

Maximising recruitment and retention in a longitudinal study of Bacterial Vaginosis

Dana S. Forcey^{1,2}, Sandra M. Walker^{1,2}, Lenka A. Vodstrcil^{1,2}, Christopher K. Fairley^{1,3}, Jade E. Bilardi^{1,3}, Matthew Law⁴, Jane S. Hocking², Katherine A. Fethers¹, Susan Petersen¹, Clare Bellhouse¹, Marcus Y. Chen^{1,3}, Catriona S. Bradshaw^{1,2,3}

¹ Melbourne Sexual Health Centre, ² The University of Melbourne School of Population and Global Health, ³ Monash University Central Clinical School, ⁴ The Kirby Institute, University of New South Wales

BACKGROUND

Many risk factors for bacterial vaginosis (BV) have been described, but the mechanisms by which these influence the vaginal microbiota are not well understood. This is especially true among women who have sex with women (WSW) who have a burden of BV that far outweighs that of their heterosexual counterparts in Western countries.¹

Longitudinal studies are required to further elucidate the temporal relationship between behaviours and changes in the vaginal microbiota. Women with female partners are an important population in which to study BV to allow investigation of transmission dynamics.

We conducted a longitudinal prospective cohort study examining factors influencing the vaginal microbiota. We report factors associated with participation and attrition over the 24-month study period that may inform future cohort studies of sexual health and disease.

METHODS

The Women on Women's Health (WOW) study² investigated prevalent and incident BV among Australian WSW. Women were recruited from diverse community locations – festivals in 5 Australian states and territories, through the internet, social media, an event night, a GP clinic, an STI clinic and widespread community advertising.

We recruited women who were:

- 18-55 years of age
- Pre-menopausal
- Had a female sexual partner in last 18 months
- Not pregnant
- Not transgender

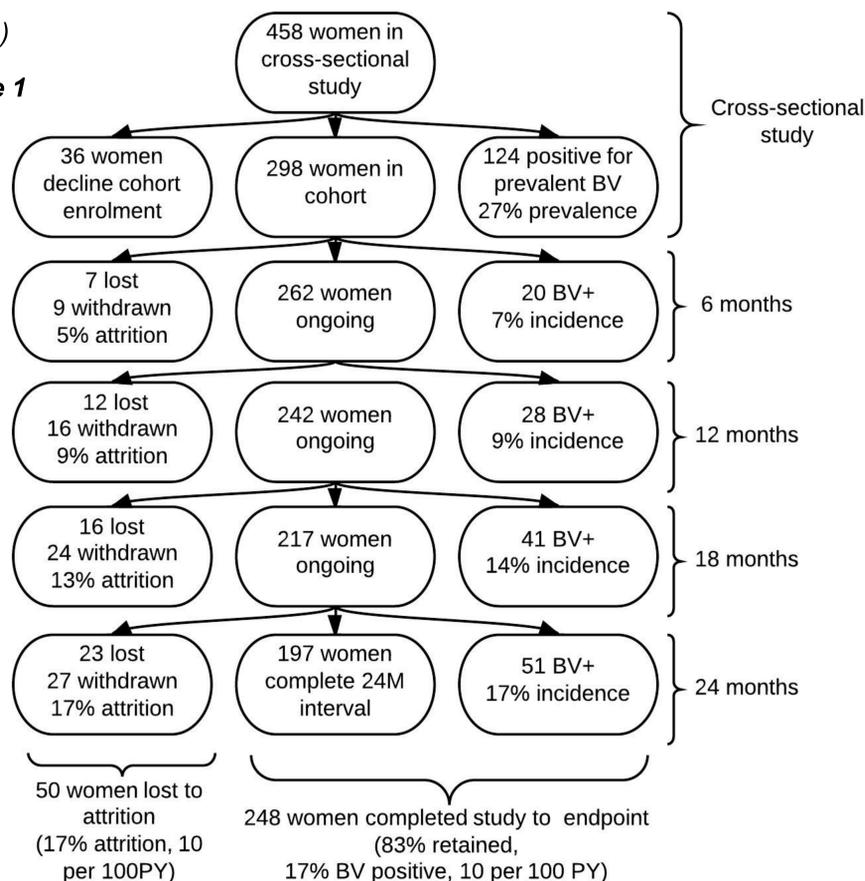
Those negative for prevalent BV by Nugent method³ were offered enrolment in a 24-month cohort study, involving 3-monthly self-collected vaginal samples and behavioural questionnaires. We used logistic regression and Cox regression to investigate factors associated with retention and attrition from the cohort, respectively.

RESULTS

The cohort enrolled 298 women from the cross-sectional study (89%, 95%CI 85,92). 51 developed BV (9.7 per 100 PY) and 27 withdrew and 23 were lost to follow-up.

