Timing of HIV acquisition and disclosure: a qualitative typology of serodiscordant relationships among heterosexual black African migrant couples in the UK

Mohamed Kemoh Rogers[1] and Eamonn McKeown[2]
[1]Senior Lecturer in Nursing Sciences (Adult), Faculty of Medicine and Health Sciences, University of East Anglia, Norwich
[2]Senior Lecturer, School of Health Sciences, City, University of London, UK

Abstract

Serodiscordant relationships (SdRs) are presented in current HIV literature as relationships with one partner living with HIV. This definition does not consider the transmission trajectories and disclosure of HIV status to sexual partners. In this interpretive phenomenological qualitative study, the significance of the time of HIV acquisition and disclosure to current sexual partners in aiding understanding of SdRs among a cohort of black African migrant couples in the UK is explored. As a human science research project, the emphasis is on deeper understanding of the lived experiences of participants and this involves description, interpretation and self-reflective analysis. An interpretive phenomenological perspective is a particularly appropriate research approach to guide data analysis and subsequent interpretations. Narratives generated through in-depth couple and individual interviews of black Africans in genitourinary medicine (GUM) clinics in the UK were analysed through phenomenological reflection and writing. A key overall finding from the research revealed several types of SdRs that are dependent on the timing of HIV acquisition and disclosure in relation to the establishment of relationships. Implications for clinical practice include, providing support and information for black African heterosexual couples living in SdRs, particularly in terms of the potential benefits of greater engagement with both partners, with and without HIV, as a unit.

Keywords: HIV serodiscordant relationships (SdRs), typology of SdRs, black African heterosexual couples

Introduction

This study examined the timing of HIV acquisition and disclosure of HIV status to HIV-negative sexual partners in serodiscordant relationships (SdRs) among heterosexual black African migrant couples. The objective was to show how various types of HIV SdRs emerged through exploring the time of HIV acquisition and disclosure of HIV positive status to sexual partners. This consideration of the timing of acquisition and disclosure trajectories contrasts with research among heterosexual black African couples as most studies over the years present SdRs as a unitary concept involving one partner living with HIV in a relationship with a partner without HIV [1–7]. Emphases in current HIV literature are on whether both partners in SdRs know about their respective HIV statuses (regular SdRs) or only one partner knows about his or her HIV status (irregular SdRs) [8]. This study explores how timing of HIV infection and disclosure of HIV status to sexual partners aid understanding of the complexities of SdRs and inform the care and management of black African heterosexual couples in SdRs.

Method

Multicentre ethical approval was obtained through the NHS Research and Ethics Committee (REC) prior to conducting this research in three genitourinary medicine (GUM) clinics located within the NHS Hospitals in North East London. Black African heterosexual individuals and couples in SdRs for at least 6 months were recruited. Clinic staff verbally confirmed the HIV statuses of both partners who agreed to participate in the research, ascertaining that one partner was living with HIV and the other without. Each potential participant was given an envelope containing research information and a card with details of the research. Participants who wished to take part in the research either informed the research nurses to be contacted by the research team or posted the research card in a prepaid stamped envelope.

Twenty-five in-depth interviews were conducted between September 2012 and July 2013 with 19 participants, comprising six couple interviews and 19 individual interviews. In total, 13 SdRs were represented in this study (see Table 1). All interviews were digitally recorded and transcribed verbatim. The participant names were assigned by the authors and are not the real names of participants. Participants' ages ranged 30–58 years (females 30–45 years, males 31–58 years) with a mean age of 39 years for all participants. All participants were first generation migrants and were UK residents prior to participation.

Analysis

The qualitative data analyses software MaxQDA facilitated coding schemes, data storage and retrieval.

Table 1: Sample participants

Participant number	Male partner assigned name, age (years)	Female partner assigned name age (years)	Length of relationship before serodisordance known (years)	SdR type
1	Abraham, 34	Abigail, 33*	0	1
2	Smith, 45*	Nancy, 34	5	3
3	Edward* 45	Mary, 37	3	3
4	Brian, 31	Natasha, 30*	3	3
5	Mohamed, 50	Evelyn, 37*	1	3
6	Bernard, 45	Linda, 37*	1	2
7	Andrew, 58*	Did not participate	0	1
8	Did not participate	Dorothy, 45*	5	3
9	Did not participate*	Felicia, 34	2	3
10	Did not participate	Patricia, 32*	4	3
11	Did not participate	Amanda, 32*	2	2
12	Did not participate*	Agatha, 45*	0	1
13	Did not participate	Angela, 33*	3	3

*Indicates partner living with HIV in SdR. SdR: serodiscordant relationship.

