Original Research Article

Knowledge and Attitude of Pregnant Women towards Buscopan in the Management of Labour in Abia State University Teaching Hospital, Aba

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Abstract

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Buscopan (Hyoscine-N-butylbromide) is a widely used antispasmodic agent in obstetric practice for alleviating cervical spasm and facilitating cervical dilation during labour. However, knowledge and attitudes regarding its use among pregnant women remain underexplored in Nigeria. This study sought to assess the knowledge and attitude of pregnant women towards the use of Buscopan in the management of labour at Abia State University Teaching Hospital (ABSUTH), Aba, Nigeria. A descriptive cross-sectional survey was conducted among 422 pregnant women attending antenatal clinics at ABSUTH. Participants were systematically selected and data were collected using a structured, pretested, interviewer-administered questionnaire. Descriptive statistics were used to summarize socio-demographic characteristics, knowledge, and attitudes. Inferential statistics including Chi-square and Spearman's rank correlation were applied to examine associations. Significance was set at p < 0.05. Out of 422 respondents, 65.9% had heard of Buscopan, but only 34.6% correctly identified its use in aiding cervical dilation. While 54.3% acknowledged its ability to reduce cervical spasm, only 33.4% were aware of its side effects. Attitudinally, 75.1% agreed or strongly agreed that Buscopan is helpful during labour, yet 50.2% expressed concerns about potential harm. A strong positive correlation was observed between knowledge and attitude scores (ρ = 0.61, p < 0.001). Educational level, parity, and source of information were significantly associated with knowledge and attitudes towards Buscopan (p < 0.05). Although awareness of Buscopan is moderately high among pregnant women in ABSUTH, significant gaps in specific knowledge and mixed attitudes exist. Improved antenatal education and communication by healthcare providers are recommended to enhance informed decision-making and acceptance.

Keywords: Attitude, Buscopan, Hyoscine-N-butylbromide, Knowledge, Labour management, Pregnant women

INTRODUCTION

Hyoscine butylbromide, also known as scopolamine butylbromide and commonly marketed as Buscopan, is a quaternary ammonium anticholinergic medication. It acts by antagonizing muscarinic receptors in smooth muscle, leading to muscle relaxation, notably in gastrointestinal, biliary, urinary tracts, and the uterus (Zhang et al., 2016).

While primarily prescribed for abdominal cramps and renal/biliary colic, its pharmacologic properties have been repurposed in obstetrics to facilitate cervical dilation during active labour (Nagi et al., 2014).

The drug is characterized by a rapid onset (<20 min) and limited central nervous system penetration due to its

quaternary structure, reducing the likelihood of CNS side effects (Nagi et al., 2014). Although official prescribing information advises caution during pregnancy due to limited reproductive toxicity data, it is considered safe with no documented adverse maternal or neonatal effects in several clinical trials (SmPC, 2024).

A growing body of randomized and controlled trials has investigated the application of Buscopan in labour. For example, A double-blind RCT in Egypt showed a significant reduction in the first stage of labour duration (186 vs. 268 min; $p < .001$), without influencing delivery method or Apgar scores (Tupkar et al., 2019).A trial in Jamaica reported a 31.7% decrease in mean active labour time (156 vs. 228 min; $p = .001$) among 129 term women, without negative maternal or fetal outcomes (Samuels et al., 2007). An Indian RCT using suppositories documented a significant reduction in the first stage (123.9 ± 68.9 vs. 368.1 ± 133.0 min) among 200 women, with no increase in operative delivery (Sirohiwal et al., 2005).A recent Indian study (2024) reported substantial reductions in labour time—primigravida: 170.3 vs. 216.7 min; multigravida: 120.9 vs. 153.3 min—with no adverse events (Changede and Tank, 2025).

