The Asia Pacific Journal of Anthropology

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rtap20

Making Sense of Serodiscordance: Pathways and Aftermaths of HIV Testing among Couples with Mixed HIV Status in Papua New Guinea

Asha Persson, Angela Kelly-Hanku, Agnes Mek, Elke Mitchell, Richard Nake Trumb, Heather Worth & Stephen Bell

To cite this article: Asha Persson, Angela Kelly-Hanku, Agnes Mek, Elke Mitchell, Richard Nake Trumb, Heather Worth & Stephen Bell (2021) Making Sense of Serodiscordance: Pathways and Aftermaths of HIV Testing among Couples with Mixed HIV Status in Papua New Guinea, The Asia Pacific Journal of Anthropology, 22:4, 298-314, DOI: 10.1080/14442213.2021.1942184

To link to this article: https://doi.org/10.1080/14442213.2021.1942184

Published online: 13 Jul 2021.

Submit your article to this journal

Article views: 106

View related articles

View Crossmark data

Citing articles: 1 View citing articles

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=rtap20

The Asia Pacific Journal of Anthropology, 2021
Vol. 22, No. 4, pp. 298–314, https://doi.org/10.1080/14442213.2021.1942184

Making Sense of Serodiscordance: Pathways and Aftermaths of HIV Testing among Couples with Mixed HIV Status in Papua New Guinea

Asha Persson *, Angela Kelly-Hanku, Agnes Mek, Elke Mitchell, Richard Nake Trumb, Heather Worth and Stephen Bell

The World Health Organization has emphasised the importance of HIV testing for couples as part of a global strategy to support the HIV prevention needs of couples, particularly those whose test results are 'serodiscordant' (one partner is diagnosed HIV-positive, the other HIV-negative). Studies have focused on motivations and barriers to testing together as a couple. However, this provides only partial insights into a bigger and often more complex story. In addition, little is known about whether HIV-negative partners continue to test for HIV. We focus on the preludes and aftermaths to HIV testing that can make up the serodiscordant chain of events, drawing on qualitative interviews with people in serodiscordant relationships in Papua New Guinea (PNG). Inspired by sociological/anthropological conceptualisations of diagnosis as relational and composite, our analysis seeks to trace the unfolding events before and after couples discover their mixed HIV status and, by so doing, generate initial insights into the contexts of HIV testing and serodiscordance in PNG. We argue that to understand HIV testing practices among

* Asha Persson is affiliated with Centre for Social Research in Health, UNSW Sydney, Australia. Email: a.persson@unsw.edu.au. Angela Kelly-Hanku is affiliated with Sexual and Reproductive Health Unit, Papua New Guinea Institute of Medical Research, Goroka, Papua New Guinea and The Kirby Institute for Infection and Immunity in Society, UNSW Sydney, Australia. Agnes Mek is affiliated with Sexual and Reproductive Health Unit, Papua New Guinea Institute of Medical Research, Goroka, Papua New Guinea. Elke Mitchell is affiliated with The Kirby Institute for Infection and Immunity in Society, UNSW Sydney, Australia. Richard Nake Trumb is affiliated with Sexual and Reproductive Health Unit, Papua New Guinea Institute of Medical Research, Goroka, Papua New Guinea. Heather Worth is affiliated with School of Public Health and Community Medicine, UNSW Sydney, Australia. Stephen Bell is affiliated with Centre for Social Research in Health, UNSW Sydney, Australia and Poche Centre for Indigenous Health at The University of Queensland.

© 2021 The Australian National University

couples, we need to understand the localised and syncretised meanings they bring to their serostatus.

Keywords: Papua New Guinea; HIV Testing; Serostatus Meanings; Serodiscordant Couples; Qualitative

Introduction

> I never knew that [my wife] was living with the HIV virus. After six months of our marriage, the signs and symptoms started to show … Her relatives brought her to the clinic … and the doctor confirmed that she had contracted HIV … The disease popped out from nowhere and we were so surprised.

David is a 55-year-old man from Mount Hagen in Papua New Guinea (PNG). Like David and his wife Maryanne, many couples around the world are unaware of their partner's or their own HIV status. In 2012, the World Health Organization (WHO) (2012a) emphasised the importance of implementing HIV testing programmes for couples as part of a global strategy to support the health and HIV prevention needs of couples whose test results turn out to be 'serodiscordant', that is, when one partner is diagnosed HIV-positive but not the other. WHO (2012b) estimated that half of all people with HIV globally who are in a long-term relationship have an HIV-negative partner. In short, serodiscordant couples exist wherever the HIV epidemic exists, including in PNG where our research is located. Yet serodiscordant couples are mentioned only fleetingly in the country's *National HIV Strategy 2018–2022* (NACS 2018) and have received limited programmatic attention.

Despite the increasing availability of HIV treatment, which is effective in preventing HIV transmission, research suggests that married or co-habiting serodiscordant couples are a key population in terms of heterosexual transmission of HIV and continue to drive the epidemic, particularly in many sub-Saharan African countries (Kim et al. 2016; WHO 2012a). There is no epidemiological data available to make a similar claim or counter-claim in relation to PNG, where there is a paucity of research on serodiscordance (Kelly-Hanku 2016; Persson et al. 2019). Much international research has focused on HIV transmission and prevention in known serodiscordant relationships, but far less attention has been given to the *relational preludes and aftermaths of the serodiscordant diagnosis itself,* an approach that could provide important insights into the meanings and practices of serodiscordance among affected couples.

A diagnosis has enormous power to transform, carving an indelible 'before' and 'after' through a person's life story (Jutel 2015), and likewise through a couple's shared story if the diagnosis occurs within an existing relationship. From a sociological perspective, a diagnosis is not an isolated biomedical event but a profoundly situated and relational one (Brown, Lyson, and Jenkins 2011; Schubert 2011), with a confluence of forces and actors shaping the 'diagnostic moment' (Jutel 2009; Locock et al. 2016). However, this 'moment' is both preceded and followed by a

string of other constitutive moments, including why couples seek (in this case) an HIV test in the first place, whether they disclose their diagnosis to each other, how they make sense of their serodiscordant result, including its aetiology and preservation, and whether the HIV-negative partner continues to test for HIV. The existing international literature on serodiscordance tends to focus on only one question or other in this chain of events, rather than explore them as a connected story. While anthropologists have provided insightful analyses of the relationality of other diagnostic technologies in PNG (Wardlow 2020; Street 2014), these questions have not been researched in relation to HIV to date. In this paper, we explore this bigger story by first noting the diverse preludes to HIV testing among couples, before delving into the situated, syncretised understandings of serostatus in the aftermath of a serodiscordant diagnosis.

