



**RISK FACTORS ASSOCIATED WITH BACTERIAL VAGINOSIS
AMONG ATTENDEES OF A TERTIARY HEALTHCARE
FACILITY IN NORTH INDIA**

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- Bacterial vaginosis (BV) common cause of vaginal dysbiosis among reproductive-age women
- May cause malodorous vaginal discharge, vaginal itching and burning, lower abdomen pain
However, if remain untreated may lead to increased risk of STIs, PID, adverse obstetric outcomes
- As many as 50% of the patients diagnosed with BV are asymptomatic
- Several factors associated with the syndrome:
 - Unprotected sex
 - Number of lifetime sexual partners
 - Hygiene practices such as douching and menstrual protection pads
 - Use of intrauterine devices (IUDs) is associated with increased risk of BV,
 - Condoms and oral contraceptive pills have been shown to have a protective effect
- Precise etiology of BV remains elusive

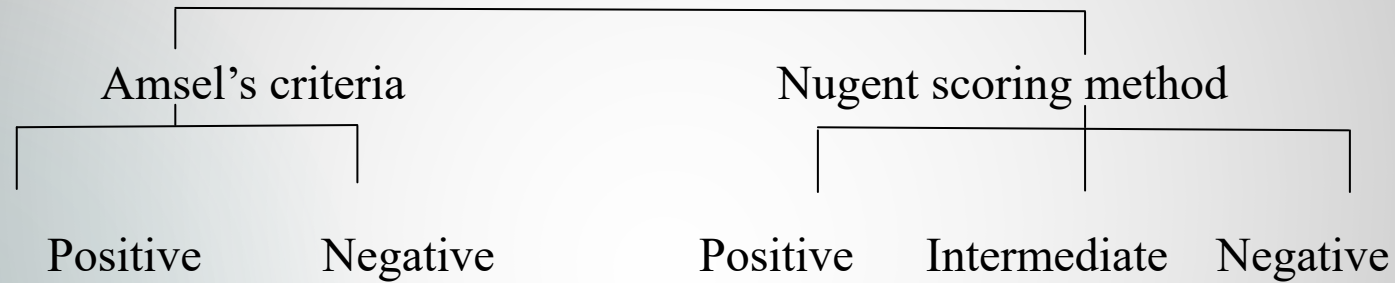
- In India, the prevalence in non-pregnant pre-menopausal women has been reported from 19% to 44.8%.
- Identification of potential risk factors specific for different populations needed

Tertiary Referral Hospital

Dermatology and Venereology & Obstetrics and Gynaecology outpatient departments

283 women screened (18-45 years)

a. Assessment for Bacterial vaginosis



b. Assessment of risk factors/ correlates

- Demographics
- Sexual history
- Obstetric and Gynaecological History
- Menstrual history

THE IMPACT OF DEMOGRAPHICS ON BV POSITIVITY AMONG ATTENDEES

Demographic history	Total (%) N= 283	BV positive N=69	BV negative N=214	p-value
Age (years)				
≤ 20	8 (2.8)	1 (1.5)	7 (3.3)	0.55
21-30	127 (44.9)	35 (50.7)	92 (43.0)	
31-40	103 (36.4)	21 (30.4)	82 (38.3)	
≥41	45 (15.9)	12 (17.4)	33 (15.0)	
Treatment history	67 (23.7)	18 (26.1)	49 (22.9)	0.64

THE IMPACT OF MARITAL HISTORY ON BV POSITIVITY AMONG ATTENDEES

Marital history	Total (%) N= 283	BV positive N=69	BV negative N=214	p-value
Unmarried	5 (1.8)	2 (2.9)	3 (1.4)	0.69
Married	269 (95.1)	65 (94.2)	204 (95.3)	
Widowed/Separated	9 (3.2)	2 (2.9)	7 (3.3)	
Duration of marriage (years)	99/278 (35.6)	24/67 (35.8)	75/211 (35.6)	0.10
≤5	59/278 (21.2)	14/67 (20.9)	45/211 (21.3)	
6-10	120/278 (43.2)	29 /67(43.3)	91/211 (43.1)	
>10				