Data analysis was guided by reflection and writing as two interpretive phenomenological research activities [9–11]. Through phenomenological reflections, texts were treated as sources of meaning at the level of the sentence, phrase, expression or single words (detailed reading); at the level of separate paragraphs (selective reading); and at the level of the whole story (wholistic or holistic reading) [9–11]. The emergent codes served as sources of meaning of SdRs and were validated by the co-researcher. Research utilising data was completed in December 2015.

In the phenomenological writing stage, themes emerging from the data were abstract but related to SdRs in black African heterosexual couples.

Results

A typology of SdRs

Serodiscordant relationship typology is presented consisting of three types and two subtypes of HIV SdRs. The typology reflects a combination of the time that HIV-positive partners acquired HIV relative to the start of relationships and when HIV was disclosed within relationship contexts.

SdR type 1: mutual awareness of SdR at start of relationship

In this type of SdR, the HIV-positive status of one partner is known to both partners either at the start of the relationship or before engaging in unprotected sexual intercourse. For these couples, the HIV-negative statuses of participants were revealed through subsequent HIV tests in response to the partner's HIV-positive status disclosure, confirming SdRs. For some couples, both partners had HIV tests together before they commenced sexual intercourse. The participants living with HIV (LWH) in type 1 SdRs were mostly women and like other participants LWH in this type of SdR, had confirmed HIV-positive status before the onset of a relationship. Disclosure of HIV-positive status occurred at the onset of the relationship for some couples but took much longer for others. The couples maintained protected sexual intercourse prior to disclosure and the HIV-negative test result. There was variability in ease and reasons for delayed disclosure. A female participant LWH eloquently articulated how she disclosed her HIV-positive status:

> *In the beginning it was not easy. But as they say love conquers all. That is when you really know who truly loves you. Right from the beginning, right from day one. So when we decided to get into a relationship I told him. He was shocked.* (Abigail, living with HIV [LWH], female [F], 33 years [age])

In the above narrative Abigail stated that her partner was shocked when she informed him about her HIV positive status. The 'shock' was perhaps an indication of ignorance about HIV within some African communities or perhaps when perceptions associated with HIV such as extreme weight loss or malaise are absent. A compelling theme to emerge was the general appreciation among HIV-negative participants in Type 1 SdRs relationships that partners LWH disclosed their status. Abraham, the HIV-negative partner of Abigail, said in a couple interview:

> *I wouldn't, I wouldn't have liked it because I think that would have been dishonest and it's a very sensitive thing to keep from someone you want to have relationship with* (Abraham, without HIV, male [M], 34)

Other HIV-negative partners within type 1 SdRs indicated that they may have considered partners to be dishonest if information about their HIV-positive status was not shared at the start of the relationship. Nevertheless, in spite of mutual knowledge about chances of transmitting HIV to the partner, most couples in type 1 SdRs had regular unprotected sexual

intercourse following disclosure and HIV-negative test results of partner. Several reasons were suggested for unprotected sex including a desire for children or the negative partner's refusal to use condoms as Abigail, 33 years of age, and living with HIV poignantly stated, '*I always take them home and asked him to use them but he refused knowing full well that I am HIV positive.*'

In conjunction with the main strand of type 1 SdRs, two subtypes were identified within this type of SdR. These are based on whether partners living with HIV voluntarily disclosed their HIV status, or both partners had HIV tests in advance of a new sexual relationship.

In the first, referred to as type 1 SdRs (V), the partner living with HIV voluntarily (V) informed a new partner about his or her HIV-positive status at the onset of the relationship. Couples in (V) subtypes included both male and female partners LWH and some participated in the research as a couple and others as individual participants. Unlike subtype (V), the second subtype (R), which occurred in specific religious (R) and cultural contexts, was unique to one couple in this study. This couple had no intention of HIV testing but they did so on the eve of their wedding because the pastor insisted on prenuptial HIV test certificates:

> *And in fact the pastor who was going to wed us insisted that he cannot, he does not wed people without the certificate confirming that both of you are clear of HIV.* (Agatha, LWH, F, 45)

The essence of the prenuptial HIV test provided information about the respective HIV statuses of partners but even after that, the relationship was maintained. According to the female partner LWH, who participated as an individual and shared her experiences, the immense insistence of her partner's love for her convinced the pastor to conduct the marriage ceremony.