HIV in Papua New Guinea

PNG has the highest burden of HIV in the Pacific region, with an estimated prevalence of 0.89 per cent among the adult population 15–49 years (NACS 2018). Once considered to have an HIV epidemic that was widespread across the community, improved data from surveillance activities highlight that HIV rates are vastly higher in certain provinces and among vulnerable populations (also known as key populations), such as female sex workers, men who have sex with men, and transgender women (Hakim et al. 2019; Kelly-Hanku et al. 2018). Even though HIV is predominantly transmitted through sex between men and women in PNG, data on HIV infections occurring within married or co-habiting couples are not available, nor are statistics on serodiscordant relationships. We can glean some indication from a now dated social research study on experiences of people on HIV treatment in PNG, which found that 21 per cent of participants with HIV who were sexually active and in a regular heterosexual relationship had an HIV-negative partner (Kelly et al. 2011). Yet, despite this evidence of couples with mixed HIV status in PNG (including polygynous unions) and despite their global recognition as a priority population, no interventions have specifically targeted these couples in PNG (Kelly-Hanku 2016; Persson et al. 2019). As Angela Kelly et al. (2011) pointed out almost a decade ago, urgent attention and support for serodiscordant couples in PNG is needed.

HIV treatment was introduced in 2006 and is now nominally available across PNG, but stock-outs are a recurring problem (NACS 2018). The current global agenda of HIV treatment-as-prevention has been formally implemented with the introduction of ‘test and treat’. As PNG transitions to this model of test and treat, people with HIV in serodiscordant relationships have been identified, along with pregnant women and key populations, as a group for whom treatment should be prioritised. Since 2007, opt-out routine HIV testing has been in place for women attending antenatal clinics, with partner testing recommended from 2009 (Carmone et al. 2014). However, community uptake of HIV testing services among couples and individuals

is unknown, with robust testing data available only among key populations (Hakim et al. 2019; Kelly-Hanku et al. 2018).

HIV Testing and Couples

An HIV diagnosis is preceded by a decision or some other reason for the test. While there is a substantial international literature examining cultural, structural and psychological factors that motivate, enable or deter HIV testing by individuals and particular population groups, research that explores testing specifically in relation to serodiscordant couples is less voluminous, despite being considered a priority population.

When WHO (2012a) released its global 'guidance on couples', the emphasis was on the need to expand and promote couple-centred HIV testing and counselling programmes to ascertain the serostatus of intimate partners and to channel them into treatment and prevention services where required. Since then, efforts have been made to normalise these programmes. But, as Amy Conroy (2014) points out, testing together as a couple is not a simple or neutral act. Research from Uganda (Matovu et al. 2014) and Malawi (Conroy 2014) found that motivations to participate in these programmes among (heterosexual) couples included wanting to show commitment, to take precautions to facilitate sex, to prove fidelity and promote trust, and to plan for a family and the future. Conversely, however, barriers included wanting to avoid having awkward conversations or sowing doubts in the relationship, fear of exposure of hidden infidelity, or accusations of such, and fear of community gossip, blame, violence or marital breakup.

Such motivations and barriers show how an HIV test reveals not only immunological information but is also entangled in social meanings and relationship stakes (Conroy 2014; Rhine 2009). Consequently, as one South African study observed, testing together posed a challenge to relationships, particularly when found to be serodiscordant (Tabana et al. 2013). In this way, Conroy (2014) suggests, an HIV test is much more than a marker of serostatus; it is also a marker of the 'status' of the relationship more broadly.

While scant research is available on HIV testing by couples in PNG, some information can be extracted from studies on pregnancy and reproductive healthcare in PNG where prevention of mother-to-child transmission programmes have been integrated into antenatal clinics. HIV testing is recommended for all pregnant women who attend such clinics, as well as for their male partners (Carmone et al. 2014). However, these studies found that men were reluctant to seek HIV testing, in part because antenatal clinics were perceived as 'women's business' and men felt embarrassed to attend such a gendered space. Other barriers included fear of testing HIV-positive and the stigma and shame associated with it. Male partners tended to rely on their wife's test to indicate the couple's serostatus (Davis et al. 2018; Holmes et al. 2012; Kelly et al. 2013), a practice referred to as 'testing by proxy' in a US study (Morrill and Noland 2006). The same phenomenon has been observed in eastern

Africa; the belief that only one partner needs to test (typically the woman), because whatever the test result might be, the untested partner's serostatus is assumed to be the same (Camlin et al. 2016; Matovu et al. 2014; Ndyabakira et al. 2020).

There is limited literature on HIV testing practices by HIV-negative partners in known serodiscordant relationships. In a handful of studies in the USA, HIV-negative gay men in such relationships reported low HIV testing rates (Chakravarty et al. 2012; Mitchell and Petroll 2012), and those who did test were motivated by a perceived risky sexual episode, or a request by their HIV-positive partner to test (Beougher et al. 2015). Two Australian studies revealed that the act of seeking an HIV test was entangled in relational dynamics and meanings. For some, regular testing by the HIV-negative partner symbolised commitment, responsibility and reassurance, but for others it had the potential to signal unwelcome fear and risk by positioning the HIV-positive partner as 'infectious' (Persson 2011; Persson, Ellard, and Newman 2016). As this suggests, understanding the meanings that couples attach to their serostatus can provide valuable insights into testing practices.

Diagnosis and Serostatus Meanings

Our analytical approach is inspired by sociologists and medical anthropologists who venture beyond the conventional conceptualisation of 'diagnosis' as an interpretive and classificatory tool of medical nosology. Rejecting the notion of diagnosis as an essentially neutral scientific assessment of signs and symptoms, they are interested in teasing out how bodies, knowledge and lifeworlds converge in the diagnostic arena and with what relational effects (Jutel 2009; Armstrong and Hilton 2014; Nissen and Risør 2018; Mol 2002). In short, they approach diagnosis as an intersubjective process or assemblage that co-exists and co-articulates with lifeworlds in the making of social realities.