A systematic review and meta-analysis of six studies ($n = 1,310$) confirmed that rectal Buscopan use significantly shortened both the active (by ~194 min) and second stages of labour and increased cervical dilation rates (MD −193.9 min; CI −229.2 to −158.6; $p < .001$) (Larki et al., 2024).Conversely, the BUSCLAB trial—a double-blind RCT targeting nulliparous women with slow labour—did not find statistically significant differences in total labour duration after administration of 20 mg IV Buscopan, although no serious events were observed (Gaudernack et al., 2024). This suggests its efficacy may vary depending on patient subgroups and dosing regimens.

Existing literature extensively addresses clinical outcomes but neglects maternal knowledge, perceptions, and acceptance of Buscopan, especially in sub-Saharan African settings such as Nigeria. Understanding pregnant women's awareness, beliefs, and attitudes is critical to promoting informed consent, improving utilization, and integrating Buscopan into labour management protocols.

ABSUTH, located in Abia State, Nigeria, is a 692-bed tertiary institution affiliated with Abia State University, offering comprehensive obstetric services. Despite recent accreditation reinstatement, empirical evidence of Buscopan use in labour or maternal perceptions at this facility remains unavailable, indicating a significant gap in localized evidence.

While global evidence supports Buscopan's capacity to enhance labour progress safely, few studies have assessed its utilization in Nigeria or examined pregnant women's knowledge and attitudes. Bridging this knowledge gap is vital for gauging patient awareness and receptivity to Buscopan in labour, identifying educational and systemic barriers to its adoption, as well as informing clinical guidelines and policy development for safer, evidence-based obstetric care in the Nigerian context. This study, therefore, sought to assess the knowledge and attitude of pregnant women towards the use of Buscopan in the management of labour at Abia State University Teaching Hospital (ABSUTH), Aba, Nigeria.

MATERIALS AND METHODS

Study Design

This study employed a descriptive cross-sectional survey design to assess the knowledge and attitude towards the use of Buscopan (Hyoscine-N-butylbromide) in the management of labour among pregnant women attending antenatal clinics at Abia State University Teaching Hospital (ABSUTH), Aba, Abia State, Nigeria. The design was selected to allow for the collection of relevant data from a target population at a single point in time to determine their level of knowledge and perception (Ekeleme et al., 2023).

Study Area

The study was conducted at the Antenatal Clinic (ANC) of Abia State University Teaching Hospital (ABSUTH), which is a tertiary healthcare institution located in Aba, the commercial hub of Abia State, South-East Nigeria. ABSUTH serves as a referral center for both public and private health facilities within and outside the state. The antenatal clinic operates daily and provides obstetric care, including health education on pregnancy, labour, delivery, and postnatal care. It caters to a diverse population comprising urban and peri-urban pregnant women.

Study Population

The study population comprised pregnant women attending antenatal care services at ABSUTH during the study period. The inclusion criteria included:
- Pregnant women in any trimester.
- Attendees of the ANC clinic within the data collection timeframe.
- Individuals who provided informed consent to participate.

Exclusion criteria included:
- Pregnant women with cognitive impairments that hinder comprehension of the questionnaire.
- Individuals who declined to participate or withdrew consent at any stage.

Sample Size Determination

The sample size was calculated based on Cochran's formula for population proportion estimation, following the methodology described by Ezebuiro *et al.* (2025):

$$n = \frac{Z^2(Pq)}{e^2}$$

The formula components are defined as follows:
- *n* represents the minimum required sample size.
- *Z* is set at 1.96, corresponding to a 95% confidence level.
- *P* estimated proportion of awareness/acceptance (assumed to be 50% = 0.5 due to lack of data and for maximum variability)
- *e* signifies the allowable margin of error, fixed at 5% (0.05).
- q = 1 - p

P = 50% = 0.5
q = 1 − 0.5
= 0.479
$$n = \frac{(1.96)^2(0.5 \times 0.5)}{(0.05)^2}$$
$$n = \frac{3.8416 \times (0.25)}{0.0025}$$
$$n = \frac{0.9604}{0.0025} = 384.16$$

Although the initially calculated minimum sample size was 384, it was increased to 422 to accommodate an anticipated 10% rate of non-response.