SdR type 2: one partner only aware of SdR at start of relationship

In the second type of the typology of HIV SdRs, partners LWH, who knew about their HIV status delayed informing their current sexual partner. Type 2 was an important group because of the relatively high risks of transmitting to the potential HIV-negative partner. The main reason for partners LWH not disclosing earlier in the relationship was a lack of confidence in discussing HIV at early stages of the relationship and not knowing the new partners well enough. Obviously, HIV acquisition in partners, as in type 1 SdRs, occurred before the onset of the relationship. There were both male and female participants LWH within type 2 SdRs. Disclosure of HIV status to HIV-negative partners occurred within 1–3 years but the couples were engaged in regular unprotected sexual intercourse. A further consideration among partners LWH within type 2 SdRs for delayed disclosure was fear of losing the partner, eloquently suggested by Linda: '*I wouldn't think he would have stayed. He would have gone, I think. I think, that's what I think.*'

At the start of the relationships, partners LWH in type 2 SdRs assumed their new partners to be HIV-negative but rationale for this assumption was not explored in interviews. Couples did not use condoms for sex during this period of 'non-disclosure'. In her narrative, a participant LWH pointed out that her antiretroviral therapy medications were not concealed, thus her HIV-positive status could have been revealed. Some partners LWH attempted to talk about HIV to sexual partners, but were unable to do so because of lack of interest on the part of their new partners in discussions concerning HIV. These partners who were not encouraged to discuss HIV did not force such discussions because they reasoned that each person was responsible for his or her own sexual activities. Some participants LWH were tormented by their inability to inform the partner that they were living with HIV as Linda suggested:

> *I really felt bad. You know why I felt bad I was thinking: what if I had infected him. I really felt bad. Even though I didn't tell him I still had this; you know when you are carrying a load, so it's like you're carrying a heavy lead around you.* (Linda, LWH, F, 37)

In one of the type 2 SdR individual interviews, the HIV-negative partner said that her partner kept his HIV-positive information secret for over 3 years. After finding out and testing HIV negative herself, this partner's narrative showed great understanding for her partners' non-disclosure. She reasoned that remaining silent was sensible as talking about HIV was difficult. Similarly, Bernard, an HIV-negative partner in a type 2 SdR whose partner delayed disclosure suggested that his relationship would have ended had she disclosed her HIV status at the start of their relationship:

> *I think maybe if I had known from the beginning, because if you know from the beginning, there is really no attachment right? It's at the beginning so you really don't have that affinity, that closeness, that bond. So I would probably at that point, my reaction would have been different rather than a year later.* (Bernard, without HIV, M, 46)

Evidently, partners living with HIV in type 2 SdRs recognised the risks of infecting their HIV-negative partners but this did not dissuade them from engaging in unprotected intercourse. However, couples did not change their sexual habits even after disclosure of HIV-positive status and subsequent HIV negative test results. Felicia, a 35-year-old HIV-negative female in a 3 years' type 2 SdR highlighted, after she knew that her partner was living with HIV that: '*Now, I will not tell you that it's all the time* [we use condoms]. *Once in a while, it's* [sex] *without condom*.'

Some participants LWH in type 2 SdRs had not disclosed their HIV status to sexual partners but believed that their undetectable viral load gave them the confidence to engage in unprotected sexual intercourse without transmitting HIV to their partners. Similar suggestions were made by HIV-negative partners who alluded to the association between undetectable viral load and unsafe sexual behaviour. However, when confronted with the prospect of taking anti-HIV medications for preventive reasons, most HIV-negative participants in

all types of SdRs were reluctant to use the medications even when there had been condom accidents:

> *Well I have been given the medications. I have a whole big packet of that but I never start taking them. I never start taking them. And one day they will insist and I will take and chuck them away and they will go to waste. Yeah they gave me the medications once and I remember keeping them in a drawer in my room for 4 years* [laughs]. (Bernard, without HIV, M, 46).