One key 'actor' in this diagnostic assemblage is technology. The use of technologies has become integral to diagnostic practices and to biomedicine more broadly (Lock and Nguyen 2010). Like any technology, an HIV test is designed with the intention to perform a specific function: to accurately and objectively screen blood for antigens, antibodies or pro-viral DNA and, by so doing, determine indisputable biological facts that cannot be discovered or established otherwise. But as Cornelius Schubert (2011, 852) argues, far from purely functional objects, diagnostic instruments 'must be understood as transformative agencies'. As these tools intervene in the body and reveal its hidden conditions, they rearrange identities, map new realities and futures (Jutel 2015) and, so, 'change the world in which we live' (Lock and Nguyen 2010, 20).

From this perspective, an HIV test is not simply a clinical procedure but a profoundly relational and constitutive process whose meanings and effects do not necessarily conform to the objectives prefigured by biomedical models and knowledge regimes. Phil Brown, Mercedes C. Lyson, and Tania M. Jenkins (2011) proposed the concept of 'social diagnosis' as a way of thinking about diseases as 'socially iatrogenic'. That is, this approach goes beyond the individual to situate a diagnosis within the social structures, cultural practices and norms implicated in the disease.

Exploring diagnosis, thus, is as much about diagnosing societies—and indeed couples —as it is about diagnosed individuals. This is the approach taken by anthropologists who have illustrated how the meanings and practices of other diagnostic technologies in PNG, such as virginity examinations (Wardlow 2020) and X-rays and blood tests (Street 2014), are shaped by particular political and economic conditions in post-colonial PNG and can have relational and transformative ramifications far beyond the diagnostic procedure itself.

Of particular interest to our analysis is the gamut of meanings and discourses that couples bring to a serodiscordant diagnosis and its aetiology in their attempts to make sense of and manage their changed lifeworld. Scholars writing from a Western perspective have outlined how HIV-positivity has been besieged by a surfeit of meanings, metaphors and significations (Treichler 1987; Sontag 1990). HIV-negativity, in contrast, as David Roman (1997) argued, has supposedly been left 'unmarked' as the 'unexamined' antipode in the serostatus binary and, yet, implicitly imbued with the status as natural, normal and healthy. However, as we show below, HIV-negativity was far from devoid of meaning among the couples in our study but, rather, conceptualised and negotiated through an amalgam of cultural discourses. The literature on serodiscordance likewise suggests that neither serostatus escapes significations.

Cross-cultural studies reveal how the phenomenon of serodiscordance encompasses a diversity of understandings and locally specific meanings that far exceed its medical definition (Persson 2013). Studies from Ethiopia (Tiruneh, Berhane, and Wilson 2016) and Uganda (Bunnell et al. 2005; King et al. 2012), for example, observed that many couples were confused or sceptical about their serodiscordance and tended to provide a range of explanations for their mixed HIV test results, including faulty testing equipment, lying health workers, the belief that frequent HIV testing directly prevented transmission, or that HIV was 'hiding' in the HIV-negative partner's body, or else that they were 'immune' to HIV because of 'strong blood' or protection by God. Ideas about different blood strengths and their role in the transmission and prevention of HIV have been observed also in PNG (Wardlow 2020). Alternatively, studies from the UK, Australia and Brazil found that couples tended to invest in a sense of 'normality', 'sameness' or togetherness as a way to defuse their serostatus 'difference' (Rhodes and Cusick 2000; Persson and Richards 2008; Hughes 2016) or dismissed serodiscordance as immaterial in the contemporary era of effective biomedical HIV prevention (Persson, Ellard, and Newman 2016). In short, serodiscordance can mean very different things depending on the historical, epidemiological, and cultural context in which it is situated (Kelly-Hanku 2016).

Medical sociology and anthropology have often focused on tensions between medical understandings of disease versus local or personal understandings, highlighting how diagnoses can be sites of interpretative struggle, disconnect and conflict (Brown, Lyson, and Jenkins 2011; Jutel 2009). But these disciplines have also revealed that different explanatory frameworks for disease—its presence or its absence—are not necessarily mutually exclusive but often co-mingled in locally meaningful ways. As research in PNG (and elsewhere) has illustrated, people navigate and

absorb Western medical explanations, including globalised 'facts' about HIV, by syncretising them with traditional knowledge, endogenous healing systems, cultural logics, and faith-based doctrines in ways both complex and pragmatic. Christianity, in particular, has a long history in PNG and plays an integral part in everyday lives and worldviews. Scholars have highlighted how discourses of faith and morality often shape perceptions of HIV, along with its treatment and prevention, but not necessarily in ways that replace or negate biomedical understandings (Kelly-Hanku, Aggleton, and Shih 2014, 2018; Wardlow 2020; Eves 2008, 2010; Eves and Kelly-Hanku 2020). However, less is known about how these intersecting frameworks figure in couples with mixed HIV status.

The YUMI Study

Our paper draws on interviews conducted in two high burden HIV areas in PNG—Port Moresby and Mount Hagen—as part of a longitudinal anthropological study of couples and polygynous partners with mixed HIV status (Persson et al. 2019). Ninety-six men and women in serodiscordant relationships participated in one or more interviews between 2017 and 2019, including 58 women (including seven transwomen) and 38 men. Of these, 59 were HIV-positive and 37 were HIV-negative, with more women than men being HIV-positive. All the HIV-positive participants were on HIV treatment. The study received ethics approval from the Research Advisory Committee of the National AIDS Council Secretariat in Papua New Guinea and the Human Research Ethics Committee at UNSW Sydney in Australia. Informed written consent was gained from all participants. The interviews were conducted in Tok Pisin or English by experienced Papua New Guinean social researchers, using semi-structured interview schedules to explore relational aspects of HIV (Persson et al. 2020; Mitchell et al. 2019).

Serodiscordance had come about in different ways. Over a quarter of couples had *knowingly entered* into a serodiscordant relationship. In about a third of couples, serodiscordance was *discovered after* the relationship began, sometimes many years later. In the remaining cases, serodiscordance was confounded by *non-disclosure:* the partner with HIV had not revealed their status to their husband or wife at the time of diagnosis or when the couple first met, either initially or for some years. It is also worth noting that serodiscordance was not always established through testing but was sometimes assumed based on faith or 'proxy testing', or suspected based on bodily signs, rumours or other circumstances.

