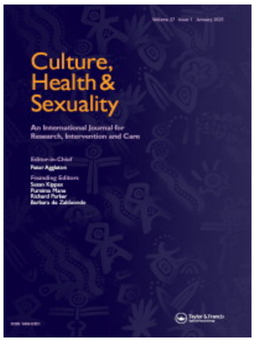

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Informed, but uncertain: managing transmission risk and isolation in the 2022 mpox outbreak among gay and bisexual men in Australia

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ABSTRACT

In 2022, a global outbreak of mpox (formerly ‘monkeypox’) emerged in non-endemic countries, including Australia, predominantly affecting gay, bisexual and other men who have sex with men. Public health advice on transmission and isolation emerged rapidly from different sources, sometimes conflicting and producing uncertainty. Using the concept of ‘counterpublic health’, which acknowledges the incorporation of official science and experiences of affected communities into embodied practice, this paper investigates how people affected by mpox in Australia managed risk of transmission and navigated self-isolation. In-depth interviews were conducted with 16 people: 13 people diagnosed with mpox and three close contacts. All participants were cisgender gay and bisexual men living in Australia. Participants thought critically about public health advice, often finding it restrictive and unresponsive to the needs of people with mpox. Participants’ decisions about reducing mpox risk and isolating often drew on experiences with other infections (i.e. HIV; COVID-19) and were made collaboratively with the people closest to them (e.g. partners, friends, family) to sustain relationships. Future public health responses to infectious disease outbreaks would benefit from identifying more opportunities to formalise and embed mechanisms to obtain feedback from affected communities so as to inform responses.

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Introduction

In 2022, a global outbreak of mpox (formerly 'monkeypox') emerged in non-endemic countries, including Australia, predominantly affecting gay and bisexual men and other men who have sex with men (Mitjà et al. 2023). There was debate about modes of transmission and how to communicate risk to the public (Girometti et al. 2022), including whether the virus should be considered a sexually transmissible infection (STI), and how this would impact those affected by the outbreak (Garcia-Iglesias et al. 2022; Hazra and Cherabie 2023). Prior to this outbreak, evidence indicated that mpox was largely transmitted through close contact within households (Heymann, Szczeniowski and Esteves 1998), with limited evidence of sexual transmission (Ogoina et al. 2019).

It is important to examine the (sub)cultural changes that occur in response to stigmatised viral outbreaks that impact socially marginalised groups (Garcia-Iglesias et al. 2022; Murphy et al. 2023). For mpox, this means considering how gay and bisexual men interpreted and accounted for risk when official advice changed rapidly and evidence emerged that transmission was overwhelmingly occurring through sexual contact (Thornhill et al. 2022). From the beginning of the COVID-19 pandemic, gay and bisexual men around the world, including Australia, reduced the transmission of COVID-19 by reducing sexual activity (Hammoud et al. 2020; Holloway et al. 2021; Storer et al. 2023). However, research also showed that many such men drew on strategies from HIV prevention to generate creative ways of reducing COVID-19 risk that allowed sex to continue (e.g. restricting sex to known partners) (Hakim, Young, and Cummings 2022; Murphy et al. 2023). Evidence from the UK early in the 2022 mpox outbreak showed that gay and bisexual men engaged with information from a range of sources to contextualise their understanding of risk and protect themselves and others (May et al. 2023; Paparini et al. 2023), particularly when official advice differed by country, local jurisdiction, and over time. The early response to mpox in Australia was supported by community engagement and the activation of key partnerships between community organisations, government and medical professionals who proactively worked to combat stigma (Cornelisse et al. 2023). However, accessing credible and non-stigmatising health information through mass and social media was challenging, and both misinformation and stigmatising accounts of gay and bisexual men were common (Garcia-Iglesias, May, et al. 2023; Owens and Hubach 2023). This stigma was present for gay and bisexual men diagnosed with mpox throughout their period of illness and beyond (Smith et al. 2024; Witzel et al. 2024).