Sampling Technique

A systematic random sampling technique was employed. Using the ANC register as a sampling frame, every 5th pregnant woman attending ANC on clinic days was approached for participation. The sampling interval (5) was determined by dividing the average daily ANC attendance by the number of participants needed per day.

Instrument for Data Collection

A structured, pretested, interviewer-administered questionnaire was the main instrument for data collection. The questionnaire was developed based on literature and expert input, and it consisted of four sections:
1. **Section A:** Socio-demographic characteristics (age, marital status, educational level, parity, gestational age, occupation, etc.)
2. **Section B:** Knowledge of Buscopan usage – accessed via multiple-choice and true/false questions concerning indications, mechanism of action, route of administration, benefits, side effects, and previous experience or awareness.
3. **Section C:** Attitude towards Buscopan – assessed using a 5-point Likert scale (Strongly Agree to Strongly Disagree) to determine perceptions and acceptance of the drug's use during labour.
4. **Section D:** Source of information about Buscopan (e.g., healthcare workers, antenatal education, internet, peers).

Validity and Reliability of the Instrument

The questionnaire was subjected to content and face validity by experts in obstetrics, public health, and health education. A pilot study involving 20 pregnant women attending antenatal care at a nearby general hospital (excluded from the main study) was conducted to assess the reliability and clarity of the instrument. The Cronbach's alpha coefficient for the attitude scale was found to be 0.78, indicating good internal consistency.

Data Collection Procedure

Data collection was carried out over a four-week period by trained research assistants (nurses and midwives not affiliated with ABSUTH) who administered the questionnaires during antenatal clinic hours. Each respondent was adequately informed about the study, and verbal and written consent was obtained before participation. Privacy and confidentiality were ensured throughout the process. Respondents were allowed to ask questions, and clarifications were provided where necessary to ensure proper understanding.

Ethical Considerations

Participation in the study was voluntary, and informed consent was obtained from all participants. The confidentiality of responses was strictly maintained. Data collected were anonymized and stored securely for analysis purposes only.

Data Analysis

Data obtained from the questionnaires were entered into IBM SPSS version 25.0 for analysis. Descriptive statistics such as frequencies and percentageswere used to summarize the socio-demographic characteristics and levels of knowledge and attitude. Inferential statistics, including Chi-square tests, were employed to examine associations between socio-demographic variables and levels of knowledge and attitude. A p-value of less than 0.05 was considered statistically significant.

Table 1. Socio-Demographic Characteristics

Variable	Frequency (n = 422)	Percentage (%)
Age (in years):		
Less than 20 years	37	8.8%
20–24 years	83	19.7%
25–29 years	96	22.7%
30–34 years	78	18.5%
35–39 years	67	15.9%
40 years and above	61	14.5%
Marital Status:		
Single	54	12.8%
Married	321	76.1%
Divorced	23	5.5%
Widowed	24	5.7%
Highest Educational Level Attained:		
No Formal Education	29	6.9%
Primary School	71	16.8%
Secondary School	142	33.6%
Tertiary Education	180	42.7%
Occupation:		
Unemployed	63	14.9%
Civil servant	91	21.6%
Trader	108	25.6%
Artisan	67	15.9%
Private sector	71	16.8%
Others	22	5.2%
Religion:		
Christianity	368	87.2%
Islam	34	8.1%
Traditional	14	3.3%
Others	6	1.4%
Gravidity		
1	123	29.1%
2–3	184	43.6%
4 and above	115	27.3%
Parity:		
0	97	23.0%
1–2	186	44.1%
3 and above	139	32.9%
Gestational Age:		
< 20 weeks	43	10.2
20–28 weeks	117	27.7
29–36 weeks	162	38.4
37 and above	100	23.7
Attended ANC this pregnancy?		
Yes	394	93.4
No	28	6.6

RESULTS

As shown in Table 1, most respondents were aged between 25–29 years (22.7%) and 20–24 years (19.7%), with a predominant marital status of married (76.1%). A significant proportion had tertiary education (42.7%), and the majority were Christians (87.2%). In terms of reproductive history, 43.6% had gravidity of 2–3, and 44.1% had parity of 1–2. Most were in their third trimester (29–36 weeks: 38.4%) and had attended antenatal care (ANC) during their current pregnancy (93.4%).