It is evident that partners LWH in type 2 SdRs had difficulties disclosing their status to current sexual partners but did not ask their clinic for assistance. On the contrary, most of these participants LWH believed that clinic staff should not be involved in disclosure activities. When asked about the role clinics could play in aiding disclosure to sexual partners, a female participant LWH in a type 2 SdR reiterated that clinic staff should not get involved because disclosure is a complex process:

> *No. I still believe that the clinic doesn't have to interfere in anyway, form, shape, whatsoever. It comes when it comes to disclosure they just have to stay away. Its complex.* (Linda, LWH, F, 37,)

SdR type 3: mutual lack of awareness of SdR at start of relationship

In type 3, partners in irregular SdRs were unaware of HIV within their relationships before one partner and eventually both partners had HIV tests with dissimilar results. The assumptions from participants' narratives is that HIV acquisition occurred before the start of the current relationship. Participants were in unknown SdRs for 1–5 years and did not use condoms for sexual intercourse during the period. There were more female participants LWH in type 3 SdRs.

Type 3 SdRs formed the dominant SdRs identified among heterosexual black African migrant couples in this research. Couples had existing shared experiences of an assumed 'HIV neutral' relationship before serodiscordance emerged. Once undiagnosed partners had an HIV test, the information was shared sooner and the other partner was encouraged to have an HIV test. Possibly because couples were already in well-established relationships, type 3 SdRs were established soon because partners agreed to have HIV tests without delay. Narratives from couples in type 3 SdRs indicated that some of them experienced relationship disruptions in the immediate aftermath of HIV dissimilar results. Some couples stopped talking to each other, a few HIV-negative partners moved out. Yet for some relationships, life continued as normal with narratives suggesting that HIV should not be a reason for separation:

> *I want to just add something that meeting my husband is not a mistake and marrying to him is not a mistake. And no matter what happens he is still my husband and if I didn't meet him I might have met another person that would be in the same situation. And eh, and HIV as a whole, should not limit, should not limit one's happiness.* (Mary, LWH, F, 37)

A key theme that framed the context of type 3 SdRs was uncertainty. The cause of uncertainty for most participants was related to the potential negative outcome of HIV acquisition, unpredictability of treatment outcomes and the longevity of partners LWH. For other participants, uncertainty was associated with challenges posed by HIV within relationships, around child bearing or transmission to a partner. Participant LWH conceptualised a key uncertainty:

> *This is the situation… You don't know what is going to happen tomorrow. It is not like before like oh when I get children I will look after them until, until they are able to do this. Until they are old enough to look after themselves. First of all you do not know how long you are going to live for.* (Amanda, LWH, F, 32)

Amanda highlights uncertainty associated with the physiological consequences of living with HIV. Alluding to the proposed uncertainty in illness theory [12, 13], uncertainty in SdRs occurred because couples could not predict the nature of HIV in terms of prognosis and treatment. For other participants in type 3 SdRs, uncertainty was related to whether the relationship would continue. All participants LWH in long-term relationships before they knew about HIV, expressed uncertainty about whether their partners would remain in the relationship. Although this has changed dramatically, the general belief was that serodiscordant partners do not stay in relationships, because sooner or later the HIV-negative partner acquires HIV:

> *I expected him to end the relationship there. I would have taken it. I was ready to take it if he wanted to go, to leave, I wouldn't have blamed him.* (Evelyn, LWH, F, 37)

At the time of confirming serodiscordance, couples in type 3 SdRs were already in settled relationships, with children and a supportive HIV-negative partner. Even in these stable relationships, some participants LWH believed that the HIV-negative partner would abandon the relationship for someone who did not have HIV. There were doubts about the fidelity of HIV-negative male partners who possibly longed to have unprotected sex with an HIV-negative individual. The question however remains; how would HIV-negative men in existing SdRs ascertain a new (potential) partner would be HIV-negative?