The 2022 mpox outbreak was not the first viral outbreak that required gay and bisexual men to process knowledge quickly to inform changes to sexual practices and sociality. In describing behaviour change among gay men after the introduction of highly active antiretroviral therapy for HIV, Race (2003) illustrated how medical and embodied knowledge were harnessed by gay and bisexual men to create and sustain practices of HIV prevention and risk reduction to enable sex and sociality to continue, *via* a process of counterpublic health. In the words of Race (2003), 'successful behaviour change is not one of compliance with predetermined health directives but of the selection and actualisation of practices whose sustainability has derived from processes of reflexive mediation between embodied habits and medical opinion' (377). This acknowledges that the most successful HIV prevention strategies among gay and bisexual men evaluate official science and public health recommendations against community needs and lived experience, to identify acceptable, sustainable strategies (Kippax and Race 2003). Similarly, combining science and lived experience into embodied practice was a strategy to cope with the COVID-19 pandemic (Daroya et al. 2023; Murphy et al. 2023). These examples highlight that responses to transmissible infections do not occur solely at the individual level. Rather, there is an embodied relationality between those living with and impacted by viruses (e.g. family members, relationship and intimate partners) who all contribute to and embody an experience of the virus, in dialogue with official proclamations and scientific knowledge (Persson et al. 2022).

In this paper, we investigate the question, how did people affected by mpox in Australia manage risk of onward transmission and navigate self-isolation? We argue that the decisions participants made about managing risk and isolation were embodied, affective, and relational, referencing past and recent collective responses to viral crises, emerging scientific knowledge and official recommendations, and uncertainty.

Methods

This study was designed to document the health and social experiences of people affected by mpox using qualitative in-depth interviews. We recruited participants by inviting respondents who consented to be contacted from an online survey about mpox during August–September 2022 (MacGibbon et al. 2023), as well as snowball sampling. Eligible participants were living in Australia; aged 18 years or older; and diagnosed with mpox in 2022 or a close contact of someone diagnosed with mpox (a sexual partner or household contact). Participants were offered AUD$50 compensation for their time. Our study was approved by the UNSW Human Research Ethics Committee (HC220484) and the ACON Research Ethics Review Committee (202214). All participants provided written or verbal consent to be interviewed.

AKJS conducted initial interviews between October–December 2022, and follow-up interviews between April-May 2023 using semi-structured interview guides. This analysis used data from the initial interviews. Interviews were conducted by videoconferencing, telephone, or in person. Pseudonyms were chosen by participants. Participants were asked about their experiences of mpox illness or being a close contact; diagnosis, isolation, care, and recovery; disclosure, support networks, and long-term effects of mpox, along with demographic questions. Interviews were audio-recorded, professionally transcribed, checked for accuracy, de-identified and organised for analysis with the assistance of NVivo software (14.23.1).

We interviewed 16 participants; 13 people diagnosed with mpox and three close contacts. Participants diagnosed with mpox were all cisgender men, mostly gay (with two bi + men) and aged between 25–56 years old (mean 43 years). Participants' countries of birth were: Australia (*n* = 5); Aotearoa New Zealand (*n* = 2); the United Kingdom (*n* = 2); with one each from Western Europe, Canada, the USA, and South Africa. All participants reported Anglo or European heritage. Most participants lived in Australia's two most populous states, New South Wales (*n* = 7) and Victoria (*n* = 4), with one each in Queensland and South Australia. One participant diagnosed with mpox was living with HIV, and all other participants were HIV-negative. Participants diagnosed with mpox received their diagnosis in July (*n* = 8) and August (*n* = 5) 2022, with the majority acquiring mpox overseas (*n* = 11) and two in Australia. Two close contacts were partners of people diagnosed with mpox, and one a housemate of someone diagnosed with mpox. All close contacts were cisgender gay men. Mpox illness among diagnosed participants ranged from mild to severe, which we have detailed elsewhere (Smith et al. 2024). Irrespective of illness severity among participants diagnosed with mpox, they each engaged with public health requirements in domestic or international contexts that contributed to their experience of mpox infection.