From Table 2a, 65.9% had heard of Buscopan, but specific knowledge was varied. While 34.6% correctly identified its role in cervical dilation, others held misconceptions—e.g., 13.7% thought it stops bleeding. Administration routes were mostly misidentified, with only

Table 2a. Knowledge of Buscopan Usage

Variable	Frequency (n = 422)	Percentage (%)
Have you heard of Buscopan before?		
Yes	278	65.9
No	144	34.1
What is the main use of Buscopan during labour?		
To relieve labour pains	101	23.9
To help cervical dilation	146	34.6
To stop bleeding	58	13.7
To make contractions stronger	39	9.2
Don't know	78	18.5
How is Buscopan commonly administered?		
Orally	56	13.3
Intravenously	109	25.8
Intramuscularly	132	31.3
Rectally	42	10.0
Don't know	83	19.6
Benefits of Buscopan (multiple responses)		
Speeds up labour	198	46.9
Reduces cervical spasm	229	54.3
Prevents infection	44	10.4
Improves maternal comfort	181	42.9
Don't know	77	18.3
Ever received Buscopan before?		
Yes	163	38.6
No	259	61.4
Know any side effects?		
Yes	141	33.4
No	281	66.6

Table 2b. True/False Statements on Knowledge of Buscopan Usage

Statement	True	False	Don't Know
a. Buscopan is a pain-relieving drug.	207 (49.1%)	113 (26.8%)	102 (24.2%)
b. It relaxes smooth muscles in the cervix.	189 (44.8%)	78 (18.5%)	155 (36.7%)
c. It can delay labour.	62 (14.7%)	236 (55.9%)	124 (29.4%)
d. All pregnant women should receive it.	49 (11.6%)	267 (63.3%)	106 (25.1%)
e. It has no side effects at all.	33 (7.8%)	301 (71.3%)	88 (20.9%)
f. Only doctors can administer it.	217 (51.4%)	104 (24.6%)	101 (23.9%)

31.3% knowing it is given intramuscularly. A substantial number understood its benefits like reducing cervical spasm (54.3%), yet only 33.4% were aware of its side effects. Table 2b showed notable misconceptions: only 49.1% knew Buscopan is a pain-relieving drug, and just 44.8% understood it relaxes cervical muscles. Alarmingly, 36.7% were unsure about this function. Most respondents correctly disagreed that all pregnant women should receive Buscopan (63.3%) and that it has no side effects (71.3%).

According to Table 3, the majority perceived Buscopan positively, with 75.1% agreeing it is helpful during labour and 67.8% comfortable receiving it. Additionally, 61.2% would recommend it, and 75.6% expressed trust in healthcare providers. Nonetheless,

47.9% had concerns about side effects, and 49.8% preferred natural labour. As reported in Table 4, health professionals were the primary information source (35.3%), followed by friends/relatives (20.9%) and antenatal classes (17.5%). Notably, only 50% felt they received adequate education about the drug, though 77.7% expressed willingness to learn more.

Table 5 demonstrated statistically significant positive correlations between knowledge and attitude scores ($\rho = 0.61$; $p < 0.001$), education level and knowledge ($\rho = 0.42$; $p = 0.001$), parity and attitude ($\rho = 0.28$; $p = 0.013$), source of information and knowledge ($\rho = 0.46$; $p < 0.001$). Age, however, was not significantly associated with attitude ($\rho = -0.07$; $p = 0.144$). Chi-square analyses in Table 6 reinforced these findings: Knowledge significantly