Risk construction embodies SdRs and navigating the infection risks of negative partners emerged as an important theme particularly in type 3 SdRs. Narratives of some couples in type 3 SdRs showed that protection of love and intimate relationships took precedence over infection risks for negative partners. Most HIV-negative participants within type 3 SdRs acknowledged the risk of infection following unprotected sex, but conceived that the risk was no greater than before serodiscordance was confirmed:

> *So whatever happened then that didn't make me* [get HIV]*, that didn't allow me to have it* [HIV] *I think that thing should be around for me not to have it now.* (Nancy, without HIV, F, 34)

Being familiar with and enjoying unprotected sex before SdRs were established in type 3 couples, appeared to prompt engagement in unsafe sexual behaviour. When these couples had to use condoms because of knowledge about HIV, some of the relationships

declined. Couples described sex without condoms, before serodiscordance as enjoyable. Some partners LWH were worried about infecting their negative partners, but some negative partners were less averse to having unprotected sex:

> *He has no problem with it because in most cases he wants to have unprotected sex. In most cases but I do not want him in case, in case he is infected. He no longer thinks about infection anymore.* (Patricia, LWH, F, 32)

On the contrary, other couples in type 3 SdRs strictly used condoms once serodiscordance was established and some couples experienced difficulties with regular sex, even with condoms.

Discussion

The aim of this study was to explore a typology of SdRs based on the relative times of HIV acquisition, testing and disclosure to current sexual partners. Through in-depth interview data analysis, a typology of SdRs emerged consisting of three types and two subtypes of SdRs. This typology contrasts with how SdRs are presented in current literature: as simply a unitary relationships containing one partner LWH [1,5,6,14]. Evidently, present definitions of SdRs might be coined from scientific knowledge that one person in a relationship has HIV and one does not. The orthodoxy of defining SdRs in this way assumes that all SdRs are of one type and this might impede full understanding of the complexity of SdRs in terms of informing care and management. Also, the definition of SdRs as unitary concepts does not reflect the emic (everyday personal) experiences of people living in SdRs. In this study we relied solely on SdRs as experienced by couples who knew about their serodiscordant statuses before participation in the research. Seeking understanding of SdRs in this way meant that all knowledge about SdRs was suspended and we returned to the lifeworld of couples in SdRs so that the typology of SdRs presented in this article emerged from that world.

The typology has not previously been defined but emerged through gaining access to the pre-reflective experiences of SdRs as they occurred. In seeking interpretations and understandings of the lived experiences of serodiscordant couples, disclosure of HIV status to current sexual partners was found to be complex, selective and gradual process, and dependent on the type of SdRs.

In SdRs known to both partners at, or near, the beginning of their relationships (type 1), disclosure was unproblematic. This is in consonance with other studies in SdRs that partners LWH do not delay disclosure of their HIV status to HIV-negative sexual partners [15–18]. Similarly, a longitudinal study involving 143 serodiscordant participants [17], purports that the majority of the partners disclosed their HIV-positive status to their negative partners at the time of meeting. Disclosure was equally not delayed in relationships involving couples who did not know about HIV in their relationships until much later (type 3). In sub-Saharan Africa motivation for early disclosures within type 3 SdRs could be attributed to the positive impact of disclosure to sexual partners in terms of safer sexual practices and adherence to HIV medication [18, 19]. In contrast, partners LWH in relationships where only one partner knew about their HIV status at the start of relationships (type 2), did not readily disclose their HIV status to sexual partners although they were engaged in unprotected sexual intercourse. Disclosure in this group of participants could be said to be problematic and it has been highlighted that some people living with HIV have limited motivation to disclose their HIV status [20]. As indicated in narratives of participants, fear of disclosure might be attributed to a suggestion that once HIV status is revealed, the person living with HIV no longer controls the cascade of further disclosures to other people [21]. Nevertheless, participants LWH in type 2 SdRs might not have realised the benefits of disclosing to sexual partners as articulated in a study of sub-Saharan African cohorts in SdRs [18,19]. A surprising theme was the reluctance of partners LWH in type 2 SdRs to involve clinicians to aid disclosure to their sexual partners. Disclosure within type 3 SdRs (where both partners were unaware of their serodiscordant statuses) was not delayed possibly because couples were already in established relationships when serodiscordance was confirmed. However, couples in type 3 SdRs in this research had been in unprotected sexual relationships for 3–5 years and it was surprising that there were still HIV-negative partners within these relationships. Type 3 SdRs are indicative of suggestions that in 2013, 5300 men and 7900 women among heterosexual black Africans lived with HIV in the UK but were undiagnosed [22].