Findings

Preludes and Pathways

HIV testing emerged in our interviews as a highly relational event situated within and propelled by a diverse set of circumstances, revealing pathways to testing that might

be easily overlooked or difficult to capture if testing is conceptualised as a singular clinical event, or if focusing solely on couple-centred testing or on individually driven 'motivations' to test. In conspicuous contrast to WHO's emphasis on couple testing, very few couples in our study had discovered their serodiscordant status by testing together. Moreover, the vast majority had never tested for HIV prior to their HIV diagnosis, or prior to discovering their partner's HIV status. Whether they tested positive or negative, it was their first ever HIV test, with the exception of a small minority who had had a previous test in relation to pregnancy, as testing is routine at antenatal clinics, or through their workplace (typically mining companies), or because of engaging in sex work or some other perceived 'risky' sexual liaison. In the few instances where couples *did* test together, one partner had already tested in secret and knew their status, or they suspected that their spouse was positive, and used the act of testing together as an opportunity to force things into the open.

Overwhelmingly, participants' initial test and diagnosis occurred in the context of some kind of change in their life such as pregnancy, sickness, unusual bodily changes, finding out that a previous or current spouse was HIV-positive, or because their baby or spouse were sick or had died. 'It was only when my daughter died that I became suspicious about me having this sickness', 34-year old Mona explained. 'So, I went for a blood test and my result proved that I have this sickness'. But what stood out in the interviews, and often spanned across these life circumstances, was the common intervention by others, a relational theme rarely documented in the literature on HIV testing (beyond the focus on couples). Many participants told stories of relatives, friends, co-wives or community members having encouraged them to get tested, often accompanying them to a clinic. They explained that these interventions by others had been motivated by people's concerns about their ill health or by knowledge or rumours that the participant's spouse or sexual partner was HIV-positive or was engaging in extramarital sex. As 22-year-old April explained:

> I had relationship with this guy … and it happened that [he] was already infected with this sickness, which I didn't know. He was young like me, so we became friends and while we were together, he had another girlfriend as well who had this sickness … One day his elder, biological brother told me that [this guy] has this sickness … [and] told me that I must go for check-up. But I never did until I got married to [my current husband].

Concerned that she was showing physical symptoms suggestive of HIV, April's husband would repeatedly encourage her to get tested.

> But I used to dismiss that and maintain that I don't have this sickness, [but] in reality, I didn't know my status … Until one day, my mum took me out for blood check and after my test, I learnt that I had this sickness.

Only after April's diagnosis in 2013 did her husband decide to get tested himself, which confirmed he was negative. But, April noted, he had not tested since. This was not a unique situation: there were other stories of partners who did not test, including male partners who explicitly refused to do so. Some women with HIV

believed or suspected that their supposedly HIV-negative husbands were in fact HIV-positive too, but they had no way to prove it. They speculated that their husbands refused testing as a way to hide, or avoid finding out, that they too had HIV. However, stories relating to testing by HIV-negative partners, or lack thereof, varied. Roughly half had tested several times since learning about their partner's HIV status, with some having established a steady testing routine, often in conjunction with their HIV-positive partner attending a clinic for their regular HIV review or when picking up their HIV medication. Others had tested sporadically during their serodiscordant relationship, some only once or twice, while others had tested several times early on but then stopped. To understand these different testing practices, we need to understand the meanings that couples attributed to their serostatus and its aetiology. As we describe below, testing serodiscordant was a catalyst for a range of interpretations.

Aetiologies and Aftermaths

When 25-year-old Sara's husband married another woman, Hagahai, without disclosing his HIV status to his new wife, Sara became angry and decided to intervene. As co-wife, Sara told Hagahai that their husband had HIV and brought her to the clinic for a test, which was negative. Five years later, both women remained HIV-negative and described their family life as 'normal'. Both had condomless sex with their husband and regularly tested. But the two women's explanations for the union's continued serodiscordance were quite different. Sara attributed her HIV-negative status to her husband's 'faithfulness' to his HIV medication. In contrast, her co-wife Hagahai attributed her HIV-negativity to 'God's blessings', describing her serodiscordant marriage as a 'miracle': 'I don't think it's anything else, because in marriage I know that if a man is positive, then the woman will [also] be positive'. However, this 'aftermath' was not complete or settled: towards the end of her interview, 27-year-old Hagahai expressed some uncertainty around the union's ongoing serodiscordance, asking the interviewer:

> If we [Hagahai and her co-wife Sara] turn out to still be negative, is there any chance we will be infected, or will we just be this way? This always confuses me a little. In the future, might we get infected, or will we only be this way?

Hagahai was not alone is raising questions about the ongoing status of HIV-negativity. Not everyone was convinced that serodiscordance was actually a valid phenomenon. Similar to the Ugandan and Ethiopian studies described earlier, some participants were bewildered how serodiscordance could be possible, particularly in the context of condomless sex. If one partner had HIV, so must the other. The fact that their blood tests suggested otherwise gave rise to several suppositions about this seeming conundrum, typically centred around the strength of a partner's blood or immune system, which prevented the virus from entering the body, or else prevented the virus from showing up in tests because it was 'hiding' in the body, safely contained. Technical errors were

also raised as a possible explanation for mixed HIV results, as exemplified in this quote by 40-year-old Joshua:

> I normally go and get my blood checked to see if I might be infected with this virus, but I am negative … I always think that the machine is honestly confused … I am living with this woman; how can I be negative? … I know I will be infected because she is a positive woman … I don't know why I am negative, it's difficult for me to understand.

These doubts were not exceptional or without context but echoed common beliefs in the community more broadly, with some HIV-negative partners describing how it was widely assumed that partners of people with HIV also had the virus. Danny, aged 21, explained that if people knew that his wife Lucy was HIV-positive, they would spread rumours that 'I have it too, despite the fact that all my HIV tests and reviews have been negative. You know, this village mentality thing … So, I never told anyone, [not] even my family members'.