(Figure 1)

Figure 1



Declining enrolment in the cohort was positively associated with: (Figure 2)

- Prior BV symptoms (aOR 3.42, 95%CI 1.16, 10.10)
- No education beyond secondary school (aOR 2.72, 95%CI 1.09, 6.83)
- Prior genital warts (aOR 2.72, 95%CI 1.14, 6.46)
- Smoking (aOR 2.44, 95%CI 1.13, 5.27)

CONCLUSION

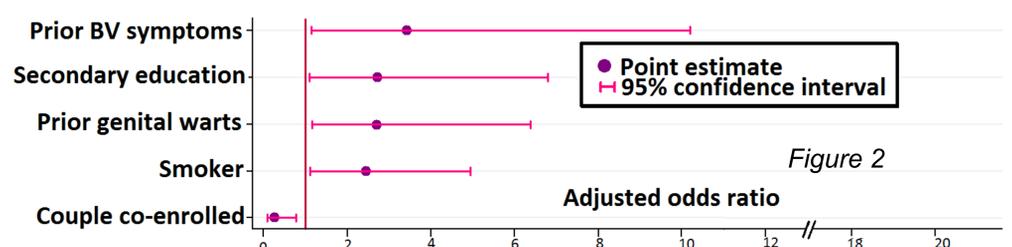
Cohort studies can investigate the temporal relationship between risk factors and disease acquisition but risk high rates of attrition, threatening validity

The WOW Health Study had novel recruitment methods recruited 89% of eligible women and intensive follow-up that retained 83% of participants.

- Enrolment was less likely in women who were: smokers, less educated, had a prior history of BV or genital warts.
- Co-enrolment with a female partner increased participation in the cohort.
- Attrition was highest among younger women and those with male partners.
- Further work is required to ensure these groups represented in future longitudinal studies.

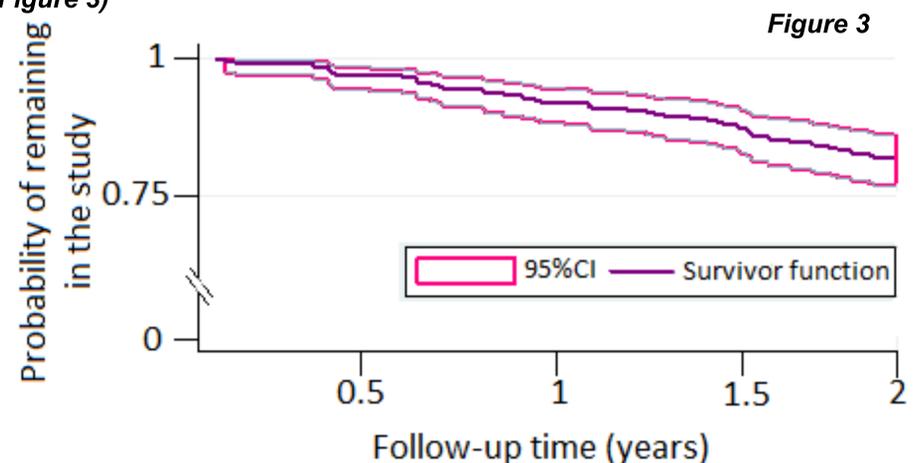
Enrolling in the cohort was positively associated with: (Figure 2)

- A partner's co-enrolment (aOR 3.73, 95%CI 1.43, 9.70)



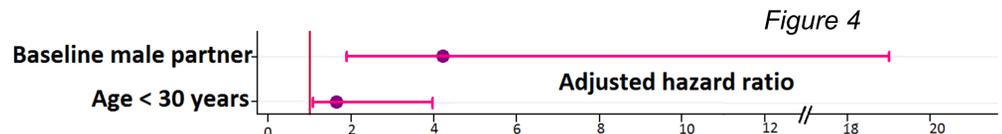
17% of participants were lost to attrition, with a rate of 9.6 per 100PY:

(Figure 3)



Attrition was positively associated with: (Figure 4)

- A male partner at baseline (aHR 6.12, 95%CI 1.99, 18.82)
- Younger age, <30 years (aHR 2.15, 95%CI 1.13, 4.10)



REFERENCES

- Smart S I et al. Social and sexual risk factors for bacterial vaginosis. *Sexually transmitted infections*. 2004;80(1):58-62
- Bradshaw CS, et al. The Influence of Behaviors and Relationships on the Vaginal Microbiota of Women and Their Female Partners: The WOW Health Study. *J Infect Dis*. 2013;29:29
- Nugent RP, et al. Reliability of diagnosing bacterial vaginosis is improved by a standardized method of gram stain interpretation. *J Clin Microbiol*. 1991;29(2):297-301