Our analytic approach was informed by reflexive thematic analysis (Braun and Clarke 2019). AKJS kept fieldnotes summarising key topics from interviews which developed preliminary analyses and guided data conceptualisation. DS and AKJS developed a coding framework based on research questions and reading interview transcripts. DS refined the coding framework through the process of coding transcripts. DS developed descriptive summaries of each code that were used for initial theme development. The broader author team contributed to thematic development through workshops. We draw on concepts that centred embodiment and relationality to draw out the breadth of mpox infection and illness more broadly, particularly creative and collective responses to a stigmatised viral infection (Persson et al. 2022; Race 2003). This allowed our analysis to focus on the complexity of experience and decision making of people diagnosed with mpox and their close contacts when managing risk and isolation.

Findings

We present our findings under three themes. First, we investigate how participants interpreted the changing and often conflicting information about mpox. Secondly, we consider the relational aspects of mpox risk and illness management. Finally, we focus on how histories of managing viral risk (i.e. HIV and COVID-19) informed participants' responses to mpox.

Interpreting conflicting viral information in practice

Questioning public health guidance

Participants described hearing, seeing or receiving a range of isolation-related guidance from official sources. This included isolating for up to three weeks, isolating until the lesions had scabbed over and fallen off, and ceasing isolation when fever had been absent for 72 h and no new lesions had appeared. Making assessments about information from a range of sources, participants took what we describe as a 'commonsense approach' to reducing transmission risk. That is, participants interpreted conservative public health advice to manage risk in ways that were adaptable for them. For example, participants diagnosed with mpox while they were overseas found it hard to adhere to self-isolation requirements but ensured they covered lesions when out in public (this advice came from a range of sources in participant accounts, i.e. clinicians, social media, and anecdotes), some wore masks when travelling between countries or when outside of their home, and all avoided sexual contact until lesions had healed and scabs fallen off. In contrast to advice received overseas, public health guidance from Australian jurisdictional authorities was viewed as rigid and disruptive, and participants often developed their own heuristics for navigating risk and isolation. For example, Matt, who was diagnosed with mpox and his husband who was not, did not fully isolate from one another:

> [We] had just spent two weeks together. We didn't really see the point […] like, why am I going to lock myself in the bedroom when we just spent two weeks together? So, I did sleep in the other bedroom. […] I used the other bathroom, but you know, we cooked meals together and we sat on the opposite ends of the couch together, which is way more separation than we had put between ourselves in Europe.

Although Matt and his husband had adapted advice to suit their personal circumstances while travelling, he still observed some recommended precautions. Australian mpox guidelines emphasised isolation and that people with mpox should only leave home 'for essential activities' (CDNA (Communicable Diseases Network Australia) 2022), which included buying groceries and medications or exercising outdoors while wearing a face mask, covering lesions, and avoiding close physical contact.

Leo, who was diagnosed overseas, questioned isolation requirements after he spent time with his housemate overseas, but was told he was not able to isolate at home with her upon returning to Australia. Leo queried this advice but was dismissed due to the lack of information healthcare providers had about his risk of transmission, '[they kept saying] "But we don't know. We don't know. We don't know."' While Leo was told there was not enough information about his risk of transmission, Brady, who also received his diagnosis overseas, recounted a conversation where he received conflicting information about transmission risk and isolation requirements from an overseas health service:

> All they were interested in were people I'd had sex with, and when I asked them about that, they said, "Look, we have a lot of data from Madrid and what we're seeing is that unless you're having sex with somebody, there's a very low chance that you will get this." […] So, what that said to me was if I can't give it to somebody from kissing [partners], then I don't feel like I need to stay in this apartment for 21 days and not go outside.

Brady interpreted the variations in advice he received and made use of them to choose strategies for different settings, developing his own approach to risk reduction.