Table 3. Attitude towards Buscopan Use During Labour

Statement	SA	A	N	D	SD
1. Helpful in labour	138 (32.7%)	179 (42.4%)	47 (11.1%)	34 (8.1%)	24 (5.7%)
2. Comfortable being given	122 (28.9%)	164 (38.9%)	58 (13.7%)	47 (11.1%)	31 (7.3%)
3. Recommend to others	97 (23.0%)	161 (38.2%)	83 (19.7%)	49 (11.6%)	32 (7.6%)
4. Fear of harm to baby	94 (22.3%)	108 (25.6%)	66 (15.6%)	96 (22.7%)	58 (13.8%)
5. Concern about side effects	106 (25.1%)	132 (31.3%)	61 (14.5%)	74 (17.5%)	49 (11.6%)
6. Trust healthcare providers	141 (33.4%)	178 (42.2%)	53 (12.6%)	29 (6.9%)	21 (5.0%)
7. Prefer natural labour	89 (21.1%)	121 (28.7%)	72 (17.1%)	85 (20.1%)	55 (13.0%)
8. Past experience was good	73 (17.3%)	106 (25.1%)	112 (26.5%)	69 (16.4%)	62 (14.7%)

Legend: SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree

Table 4. Source of Information about Buscopan

Variable	Frequency	Percentage (%)
Where did you first hear about it?		
Doctor/Nurse/Midwife	149	35.3
Antenatal classes	74	17.5
Friends/Relatives	88	20.9
Internet/Social media	49	11.6
Radio/TV	31	7.3
Never heard of it	31	7.3
Received adequate drug education?		
Yes	211	50.0
No	211	50.0
Want to learn more about Buscopan?		
Yes	328	77.7
No	94	22.3

Table 5. Correlation Analysis (Spearman's Rank)

Variables Correlated	Correlation Coefficient (ρ)	p-value	Significance
Knowledge score & Attitude score	0.61	<0.001	Significant
Education level & Knowledge score	0.42	0.001	Significant
Parity & Attitude towards Buscopan	0.28	0.013	Significant
Source of Info (e.g., HCP) & Knowledge score	0.46	<0.001	Significant
Age & Attitude score	-0.07	0.144	Not significant

p-value less than 0.05 are considered significant

Table 6. Chi-square Analysis

Variable Pair	χ^2 value	df	p-value	Significance
Knowledge vs Education Level	31.77	4	<0.001	Significant
Attitude vs Parity	18.29	4	0.001	Significant
Knowledge vs Past Buscopan Use	22.14	1	<0.001	Significant
Knowledge vs Source of Info	26.75	5	<0.001	Significant
Attitude vs ANC Attendance	3.76	1	0.052	Borderline

p-value less than 0.05 are considered significant

varied with education level ($\chi^2 = 31.77$; $p < 0.001$) and source of information ($\chi^2 = 26.75$; $p < 0.001$). Attitude was significantly associated with parity ($\chi^2 = 18.29$; $p = 0.001$), and knowledge was higher among those with prior Buscopan use ($\chi^2 = 22.14$; $p < 0.001$). The relationship between attitude and ANC attendance was borderline significant ($\chi^2 = 3.76$; $p = 0.052$)

DISCUSSION

Buscopan (Hyoscine-N-butylbromide) is widely used in obstetrics to relieve cervical spasm and facilitate labour progression. However, pregnant women's knowledge and attitudes toward its use remain underexplored, especially in low-resource settings like Nigeria. This current study assessed the knowledge and attitude of pregnant women towards Buscopan use in labour at Abia State University Teaching Hospital (ABSUTH), Aba, Nigeria.

The socio-demographic profile of participants in this study aligns with trends documented elsewhere in Nigeria and other low- and middle-income countries. Predominantly married (76.1%) women aged between 25 and 34 years reflect the typical reproductive age bracket found in such settings. Educational attainment was also notable, with 42.7% of respondents having tertiary education, mirroring findings from Umuahia where over 60% of participants had university-level education (Obi and Anosike, 2023). This demographic landscape underscores a literate and engaged maternity cohort.