Navigating HIV risk was also dependent on the type of SdRs. The knowledge about HIV at onset of relationships or before initiation of unprotected sexual intercourse in type 1 SdRs meant that couples were mutually conscious of risk of unprotected sex. On the contrary, knowledge about HIV risk was known only to partners LWH within type 2 SdRs. Engaging in unprotected sexual intercourse in the absence of disclosure and refusal to involve clinicians for assistance with disclosure, put the HIV-negative partners within type 2 SdRs at risk of HIV. Within type 3 SdRs there was a dichotomous pattern of sexual risk behaviour. Some couples rarely used condoms for sexual intercourse because they relied on the chances of HIV-negative partners remaining negative.

Variations in sexual behaviour within SdRs conform to discussions that sex within SdRs is fluid and essentially social [23], although the African heterosexual HIV literature has taken limited account of these complexities. As evident in the narratives of both HIV-negative partners and partners LWH, sexual behaviours and encounters in the contexts of SdRs are not initiated and controlled solely by one partner. Furthermore, gender roles, cultural and religious values may influence the manner in which love, romance and risks are conceptualised within SdRs [24]. These discourses challenge the way safety and sex are conceptualised within the wider literature on sexual behaviours, where

risk and transmission of sexually transmitted infections including HIV are emphasised [24, 25].

Limitations

The main limitation of this article is that the typology of SdRs discussed is not exhaustive of all types of SdRs, as only black African migrant couples were included.

A dichotomy of two types of HIV SdRs; prenuptial and postnuptial SdRs could be suggested. Prenuptial referring to HIV SdRs disclosed before the relationship and postnuptial, after the relationship had started. However, this is a rather simplistic categorisation that may not capture the full complexity of SdRs identified in this article. The prenuptial and postnuptial SdRs dichotomy focuses on disclosure of HIV-positive status to partners but time of HIV acquisition is not considered. Therefore, understanding the typology of SdRs and associated types presented in this article are important for couples from high-risk HIV populations as well as researchers and practitioners who work with people living with HIV and their sexual partners.

Other similar or dissimilar typologies and types of SdRs that are not considered in this study could be identified in further research. Exploring types of SdRs such as those occurring when an HIV-negative partner, initially in a known seroconcordant relationship then acquires HIV would be of interest.

Conclusion

Understanding the types of SdRs illuminates the complexity of SdRs regarding the potential constant ongoing threat of transmission to the HIV-negative partner and the challenges arising from disclosing HIV to current sexual partners. The typology of SdRs included in this study has implications for how couples cope with HIV within their relationships. For instance, understanding the types of SdRs could act as a guide for providing care and management of black Africans living in SdRs. We further emphasise that by understanding the types of SdRs, the HIV status of partners should not be inferred from HIV negative results of sexual partners. This is attributed to suggestions made that a substantial number of black African men and women live with undiagnosed HIV [22]. Also, the limited motivation of partners LWH in certain types of SdRs to disclose their HIV status to sexual partners is ascertained. We suggest that clinicians working with people living with HIV should make efforts to effect disclosure practices especially for those with known sexual partners.

Acknowledgements

We would like to express our sincere gratitude to the women and men in SdRs, who generously shared their experiences during interviews. We would also like to thank the staff of the three participating clinics for assisting in the recruitment of participants, establishing their serodiscordance statuses, and also for providing space to conduct interviews. We express our sincere thanks to the Homerton NHS Foundation Trust, the National HIV Nurses Association (NHIVNA), the Florence Nightingale Foundation, City University London and Anglia Ruskin University.

Funding

Homerton University NHS Trust Nursing Studentship supported this PhD research. The National HIV Nurses Association (NHIVNA) and the Florence Nightingale Foundation funds contributed to data collection.

Conflicts of interest

The authors declare no conflicts of interest.

References

1. Beckerman N. The impact of HIV in women's relationships: Implications for the direct practitioner. *Practice* 2000; **12**: 5–16.

2. Kayitenkore K, Bekan B, Rufagari J *et al*. The impact of ART on HIV transmission among HIV serodiscordant couples. *16th International AIDS Conference*, 2006, Toronto, Canada. Abstract MOKC101.