Following acute mpox illness, after lesions had scabbed over and fallen off, the advice in Australia was to avoid condomless penetrative sex for up to 12 weeks, due to potential for transmission through semen[1] (CDNA 2022). Some participants had already recommenced sex as they did not receive this advice prior to returning to Australia: 'when we got back to Australia and we heard that advice […], we just kind of looked at each other and went, "Whoops! Well …" That didn't turn out to be a problem.' [Brady]. The way the guidance was written implied that 'sex' was penile penetration and ejaculation and did not acknowledge other sexual practices. Ronald took issue with this delimiting advice:

> it's very presumptive of the government to assume that everyone's fucking. [laughs] […] I can just choose to ignore that and just not fuck and I can fist. […] if you're going to give advice, give proper advice, not just like heteronormative, 'everybody fucks' sort of advice. You're dealing with the gay community.

Ronald asserted that guidance about sexual risk following mpox should have harnessed gay and bisexual men's expertise in their own sex lives by recognising a variety of sexual practices beyond penile penetrative sex and ejaculation. Ronald's assertion brings to mpox what Douglas Crimp articulated of gay men's approaches to safe sex throughout the AIDS crisis, 'We were able to invent safe sex because we have always known that sex is not, in an epidemic or not, limited to penetrative sex' (2002, 64).

In contrast, Leo initiated a discussion with a clinician to understand the risk of mpox transmission for different sexual practices after his mpox lesions on his thighs had scabbed over and fallen off:

> Like the Head of Infectious Diseases went through a list of sexual acts that I could perform and what I couldn't perform. […] And she was so chill about it. She was just like, "Yes. You can give a rim job. Yes, you can get a rim job. No, people can't perform fellatio on you, but you can give it," and I was like, "Bless [you], babes!"

Although reassured by this open conversation which highlighted the risk his semen may pose to sexual partners, Leo was ultimately cautious and concerned about transmission even beyond the recommended 12-week period:

> I think it's just in the back of my mind and then I just think about the shit that I went through, and I just wouldn't want someone to go through that. […] I'm not saying I haven't had sex or anything like that since then but it's just like before if someone gave me a look and gave me a drink, I'd probably be like, "Alright, let's go home."

Compared to before mpox infection, Leo had become much more reserved about sex. Participants were highly conscious of the public health advice they had received, but often found it to be restrictive or inconsistent, lacking consideration of the experience of mpox illness and the breadth of sexual practices gay and bisexual men engaged in. Consequently, most participants sought further information and advice to inform their risk reduction and isolation practices.

Incorporating different evidence

Some of the sources of information that participants used to inform decisions about mpox risk reduction and isolation were from academic journals and other countries' health authorities, or what they often referred to as 'doing their own research' (Epstein 1998; Rosengarten 2009). Many mentioned Thornhill et al. (2022) paper, published in the *New England Journal of Medicine* (NEJM). This paper was the first international compilation of cases in the 2022 outbreak and offered reassurance to participants about the low likelihood of mortality among people in non-endemic countries. It was also strongly suggestive that sexual contact was the primary transmission route in the outbreak. Paul, who developed a distrust of health authorities due to his poor experience with contact tracers, said, 'I wasn't really believing anything [the state health department] was doing. I was reading [the advice given by the US] Center[s] for Disease Control. I was reading medical journals.' Seeking out multiple alternative sources of information was integral to many participants' experiences and understanding of mpox. Calvin also read the NEJM paper, which reassured him about mpox transmission but conflicted with the local public health guidance he received:

> no one's getting it from aerosols, no one's caught it from being a flat mate, […] but you're reading stuff that maybe it's not what you're reading in the news. It's something else and the health officials are probably being way over-cautious.

Tom also sought out research related to the onset of symptoms after he was notified about mpox by a sexual partner, prior to his own diagnosis. This shaped how Tom approached risk management and his self-monitoring of symptoms:

> I then did my own research [about] the exposure period, and if [mpox infection] is going to happen, it'll happen within 20 days of having been with that guy or the guys that we shared that night with, where we both probably got it at the same time. So, I guess this [sexual partner], he developed his symptoms within a week, and I realised that, "Okay, well, I need to go at least 20 days here of no physical contact in case I develop symptoms." So, I continued going to work [after realising] that wasn't really a high-risk activity.

