comfort (3.25/2.45), cleanliness of the examination room (3.27/2.91), tidiness of equipment (3.24/3.10 and 3.27/3.04), and room lighting (3.27/2.89), fell in Quadrant I ("concentrate here"), the zone of highest expectation paired with lowest performance. By contrast, items concerning provider courtesy, honesty, and individualised attention under assurance and empathy (e.g., honesty: 3.19/3.67; courtesy: 3.19/3.76; friendliness: 3.19/3.79) clustered in Quadrant IV ("possible overkill"), indicating performance already exceeding what respondents considered essential.

Qualitative Findings

Thematic analysis of the six interview transcripts converged on three dominant themes, each independently corroborated across the three informant groups (pregnant women, midwives, and the health center head).

Theme 1 Reliability: Pregnant women generally experienced the standard ten-component (10T) ANC examination protocol as being delivered consistently and thoroughly, a perception corroborated by midwives' reports of adherence to Health Office guidelines and by managerial oversight confirming general compliance (Kemenkes RI, 2020). However, a communication gap emerged: explanations accompanying specific procedures, particularly mid-upper-arm circumference (MUAC) measurement and laboratory testing, were often omitted, especially on high-volume days. Midwives attributed this to caseload pressure, while the facility head acknowledged the gap and described plans to introduce waiting-room information materials. Consistency of care quality was also reported to fluctuate with patient volume, peaking around 30 patients on the busiest days (Mondays and Tuesdays).

Theme 2: Responsiveness. Waiting time emerged as the single most consistently voiced complaint, with women reporting average waits of one to two hours between arrival and consultation; one informant described leaving without being examined due to the physical strain of prolonged waiting. Midwives linked this delay to a dual workload, simultaneously managing ANC consultations and other public-health programmers, rather than to clinical incompetence. Notably, once seen, women described prompt and competent clinical attention, including efficient triage of urgent complaints such as headache or dizziness. This dichotomy suggests the underlying issue lies in queue management and staffing allocation rather than provider skill.

Theme 3: Tangibles. Three sub-themes converged here. First, examination-room conditions were described as cramped and lacking privacy by both patients and midwives alike, with the facility head confirming that renovation had been proposed to the District Health Office but remained constrained by budget. Second, waiting-area facilities were reported as inadequate, with insufficient seating forcing some women to stand and poor ventilation compounding discomfort; the facility head noted incremental but still-insufficient efforts to add seating. Third, geographic accessibility posed a genuine barrier for women living in outlying villages within the centre's 100.78 km² catchment, who depended on others for transportation and consequently sometimes missed or consolidated visits; outreach measures (mobile midwife visits and community health posts) existed but had not yet achieved full coverage (Muninjaya, 2021).

DISCUSSION

Quantitative findings. The pattern observed at Puskesmas Bungus, in which four service dimensions exceed expectations while a single dimension lags conspicuously behind, points to a facility whose interpersonal and procedural care has matured faster than its physical infrastructure. Empathy and assurance achieved the strongest satisfaction outcomes, consistent with the broader literature suggesting that, in resource-constrained primary care settings, provider attitude and perceived competence often compensate for material limitations in shaping patient satisfaction (Tjiptono and Chandra, 2022). The loss of significance for reliability in the multivariate model, despite a significant bivariate association, suggests its influence on satisfaction is substantially mediated by the other dimensions, particularly tangibles and responsiveness, once these are accounted for simultaneously, rather than acting as an independent driver. The dominance of tangibles, with an adjusted odds ratio more than twice that of the next-largest predictor, echoes a recurring theme in primary-care quality research: physical infrastructure functions as a highly visible, easily benchmarked cue against which patients judge a facility, even when softer relational dimensions are performing well (Muninjaya, 2021). The significant associations between satisfaction and education, employment, insurance category, and distance likely reflect differing reference points and tolerance thresholds: more highly educated or formally employed women, and non-subsidized insurance holders, may hold higher baseline expectations or face greater opportunity costs from waiting, lowering their threshold for dissatisfaction relative to unemployed, subsidized

beneficiaries. The IPA results lend further precision to this picture by isolating exactly which physical elements warrant the most urgent managerial attention, distinguishing them from interpersonal items where current performance already exceeds patient expectations (Sinulingga et al., 2024).

Qualitative findings. The interview data does more than confirm the quantitative gap; it explains its mechanism. The contradiction between long waiting times and swift, competent care once consultation begins indicates that the responsiveness deficit is structural and managerial, rooted in staff dual-tasking and queue design, rather than a reflection of clinical skill or attitude. Similarly, the reliability theme reveals that the procedural backbone of care (the 10T protocol) is intact, but that communication and patient education erode under volume pressure, a nuance the quantitative gap score alone could not have surfaced (Kemenkes RI, 2020). The tangible theme, triangulated identically by patients, providers, and management alike, confirms that the negative quantitative gap is not a matter of differing perception but a shared, accurate assessment of genuine infrastructural limitation, constrained chiefly by budgetary rather than administrative barriers. Together, the two data strands converge on a single, well-corroborated conclusion: physical infrastructure, not provider competence or attitude, constitutes the principal unmet need in ANC service quality at Puskesmas Bungus (Muninjaya, 2021).

CONCLUSION

All five SERVQUAL dimensions were significantly associated with pregnant women's satisfaction with ANC services at Puskesmas Bungus. Tangibles was the only dimension where perceived performance fell short of expectation, and multivariate analysis confirmed it as the most dominant predictor of satisfaction overall, considerably ahead of responsiveness, assurance, and empathy, while reliability's effect was attenuated once other dimensions were accounted for. Qualitative findings corroborated and explained these patterns, attributing dissatisfaction chiefly to prolonged waiting times, constrained examination and waiting-room space, insufficient privacy, and uneven communication during the standard 10T examination, all rooted in staffing and infrastructure constraints rather than clinical competence. Strengthening physical facilities and streamlining queue management should therefore be treated as the foremost priorities for improving pregnant women's satisfaction with antenatal care at this facility.

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