However, the opposite assumption also surfaced in our interviews, with several participants suggesting that HIV-negativity was an immutable or *permanent serostatus*. They reasoned that once they had tested negative, they would remain that way, because if they had not acquired HIV from their spouse straight away, they never would. One of them was Greg, a 23-year-old man married to 19-year-old Rhonda. He argued that if he were destined to become HIV-positive, he would have by now. 'If I don't have it, that's it. I am negative now and I will forever be negative'. Accordingly, Greg had stopped testing.

One reading of these contrasting understandings of serodiscordance is to see them as simply signalling gaps in 'proper' medical knowledge about HIV transmission, or to dismiss them as alarmingly uninformed. But if we ground and interpret them in their specific context, another perspective becomes possible. We begin to realise that such understandings are far from definitive or singular but entwined with other locally meaningful narratives. As Holly Wardlow (2020, 2–3) notes, 'When HIV arrives in a place', it encounters not only a specific political and economic terrain but also a specific discursive and moral terrain. In other words, to gain insights into different views and practices in relation to testing and serodiscordance, we need to appreciate how these Papua New Guineans drew on multiple meanings and belief systems to make sense of their HIV serostatus, whether positive or negative.

Medical discourse was by no means excluded from this fusion or 'syncretisation' of meanings (Kelly-Hanku, Aggleton, and Shih 2014), as this quote by 35-year-old Leo typifies: 'I have complete trust in God and I also believe in this medicine … because I have not been infected in these three years [with my wife] … All my trust is in God and the medicine'. Because of their diagnosis or their serodiscordant relationship, most participants had received information about HIV from healthcare workers. The overwhelming majority accepted and understood the medico-scientific classification of HIV as a transmissible blood-borne virus, and that sexual intercourse

was the means through which they had or could acquire HIV. A significant minority also understood that HIV treatment had the capacity to prevent transmission to a partner. Participants expressed great respect for medical authority, and few questioned its discourse of HIV aetiology. But this discourse was rarely articulated as the complete story and did not preclude auxiliary or concomitant explanations for their HIV diagnosis or their HIV-negativity.

References to God were by far the most common and locally significant theme in relation to HIV. Acquiring HIV or remaining HIV-negative were both described as part of God's plan for them, with other explanations (e.g. curses or blessings, a spouse's non-disclosure, strong blood, effective treatment, or the supposedly protective properties of marijuana or herbs) often subsumed as sub-plots within this overarching storyline. 'This sickness passes on for a purpose', as 43-year-old, HIV-negative Edward put it. Not only did this narrative infuse serostatus with meaning, it also often gave participants licence and reason to stay in their marriage by framing the continuity and safety of serodiscordance as contingent on their faith and 'righteous' behaviour. As part of this narrative, participants argued that they, or their spouse, had acquired HIV because of their own 'sins', such as 'womanising', engaging in sex work, drinking and 'roaming around' (having multiple sexual partners). An HIV diagnosis was God's punishment for this 'wrong-doing'. Or, alternatively, it was God's merciful intervention to help them repent and change their ways, as noted by others (Wardlow 2019; Eves 2008; Kelly-Hanku, Aggleton, and Shih 2014). Likewise, being HIV-negative was attributed to the absence of wrong-doing and sin. When 31-year-old Becky met her husband Sylvester two years ago, 'I didn't know that he had HIV. He hid it from me'. She eventually found out from other people in the community, and Sylvester's mother took her to the clinic to get tested. Becky was distraught and convinced that 'I have HIV already, so I had no choice … I will suicide [or] go marry him'. Her HIV test turned out negative, and she had continued to test negative since. Becky made sense of it this way:

> If I'm a bad woman that tricks my husband and flirts or have sex with other men, or do bad to him, or do bad to my family, their bad thoughts or their curse will come back to me. I definitely would have gotten [HIV] … [But], I have no sin, so how can I get it?

Delilah, aged 38, was similarly convinced she would never contract HIV. When she went for her first HIV test after finding out that her husband Goliath had HIV, she prayed to God, reminding Him that her husband's HIV was a result of his 'womanising' ways: '[Goliath] was at fault and he contracted HIV, so *it will remain with him.* HIV will not be transmitted to me. That's my faith'. According to Delilah, her husband shared her conviction. 'He replied when I asked him, "It's true I left you and took promiscuous women around. I contracted HIV from my own wrong doings and you won't contract it. You will remain HIV negative"'. Delilah's explanation spotlights a compelling theme in the interviews; that negative partners were

safe or exempt from infection because the virus '*belonged*' to the HIV-positive partner alone. In 45-year-old Maryanne's words:

> I strongly believe that I have this sickness because of my wrongdoing, while my husband on the other hand is innocent, and God knows us. Since I'm the sinner, *this infection remains with me* and will never pass onto my husband, because God is in control.

This theme provides more context to the notion that HIV-negativity is a permanent serostatus, as we saw in the earlier quote by Greg who stated he would be negative 'forever'. Not long after Greg met his second wife Rhonda, she disclosed her HIV status when she became pregnant: 'She was scared to admit that she was positive … [But I told her] "I didn't do anything wrong, so I won't contract this virus, but it will remain with you"'. His wife, he explained, had contracted HIV because she had 'committed sin' in the past and, thus, the virus belonged to her. However, this causality between past sins and HIV was not inevitable but amenable to repair through atonement. In his interview, Greg revealed a history of violence and extramarital sex during his first marriage. He stated that he had changed his ways after Rhonda's disclosure, concerned that such behaviour on his part could jeopardise Rhonda's health and pregnancy (see Mitchell et al. 2019). Greg tested twice following Rhonda's disclosure, but then he stopped. While his previous 'sins' had fortuitously not resulted in an HIV diagnosis, he now reiterated a warning given to him by a health worker; that if he were to have sex outside his marriage to Rhonda, he would contract HIV. His continued HIV-negativity was now ensured by his transformation into a faithful husband and devoted father and by Rhonda's HIV treatment and her prayers. For Greg and others, including Maryanne's husband David, this belief in the nexus between HIV and sin was so strong that it removed the rationale for testing.