Understanding the window period for symptoms allowed Tom to identify different levels of risk associated with activities and to take appropriate precautions to protect others.

Some participants actively observed, through their social networks, the experience of other people diagnosed with mpox to gauge the risk of onward transmission. For example, Brady knew of 'people being in very close contact with somebody for the duration of their time when they had [mpox] and not getting it'. Access to and the ability to share lived experience of mpox was an important aspect of managing the virus for many participants. Often, information gleaned from peers was as important for participants as scientific evidence and, sometimes, conflicted with advice from health authorities. Calvin found the NEJM article very helpful, but he also wanted to hear about the experience of other people who had mpox: 'I was craving [experiential] information and reassurance, and even if it was going to be bad, I still wanted to know from someone now and real.' Calvin wanted to compare and share his experience of mpox with others and was able to do so by identifying and contacting someone in the US who had mpox through social media.

While participants diagnosed with mpox wanted to share and hear about experiences of mpox illness they also wanted to inform wider communities of gay and bisexual men and people who might be at risk. Participants recounted sharing their experience publicly through social media 'trying to sort of put it out there like if you've got symptoms, if you've got a fever, if you've got whatever, go and get checked' [Daniel]. Experience was used as a form of health promotion, or counterpublic health, for people who were at risk. Care among gay and bisexual men in this outbreak went beyond the self, and employed embodied experiences of prevention, to educate others about the virus.

Risk management and isolation as relational

Mpox illness did not only affect the lives of those diagnosed but also people in close proximity to them: relationship and sexual partners, housemates, family, and friends. This proximity meant contemplating the effect of mpox on relationships throughout and beyond the period of illness. Accounts of care for relationship partners were common, including for Arthur, a close contact, whose partner had mpox while they were travelling. The support Arthur provided his partner throughout his partner's illness was affirming for their relationship, including putting aside his own fears about infection:

> I think the biggest thing was it was a test for me, I guess, to see how I'd react in that situation where my partner was sick and needed to be cared for, and not just that, but also support him when he was struggling with the emotional impact of it.

While proximity was important, distance also played a role in participants' accounts. Lucien, who had been diagnosed with mpox while travelling, had a partner in Australia who was also diagnosed with mpox. Lucien and his partner drew on their experience and publicly available research to decide how best to support each other even while they were geographically separated: 'we were very much comparing his experience, my experience and all the data we can get from American experiences and whatever and trying to cobble together how risky it was for him to interact with people or not.' This highlights the importance participants placed on sharing and digesting the experience of others diagnosed with mpox, but also the relational and intersubjective aspects of responding to the experience of infection (Lupton 2013; Persson et al. 2022). Like COVID-19, but unlike the early response to AIDS, this engagement with the experience of others was often made possible by digital communication between countries.

Connection with relationship and sexual partners was important for support among participants diagnosed with mpox. Although Tom was concerned about transmission to someone he had been dating, they stopped having sex and found other ways to connect: 'We stopped having sex and we'd still have sleepovers, but it was basically holding hands with our pyjamas on for several weeks [laughs]. […] You know, just looking after each other, I guess.' Like Lucien and his partner, care for Tom was not one-sided but something he and his partner actively shared responsibility for. Most participants diagnosed with mpox were either travelling with partners or friends, isolating with partners or housemates, but some were isolating alone. This was a lonely experience for Daniel:

> I was really alone. [My partner and I have] never been apart for more than two weeks and suddenly he's on a three-month holiday and, he's like three weeks into the holiday […] and I'm on my own and I'm struggling.

