

## A Call to Standardize the Definition and Method of Assessing Women for Vaginal Discharge Syndrome in Pregnancy

TO THE EDITOR—We read with interest the findings by Fennell et al [1] on the associations between syndromic management of vaginal discharge syndrome (VDS) and adverse birth outcomes among pregnant women in Botswana. In the context of the high VDS prevalence (31%) recorded in their cohort, we propose 2 reporting considerations henceforth by (1) highlighting the importance of a standardized VDS definition and (2) providing insight on methodological challenges that may be associated with classifying VDS, especially in regard to reported and observed VDS.

First, we propose that the clinical case definition for VDS should be specified in all research studies, and preferably be standardized. Many countries employ national adaptations [2] of the VDS algorithms recommended by the World Health Organization (WHO) [3]. As such, VDS definitions differ between countries and may induce substantial variability in VDS frequency across research studies: South Africa, 14%–18% [4, 5]; Uganda, 17% [6]; Kenya, 20% [7]; and Botswana, 31% [1].

In Botswana, national guidelines broaden the WHO VDS case definition from “complaints of abnormal vaginal discharge or vulvar itching/burning” to include both “dysuria” and “dyspareunia” [8]; this may have contributed to the higher VDS prevalence of 31% noted by Fennell et al. In contrast, although South Africa had previously used a similar broad description of VDS to Botswana’s [9], South African guidelines have now streamlined the VDS definition to only include “abnormal vaginal discharge” as the primary presentation.

Other guidelines, such as in Uganda [10, 11] or Kenya [12], may take a more middle-ground approach of incorporating only 1 additional primary symptom, that is, “abnormal vaginal discharge or vulval itch.”

To demonstrate the influence of VDS definition on VDS frequency reported, we analyzed cross-sectional data from our ongoing hybrid-effectiveness trial of the impact of diagnostic strategies for sexually transmitted infections (STIs) on adverse birth outcomes among pregnant women in Eastern Cape, South Africa [13]. We evaluated VDS frequency based on different combinations of symptoms reported in 1627 women recruited at their first antenatal care visit (<27 weeks’ gestation) from March 2021 to January 2023. As Figure 1A conveys, VDS frequency increases with each symptom added to the definition. In sum, the reported VDS frequency in this cohort would increase considerably if it were defined using a combination of 4 symptoms ( $n = 204$  [12%]) compared to a single symptom—abnormal vaginal discharge ( $n = 146$  [9%]).

Second, we propose that the method of assessing women for VDS should be specified in research studies. While some studies may only collect verbal history of VDS, provider-initiated VDS screening may be performed in others. This is important to distinguish, as the proportion of women who self-report abnormal vaginal discharge may not be consistent with those in whom abnormal vaginal discharge is observed on clinical examination. Notably, while it is often clinical practice in syndromic management settings to only examine women who report symptoms, many clinical trials can afford to perform a genital examination in all enrolled women. Thus, the method of VDS assessment would also influence the VDS frequency that is recorded. Gray et al [6], for instance,

collected only reported VDS history from pregnant women in their Ugandan cohort, while authors in a recent Kenyan study assessed VDS as a composite of either reported or observed vaginal discharge [7].

To better illustrate this methodological challenge, we show that the total frequency of reported (9%) versus observed vaginal discharge (14%) differed substantially in our cohort of 1627 pregnant women (Figure 1B). Additionally, if a composite classification of “reported and/or observed vaginal discharge” was considered in our study, then that overall VDS frequency would remarkably increase from 14% to 23%. These data further highlight a relatively small group of women ( $n = 7$  [0.4%]) in whom vaginal discharge was reported but not observed, suggesting that verbal history was nearly consistent with clinical examination. In contrast, vaginal discharge was observed but not reported in a larger group of women ( $n = 83$  [5%]) who would otherwise be missed in clinical settings where VDS management flowcharts start with reported symptoms. Clinical examination may not always be feasible. Also, the syndromic management of STIs in women with VDS tends toward antibiotic overtreatment [2]. However, the evidence from multiple observational studies [1, 7, 14], including that by Fennell et al [1], has suggested harmful associations between abnormal vaginal discharge and adverse outcomes such as preterm birth, thus making a case for examining all pregnant women where feasible.

In conclusion, we call for standardized reporting of VDS in research studies. We underscore that the VDS construct is central to investigations into adverse birth outcomes and surmise, overall, that the way VDS is defined and assessed in pregnancy influences prevalence and effect estimates. Ultimately, we propose

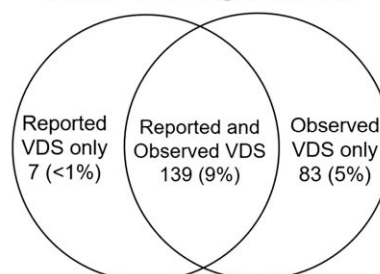
A

Total N = 1627 Pregnant women

VDS Definition	No. (%)
Abnormal vaginal discharge	146 (9)
Abnormal vaginal discharge and/or vulvovaginal itch	182 (11)
Abnormal vaginal discharge and/or vulvovaginal itch, and/or dysuria	202 (12)
Abnormal vaginal discharge and/or vulvovaginal itch, and/or dysuria, and/or dyspareunia	204 (12)

B

Total N = 1627 Pregnant women



Total Reported: 146 (9%) Total Observed: 222 (14%)

**Figure 1.** Frequency and distribution of vaginal discharge syndrome (VDS) among 1627 pregnant women in South Africa enrolled at first antenatal care visit (gestational age <27 weeks) between March 2021 and January 2023. VDS frequencies differ based on definition used (A) and methodology used (B). "Reported" indicates self-reported history of current abnormal vaginal discharge; "observed" indicates abnormal vaginal discharge observed on speculum examination.

that research studies should specify the setting-specific definition used and, where feasible, report on both self-reported and clinically observed VDS data points.

## Notes

**Patient consent.** The study was approved by the Human Research Ethics Committee at the University of Cape Town (reference number 676/2019). Written consent was obtained from all study participants.

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