3. Mugwanya KK, Baeten JM, Nakku-Joloba E *et al*. Knowledge and attitudes about male circumcision for HIV-1 prevention among heterosexual HIV-1 serodiscordant partnerships in Kampala, Uganda. *AIDS Behav* 2010; **14**: 1190–1197.

4. Murphy D, Ellard J, Newman C *et al*. Serodiscordance in regular relationship. In: *Social Research Issues*. Sydney: University of New South Wales, 2003.

5. Ngure K, Heffron R, Mugo NR *et al*. Contraceptive method and pregnancy incidence among women in HIV-1-serodiscordant partnerships. *AIDS* 2012; **26**: 513–518.

6. van der Straten A, Vernon KA, Knight KR *et al*. Managing HIV among serodiscordant heterosexual couples: serostatus, stigma and sex. *AIDS Care* 1998; **10**: 533–548.

7. Varnazza P, Hirschel B, Bernasconi E, Flepp M. HIV-positive individuals without additional sexually transmitted diseases (STD) and on effective anti-retroviral therapy are sexually non-infectious. *Bulletin des médecins suisses* 2008; **89**: 5.

8. Kalichman SC, Rompa D, Luke D, Austin J. HIV transmission risk behaviours among HIV-positive persons in serodiscordant relationships. *Int J STD AIDS* 2002; **13**: 677–682.

9. van Manen M. *Phenomenology of Practice: Meaning-Giving Methods in Phenomenological Research and Writing*. Walnut Creek, Canada: Left Coast, 2014.

10. van Manen M. The pedagogy of Momus technologies: Facebook, privacy, and online intimacy. *Qual Health Res* 2010; **20**: 1023–1032.

11. van Manen M. From meaning to method. *Qual Health Res* 1997; **7**: 345–369.

12. Bailey DE, Stewart JL. Merle H. Mishel. Uncertainty in illness theory. In: *Nursing Theorists and Their Work*. Alligood MR (ed). St Louis, Missouri: Elsevier, 2017. p 447.

13. Mishel MH. Reconceptualization of the uncertainty in illness theory. *Image J Nurs Sch* 1990; **22**: 256–262.

14. Bor R, Elford J (eds). *The family and HIV today recent research and practice*. London; New York: Cassell, 1998.

15. Bird JD, Fingerhut DD, McKirnan DJ. Ethnic differences in HIV-disclosure and sexual risk. *AIDS Care* 2011; **23**: 444–448.

16. Flowers P, Davis M. Obstinate essentialism: identity transformations amongst gay men living with HIV. *Psychol Sex* 2013; **4**: 283–295.

17. Gosselin JT, Sauer MV. Life after HIV: examination of HIV serodiscordant couples' desire to conceive through assisted reproduction. *AIDS Behav* 2011; **15**: 469–478.

18. Patel R, Ratner J, Gore-Felton C *et al*. HIV disclosure patterns, predictors, and psychosocial correlates among HIV positive women in Zimbabwe. *AIDS Care* 2012; **24**: 358–368.

19. Luo W, Zhu CY. Ageny cost and voluntary dislosure. *Economic Research* 2010; **10**: 143–155.

20. Owuor JOA, Locke A, Heyman B. When talking or not talking becomes a risk: a grounded theory study exploring the impact of HIV on immigrant black African families in the UK *Sex Transm Infect* 2013; **89**: A302.

21. Green G, Sobo EJ. *The endangered self: managing the social risks of HIV*. London; NY: Routledge, 2000.

22. Public Health England. HIV in the United Kindom: 2014 Report. PHE. Available at: assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/401662/2014_PHE_HIV_annual_report_draft_Final_07-01-2015.pdf (accessed October 2018).

23. Kippax S, Stephenson N. Meaningful evaluation of sex and relationship education. *Sex Edu* 2005; **5**.

24. Amaro H. Love, sex, and power; considering women's realities in HIV prevention. *Am Psychol* 1995; **50**: 437–447.

25. Rosenthal D, Gifford S, Moore S. Safe sex or safe love: competing discourses? *AIDS Care* 1998; **10**: 35–47.

Correspondence: Mohamed Kemoh Rogers
Kemoh.Rogers@uea.ac.uk