Discussion

Our findings clearly corroborate the sociological and anthropological argument that a diagnosis is so much more than the outcome of a technological procedure such as a clinical test. It is profoundly relational and contingent (Brown, Lyson, and Jenkins 2011; Jutel 2015; Mol 2002). The diagnostic moment has preludes and aftermaths; it is located within a chain of events, of circumstances and practices that are themselves embedded within broader social dynamics and cultural systems of meaning. This, we argue, highlights the importance of being attuned to the bigger story when seeking to understand testing practices among couples, both before and after serodiscordance. Looking beyond couple-centred HIV testing enabled us to capture a larger segment of this story, with our findings departing from the literature's focus on motivations and barriers. The preludes and pathways to testing were far more complex and circuitous among couples in our study, with illness, interventions by others, rumours about a spouse's HIV status, or a spouse's diagnosis or disclosure of HIV emerging as common themes, while testing together as a couple, as envisaged by WHO, was rare.

This attention to a longer trajectory provided new insights into the relationship between HIV testing and serostatus meanings among the couples. In the aftermath of discovering serodiscordance, the practice of regular testing by HIV-negative spouses varied widely and was largely shaped by different explanations for serodiscordance and concomitant aetiologies attributed to HIV-positivity and HIV-negativity. Our findings both accorded with and departed from the available literature on serostatus meanings, a subject that remains underexplored in the specific context of serodiscordance. Unlike its implicit framing in Western discourses as 'unmarked', neutral and normative (see Roman 1997; Persson, Newman, and Ellard 2017), HIV-negativity was replete with meanings in our study. In this respect, our findings partly echoed the non-medical explanations for HIV-negativity observed in African studies on serodiscordant couples, such as having strong blood, being protected by God, or doubting that serodiscordance was possible (King et al. 2012; Bunnell et al. 2005; Kim et al. 2016).

Other findings were specific to our study, including HIV-negativity as a permanent serostatus, the nexus between HIV and 'sin', and the view that HIV 'belongs' solely to the HIV-positive partner which for some negated any need for regular HIV testing. These themes bear out Wardlow's observation that narratives of HIV causality in PNG can be far more relationally complex than global public health messages permit (2020, 19). Her own research revealed examples of this 'relational causality' (20), including how family, kin or community members were sometimes presumed to play a part in creating the circumstances for someone becoming HIV-positive. In these scenarios, HIV infections were attributed 'not to the infected person's own acts, or even to the infecting sexual partner, but to others' failures of care' (19), a finding that provides an interesting counterpoint to the narratives of sin and serostatus 'belonging' in our study. If left decontextualised, these diverse understandings of HIV aetiology could readily be rendered ignorant and elicit misguided responses. But digging deeper into them can reveal additional layers of meanings that provide elucidation.

While medical discourses on HIV aetiology were widely accepted among participants, viral transmission through sexual contact was not seen as having enough causative power by itself to fully account for an HIV diagnosis, or indeed for its absence. Medical explanations were therefore complemented by interpretive systems with more immediate currency or relevance to their lifeworlds, most saliently Christianity (Kelly-Hanku, Aggleton, and Shih 2014, 2018; Eves 2008; Eves and Kelly-Hanku 2020). Accordingly, medical explanations for serostatus were syncretised with locally meaningful frameworks of miracles, of moral 'righteousness' or 'wrong-doings', and of trusting the preventative capacity of HIV treatment through trust in God's will.

Conclusion

Serodiscordance is a chain of events and moments, each entangled in and shaped by locally specific circumstances and dynamics. The parts of the chain we have explored here highlight some key insights: diverse and situated pathways can lead to HIV

testing for couples but not necessarily together. Focusing on couple-based and motivation-driven testing can foreclose the ability to be attentive to other possible enactments and understandings of testing in couples. As we have shown, serostatus can have layers of meanings that make sense in their specific setting, meanings that can shed important light on testing practices among couples, serodiscordant or otherwise. Thus, research on serodiscordance in PNG and beyond provides a unique opportunity to expand our understanding of how intimate partners navigate pathways to HIV testing and how they make sense of their mixed serostatus in ways relevant to their lifeworlds. Such insights are critical to finding situated, resonant ways to address the challenges of meeting the goal of ending HIV, locally and globally.

ORCID

Asha Persson http://orcid.org/0000-0002-1173-4697
Angela Kelly-Hanku http://orcid.org/0000-0003-0152-2954
Elke Mitchell http://orcid.org/0000-0002-3048-4160
Heather Worth http://orcid.org/0000-0001-5228-9588
Stephen Bell http://orcid.org/0000-0003-2877-9231

References

Armstrong, N., and P. Hilton. 2014. "Doing Diagnosis: Whether and How Clinicians Use a Diagnostic Tool of Uncertain Clinical Utility." *Social Science & Medicine* 120: 208–214.

Beougher, S. C., A. E. Bircher, D. Chakravarty, L. A. Darbes, C. G. Mandic, T. B. Neilands, C. C. Garcia, and C. C. Hoff. 2015. "Motivations to Test for HIV Among Partners in Concordant HIV-Negative and HIV-Discordant Gay Male Couples." *Archives of Sexual Behavior* 44: 499–508.

Braun, V., and V. Clarke. 2006. "Using Thematic Analysis in Qualitative Psychology." *Qualitative Research in Psychology* 3 (2): 77–101.

Brown, P., M. Lyson, and T. Jenkins. 2011. "From Diagnosis to Social Diagnosis." *Social Science & Medicine* 73 (6): 939–943.

Bunnell, R. E., J. Nassozi, E. Marum, J. Mubangizi, S. Malamba, B. Dillon, J. Kalule, N. Musoke, and J. H. Mermin. 2005. "Living with Discordance: Knowledge, Challenges, and Prevention Strategies of HIV-Discordant Couples in Uganda." *AIDS Care* 17 (8): 999–1012.

Camlin, C. S., E. Ssemmondo, G. Chamie, A. M. El Ayadi, D. Kwarisiima, N. Sang, J. Kabami, et al. 2016. "Men 'Missing' from Population-Based HIV Testing: Insights from Qualitative Research." *AIDS Care* 28 (suppl. 3): 67–73.

Carmone, A., K. Bomai, W. Bongi, T. D. Frank, H. Dalepa, B. Loifa, M. Kiromat, S. Das, and M. F. Franke. 2014. "Partner Testing, Linkage to Care, and HIV-Free Survival in a Program to Prevent Parent-to-Child Transmission of HIV in the Highlands of Papua New Guinea." *Global Health Action* 7 (1), doi:10.3402/gha.v7.24995.