With respect to knowledge of Buscopan, 65.9% of respondents had heard of it, although only one-third correctly identified its role in cervical dilation. This moderate awareness level is comparable to broader findings on drug use during pregnancy in Nigeria, where approximately 35.5% of respondents demonstrated good knowledge, despite generally positive attitudes and practices (Obi and Anosike, 2023). However, the precision in distinguishing Buscopan's mechanism was lower than global averages for pharmacological pain-relief awareness, where knowledge typically surpasses 85% (Pietrzak et al., 2023).

In terms of administration routes, only 31.3% recognized intramuscular injection as common, with 19.6% uncertain. This uncertainty is consistent with the limited formal education regarding such medications; approximately half of the participants reported not receiving adequate drug education. The identification of side effects was also poor (66.6% unaware), suggesting a critical need for enhanced antenatal counseling.

The correlation and chi-square analyses of this current study demonstrated strong associations between knowledge and both education level ($\rho = 0.42$, $p = 0.001$) and source of information ($\rho = 0.46$, $p < 0.001$), corroborating global evidence linking higher education and reliable information sources to improved medication knowledge(Ezebuiro et al., 2024). Parity was significantly related to attitude toward Buscopan ($\chi^2 = 18.29$, $p = 0.001$); multiparous women may be more positively predisposed based on prior experience, as noted in other pain-management studies from Ethiopia and India (Onyemereze et al., 2024).

The attitude findings were generally favorable: over 70% agreed that Buscopan is helpful, were comfortable with receiving it, and trusted healthcare providers, reflecting the positive attitude scores (SA + A) across

several parameters. However, concerns persisted: up to 48% feared potential harm to the baby or side effects, echoing sentiments expressed by healthcare workers in Tanzania who viewed labor pain as "natural" and often refrained from pharmacological relief. This ambivalence underscores the tension between trust and apprehension, even within a generally positive framework.

Your investigation of sources shows reliance on healthcare providers (35.3%) and antenatal classes (17.5%), although friends, social media, and radio also contributed. This aligns with Polish and Saudi Arabian studies highlighting the Internet, antenatal classes, and informal networks as primary knowledge platforms (Pietrzak et al., 2023). Notably, half of respondents expressed a desire to learn more, finding fertile ground for health education interventions via formal ANC sessions.

Regarding clinical efficacy and safety, the literature supports both intravenous and rectal Buscopan use in labor. A randomized trial in nulliparas found hyoscine-N-butylbromide significantly shortened the active phase from approximately 393 to 325 minutes, without adverse maternal or neonatal outcomes (Akiseku et al., 2021). Similarly, a study using 10 mg rectal suppositories demonstrated a reduction in active labor duration from 5 hours 44 minutes to 3 hours 10 minutes in primigravidas, again with no untoward effects (Tupkar et al., 2019). Systematic reviews and meta-analyses—including Cochrane assessments—have affirmed its efficacy in shortening first-stage labor by around 55 minutes, albeit acknowledging the need for larger, rigorous trials (Sørbye et al., 2022).

Nevertheless, some conflicting evidence exists. A 2018 randomized Nigerian study reported no significant reduction in active labor duration between the Buscopan and placebo groups, highlighting inconclusive outcomes in spontaneous labor contexts (Tupkar et al., 2019). This variability may reflect differences in settings, dosing, labor progress thresholds, and study design.Thefindings of moderate knowledge, generally positive attitudes tempered by concerns, and strong correlation between education and source of information align well with prior research. They highlight clear gaps in awareness, especially regarding side effects and correct usage routes and reinforce the need for targeted educational interventions.

CONCLUSION

This study mirrors a broader pattern in which pregnant women exhibit positive attitudes toward pharmacological labor aids like Buscopan, yet hold only modest knowledge levels shaped by education and information source. The effectiveness and safety of hyoscine butylbromide in shortening labor's first stage are well-supported, although results vary by context. Essential

next steps include enhancing antenatal drug education, addressing safety concerns, and expanding local research to resolve conflicting clinical evidence.

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