THE IMPACT OF GYNECOLOGICAL HISTORY ON BV POSITIVITY AMONG ATTENDEES

Obstetric and gynaecological history	Total (%) N= 283	BV positive N=69	BV negative N=214	p-value
Gravidity				
1-2	141 (49.8)	24 (17.0)	117 (83.0)	0.78
>2	59 (20.8)	20 (33.9)	39 (66.1)	
<u>History of infertility</u>	62/279 (22.2)	22/67 (32.8)	40/211 (19.0)	0.02
Primary Infertility	44/62 (71.0)	14/22 (63.6)	30/40 (75.0)	0.35
Secondary Infertility	18/62 (29.0)	8/22 (36.4)	10/40 (25.0)	0.35

THE IMPACT OF MENSTRUAL HISTORY ON BV POSITIVITY AMONG ATTENDEES

Menstrual history	Total (%) N= 283	BV positive N=69	BV negative N=214	p-value
Menstrual history				
Pre-menopausal	273 (96.5)	68 (98.6)	205 (96.3)	0.46
Post-menopausal	10 (3.5)	1 (1.5)	9 (4.2)	

THE IMPACT OF SEXUAL BEHAVIOUR ON BV POSITIVITY AMONG ATTENDEES

Sexual history	Total (%) N= 283	BV positive N=69	BV negative N=214	p-value
Sexually active (Preceding 3 months)	274 (96.8)	66 (95.7)	203 (94.9)	1.00
No. of lifetime partners				
1	278 (98.2)	67 (97.1)	211 (99.1)	0.25
2	4 (1.8)	2 (2.9)	2 (0.9)	
Frequency of intercourse (episodes/month)				
≤4	2/269 (0.7)	2/66 (3.1)	0/203 (0)	
5-8	64/269 (23.8)	14/66 (21.2)	50/203 (24.6)	0.39
9-15	107/269 (39.8)	22/66 (33.3)	85/203 (41.9)	
16-20	96/269 (35.7)	28/66 (42.4)	68/203 (33.5)	

THE IMPACT OF CONTRACEPTION USE ON BV POSITIVITY AMONG ATTENDEES

Sexual history	Total (%) N= 283	BV positive N=69	BV negative N=214	p-value
Contraception	132 (46.6)	27 (39.1)	105 (49.3)	0.14
Tubal Ligation	55 (19.4)	12 (17.4)	43 (20.2)	0.61
Condom	49 (17.3)	6 (8.7)	43 (20.2)	0.03
Intra-uterine device (IUD)	17 (6.0)	5 (7.2)	12 (5.6)	0.57
Oral-contraceptive	10 (3.5)	4 (5.8)	6 (2.8)	0.27
Vasectomy	1 (0.4)	0 (0)	1 (0.5)	1.00
Injectable-contraceptive	1 (0.4)	0 (0)	1 (0.5)	1.00
Recent intercourse (Preceding 72 hours)	80/282 (28.3)	25/68 (36.8)	56/214 (26.2)	0.10
Recent unprotected intercourse	69/80 (86.3)	25/25 (100)	44/56 (80.4)	0.01

THE IMPACT OF HYGIENE PRACTICES ON BV POSITIVITY AMONG ATTENDEES

Menstrual protection & Hygiene practices	Total (%) N= 283	BV positive N=69	BV negative N=214	p-value
Reusable cloth pads	29/273 (10.6)	11/67 (16.4)	18/206 (8.7)	0.07
Disposable pads	244/273 (89.4)	56/67 (83.6)	188/206 (91.3)	
Vaginal washes	44 (15.5)	8 (11.6)	36 (16.8)	0.30

LOGISTIC REGRESSION FOR SELECT CORRELATES ($p < 0.1$) OF BV

Correlates	Variable	Odds ratio (95%CI)	p-value
Demographic	Infertility	2.02 (1.09 – 3.73)	0.02
Behavioural	Condom	0.38 (0.15 - 0.93)	0.03
	Recent unprotected intercourse	1.00 (0.35 – 0.93)	0.02
	Disposable sanitary pads	0.45 (0.20 – 0.98)	0.05

CONCLUSION

- Age, marital status, duration of marriage did not effect positivity
- Infertility ($p=0.02$) and recent unprotected sexual exposure ($p=0.02$) were strongly associated with BV.
- Frequency of intercourse did not increase the chances of BV
- Regular use of condoms during intercourse negative ($p=0.03$) associated with BV

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