Chakravarty, D., C. C. Hoff, T. B. Neilands, and L. A. Darbes. 2012. "Rates of Testing for HIV in the Presence of Serodiscordant UAI Among HIV-Negative Gay Men in Committed Relationships." *AIDS & Behavior* 16: 1944–1948.

Conroy, A. A. 2014. "'It Means There is Doubt in the House': Perceptions and Experiences of HIV Testing in Rural Malawi." *Culture, Health & Sexuality* 16 (4): 397–411.

Davis, J., C. Vaughan, J. Nankinga, L. Davidson, H. Kigodi, E. Alalo, L. Comrie-Thomson, and S. Luchters. 2018. "Expectant Fathers' Participation in Antenatal Care Services in Papua New Guinea: A Qualitative Inquiry." *BMC Pregnancy and Childbirth* 18: 138.

Eves, R. 2008. "Moral Reform and Miraculous Cures: Christian Healing and AIDS in New Ireland, Papua New Guinea." In *Making Sense of AIDS: Culture, Sexuality and Power in Melanesia*, edited by L. Butt, and R. Eves, 206–223. Honolulu: University of Hawaii Press.

Eves, R. 2010. "'In God's Hands': Pentecostal Christianity, Morality, and Illness in a Melanesian Society." *Journal of the Royal Anthropological Institute* 16: 496–514.

Eves, R., and A. Kelly-Hanku. 2020. "Medical Pluralism, Pentecostal Healing and Contests Over Healing Power in Papua New Guinea." *Social Science & Medicine* 266, doi:10.1016/j.socscimed.2020.113381.

Hakim, A. J., K. Coy, S. G. Badman, B. Willie, R. Narokobi, J. Gabuzzi, S. Pekon, et al. 2019. "One Size Does Not Fit All: HIV Prevalence and Correlates of Risk for Men Who Have Sex with Men, Transgender Women in Multiple Cities in Papua New Guinea." *BMC Public Health* 19 (1): 623. doi:10.1186/s12889-019-6942-7.

Holmes, W., G. Wambo, R. Gabong, E. Kavang, S. Luana, A. Sawa, H. Supsup, et al. 2012. "'Because it is a Joyful Thing to Carry a Baby': Involving Men in Reproductive, Maternal and Newborn Health in East New Britain, Papua New Guinea." *Papua New Guinea Medical Journal* 55 (1–4): 24–34.

Hughes, S. 2016. "HIV Serodiscordant Couples and the Discourse of Normality: Reconciling Biomedical and Social Meanings in Porto Alegre, Brazil." In *Cross-Cultural Perspectives on Couples with Mixed HIV Status: Beyond Positive/Negative*, edited by A. Persson, and S. Hughes, 55–70. Cham, Switzerland: Springer.

Jutel, A. 2009. "Sociology of Diagnosis: A Preliminary Review." *Sociology of Health & Illness* 31 (2): 278–299.

Jutel, A. 2015. "Beyond the Sociology of Diagnosis." *Sociology Compass* 9 (9): 841–852.

Kelly, A., M. Kupul, A. Frankland, H. Worth, S. Nosi, A. Mek, B. Kepa, et al. 2011. "Living Serodiscordantly in Papua New Guinea: Sexual Practices of HIV-Positive People on ART by Serostatus of Regular Heterosexual Partner." *AIDS Care* 23 (6): 734–740.

Kelly, A., H. Worth, M. Kupul, V. Fiya, L. Vallely, R. Neo, S. Ase, et al. 2013. *HIV, Pregnancy and Parenthood: A Qualitative Study of the Prevention and Treatment of HIV in Pregnant Women, Parents and Their Infants in Papua New Guinea*. Papua New Guinea Institute of Medical Research and the University of New South Wales; Sydney, Australia.

Kelly-Hanku, A. 2016. "Situating Serodiscordance: Living in Relationships with Mixed HIV Status in Different Local, Historical and Biomedical Realities." In *Cross-Cultural Perspectives on Couples with Mixed HIV Status: Beyond Positive/Negative*, edited by A. Persson, and S. Hughes, 71–84. Cham, Switzerland: Springer.

Kelly-Hanku, A., P. Aggleton, and P. Shih. 2014. "'We Call it a Virus But I Want to Say It's the Devil Inside': Redemption, Moral Reform and Relationships with God Among People Living With HIV in Papua New Guinea." *Social Science & Medicine* 119: 106–113.

Kelly-Hanku, A., P. Aggleton, and P. Shih. 2018. "I Shouldn't Talk of Medicine Only: Biomedical and Religious Frameworks for Understanding Antiretroviral Therapies, Their Invention and Their Effects." *Global Public Health* 13 (10): 1454–1467.

Kelly-Hanku, A., B. Willie, D. A. Weikum, R. Boli Neo, M. Kupul, K. Coy, P. Hou, et al. 2018. *Kauntim mi tu: Multi-Site Summary Report from the Key Population Integrated Bio-Behavioural Survey, Papua New Guinea*. UNSW Sydney: PNG Institute of Medical Research and Kirby Institute.

Kim, J., M. Nanfuka, D. Moore, M. Shafic, M. Nyonyitono, J. Birungi, F. Galenda, and R. King. 2016. "'People Say That We are Already Dead Much as We Can Still Walk': A Qualitative

Investigation of Community and Couples' Understanding of HIV Serodiscordance in Rural Uganda." *BMC Infectious Diseases* 16 (1): 665.

King, R., N. Wamai, K. Khana, E. Johansson, P. Lindkvist, and R. Bunnell. 2012. "'Maybe His Blood is Still Strong': A Qualitative Study Among HIV-Serodiscordant Couples on ART in Rural Uganda." *BMC Public Health* 12: 801.

Lock, M., and V.-K. Nguyen. 2010. *An Anthropology of Biomedicine*. Oxford: Wiley-Blackwell.

Locock, L., S. Nettleton, S. Kirkpatrick, S. Ryan, and S. Ziebland. 2016. "'I Knew Before I Was Told': Breaches, Cues and Clues in the Diagnostic Assemblage." *Social Science & Medicine* 154: 85–92.

Matovu, J., R. K. Wanyenze, F. Wabwire-Mangen, R. Nakubulwa, R. Sekamwa, A. Masika, J. Todd, and D. Serwadda. 2014. "'Men Are Always Scared to Test With Their Partners … It is Like Taking Them to the Police': Motivations for and Barriers to Couples' HIV Counselling and Testing in Rakai, Uganda: A Qualitative Study." *Journal of the International AIDS Society* 17 (1): 19160.

Mitchell, E., A. Kelly-Hanku, A. Mek, R. Nake Trumb, A. Persson, H. Worth, and S. Bell. 2019. "Caring Masculinities in the Context of HIV Serodiscordant Relationships in Papua New Guinea." *Men & Masculinities*, doi:10.1177/1097184X19889659.

Mitchell, J. W., and A. E. Petroll. 2012. "HIV Testing Rates and Factors Associated with Recent HIV Testing Among Male Couples." *Sexually Transmitted Diseases* 39 (5): 379–381.

Mol, A.-M. 2002. *The Body Multiple: Ontology in Medical Practice*. Durham, NC: Duke University Press.

Morrill, A. C., and C. Noland. 2006. "Interpersonal Issues Surrounding HIV Counseling and Testing, and the Phenomenon of 'Testing by Proxy'." *Journal of Health Communication* 11 (2): 183–198.

NACS. 2018. *Papua New Guinea National STI and HIV Strategy 2018–2022*. Port Moresby: National AIDS Council of Papua New Guinea.

Ndyabakira, A., G. Chamie, D. Emperador, K. Marson, M. R. Kamya, D. V. Havlir, D. Kwarisiima, and H. Thirumurthy. 2020. "Men's Beliefs About the Likelihood of Serodiscordance in Couples with an HIV-Positive Partner: Survey Evidence from Rural Uganda." *AIDS & Behavior* 24: 967–974.

Nissen, M., and M. B. Risør2018. *Diagnostic Fluidity*. Tarragona: Universitat Rovira Virgili.

Persson, A. 2011. "HIV-Negativity in Serodiscordant Relationships: The Absence, Enactment, and Liminality of Serostatus Identity." *Medical Anthropology* 30 (6): 569–590.

Persson, A. 2013. "Notes on the Concepts of 'Serodiscordance' and 'Risk' in Couples with Mixed HIV Status." *Global Public Health* 8 (2): 209–220.

Persson, A., J. Ellard, and C. Newman. 2016. "Bridging the HIV Divide: Stigma, Stories and Serodiscordant Sexuality in the Biomedical Age." *Sexuality and Culture* 20 (2): 197–213.

Persson, A., A. Kelly-Hanku, S. Bell, A. Mek, H. Worth, and R. Naketrumb. 2019. "'Vibrant Entanglements': HIV Biomedicine and Serodiscordant Couples in Papua New Guinea." *Medical Anthropology* 38 (3): 267–281.

Persson, A., A. Kelly-Hanku, A. Mek, E. Mitchell, R. Naketrumb, H. Worth, and S. Bell. 2020. "Polygyny, Serodiscordance and HIV Risk in Papua New Guinea: A Qualitative Exploration of Multiple Configurations." *Asia Pacific Journal of Anthropology* 21 (3): 248–263.

Persson, A., C. Newman, and J. Ellard. 2017. "Breaking Binaries? Biomedicine and Serostatus Borderlands among Couples with Mixed HIV Status." *Medical Anthropology* 36 (8): 699–713.

Persson, A., and W. Richards. 2008. "Vulnerability, Gender and 'Proxy Negativity': HIV-Negative Women in Serodiscordant Relationships in Australia." *Social Science & Medicine* 67 (5): 799–807.

Rhine, K. 2009. "Dilemmas of Diagnoses: HIV Testing in Northern Nigeria." *Northeastern Anthropological Association Newsletter* 31 (4): 2–11.

Rhodes, T., and L. Cusick. 2000. "Love and Intimacy in Relationship Risk Management: HIV Positive People and Their Sexual Partners." *Sociology of Health & Illness* 22 (1): 1–26.

Roman, D. 1997. "Negative Identifications: HIV-Negative Gay Men in Representation and Performance." In *Queer Representations: Reading Lives, Reading Cultures*, edited by M. Duberman, 162–176. New York: New York University Press.

Schubert, C. 2011. "Making Sure: A Comparative Micro-Analysis of Diagnostic Instruments in Medical Practice." *Social Science & Medicine* 73 (6): 851–857.

Sontag, S. 1990 [1989]. *Illness as Metaphor and AIDS and its Metaphors*. combined edition. New York: Anchor Books, Doubleday.

Street, A. 2014. *Biomedicine in an Unstable Place: Infrastructure and Personhood in a Papua New Guinean Hospital*. Durham: Duke University Press.

Tabana, H., T. Doherty, B. Rubenson, D. Jackson, A. M. Ekström, and A. Thorson. 2013. "'Testing Together Challenges the Relationship': Consequences of HIV Testing as a Couple in a High HIV Prevalence Setting in Rural South Africa." *PLoS ONE* 8 (6): e66390.

Tiruneh, Y., Y. Berhane, and I. Wilson. 2016. "Reconciling Serodiscordance: Lived Experiences of Mixed HIV-Status Relationships in Ethiopia." In *Cross-Cultural Perspectives on Couples With Mixed HIV Status: Beyond Positive/Negative*, edited by A. Persson, and S. Hughes, 139–152. Cham, Switzerland: Springer.

Treichler, P. 1987. "AIDS, Homophobia, and Biomedical Discourse: An Epidemic of Signification." *Cultural Studies* 1 (3): 263–305.

Wardlow, H. 2019. "'With AIDS I am Happier Than I Have Ever Been Before'." *Australian Journal of Anthropology* 30: 53–67.

Wardlow, H. 2020. *Fencing in AIDS: Gender, Vulnerability, and Care in Papua New Guinea*. California: University of California Press.

WHO. 2012a. *Guidance on Couples HIV Testing and Counselling, Including Antiretroviral Therapy for Treatment and Prevention in Serodiscordant Couples: Recommendations for a Public Health Approach*. Geneva: World Health Organization. http://apps.who.int/iris/bitstream/10665/44646/1/9789241501972_eng.pdf.

WHO. 2012b. *Living With HIV When One Partner is Positive and the Other is Negative*. Geneva: World Health Organization. https://www.who.int/features/2012/living_hiv/en/.