Isolating and dealing with mpox alone amplified the awareness of time and feelings of distance between Daniel and his partner who was overseas throughout Daniel's mpox infection. Daniel's account, however, reiterates the perceived importance of close, caring relationships in times of illness. At the time of his diagnosis, Lucien was overseas and staying with his sister, who had, to his surprise, a very supportive and non-judgemental reaction to his diagnosis: 'She was very, very cool with it'. Lucien hadn't planned on staying with his sister for long but was forced to because of isolation requirements. Lucien had characterised his previous relationship with his sister as estranged, although he assumed she would be supportive throughout his period of illness:

> this experience made me realise that when it comes to facing a challenge, family comes first, like the supporting each other comes first and the caring about each other comes first, but I kind of assumed it would be the case on paper but seeing it and experiencing it is really heart-warming.

Frustrating and stigmatising experiences with contact tracing affected both Rocco, a close contact, and his housemate who had mpox, putting pressure on their living arrangements. Rocco tried to support his housemate through isolation when at home while also employing risk reduction measures:

> Well, it put a lot of stress on our relationship because he was in isolation and he became very agitated and short […] just because of how he was treated. […] when I was [at home], I would go and get a coffee, or I'd cook him some food and I'd leave it at his door.

Even under strain, participants described relationships of care that helped them navigate mpox and isolation. For many participants diagnosed with mpox, care and risk reduction extended to others as often, if not more, than it did to themselves. Calvin was isolating at home and his best friend insisted on visiting him, 'I mean the first time when he just started coming over – he's got a key – I was really upset with him. I said, "You're an idiot! Get out!" but, he said no.' Although Calvin's friend was more concerned about Calvin's welfare than mpox transmission, Calvin took measures to help mitigate risk, 'he sat on the lounge opposite me, and we kept the windows open'. David, after being diagnosed and isolating in the UK, was conscious of the impact his isolation had on the lives of others:

> I ended up going back to a friend of mine who lives in [town in Greater London]. We're renting a room out in our flat to an ex-colleague of mine who works [with immunocompromised people], so I couldn't expose her to it because then she would have to isolate for three weeks.

Participants were cognisant of preventing transmission to others as much as they could, especially when vulnerabilities were present. This attention to care demonstrated how the experience of illness was deeply enmeshed in relations with others (Persson et al. 2022).

Informed by experience of other infections

In addition to seeking knowledge and managing risk in ways that sustained important relationships, participants often drew on their experience with other infections (particularly HIV, STIs, and more recently COVID-19) to inform how they managed mpox risk. Pete made sense of mpox by characterising it as 'in between' HIV and COVID-19 in terms of severity and risk of transmission:

> [It's] not quite [transmitted] as easily as COVID but still the notion that you can brush up against someone and get it sort of put it somewhere in between, sort of that scariness of it affecting queer communities like HIV but not being quite as contagious and broad community as COVID, […] it seemed like a sort of in-betweener.

Pete's characterisation indicated that, for him, mpox was less severe than HIV in terms of its potential impact on affected communities but had some similarities to COVID-19 in that it was easier to transmit, if in close physical contact.

As some COVID-19 isolation requirements were still in place during participants' mpox isolation periods, these provided socially acceptable reasons to conduct certain activities, such as being outside while wearing a mask:

> I was allowed to go out for an hour a day, which was great because then I had to wear a mask and then, of course, thank God, COVID was around because if there was no COVID, you'd look like a real freak. [Brady]

Some participants also employed similar language developed in response to COVID-19 when referring to managing mpox: they discussed postponing group sex events and avoiding large social events, for fear of them turning into mpox 'superspreader' events. The term 'superspreader' had often been used when COVID-19 outbreaks affecting multiple people could be linked through contact tracing to a single event. The recency of COVID-19 gave participants a point of reference to help make sense of the mpox outbreak, encouraging comparisons with COVID-19's transmissibility, and providing public health jargon and colloquial vernacular that were redeployed to describe mpox.

Mpox and HIV were also compared in participants' accounts, often through a shared history or imaginary of gay and bisexual men '[living] through the HIV crisis and AIDS' [Miller]. The prospect that mpox might affect many more people (with potentially unknown long-term effects) prompted some participants diagnosed with mpox to make their peers aware 'that we need to take this seriously, that this could really escalate' [Miller], while also acknowledging that HIV meant that gay and bisexual men had a history of responding to and being proactive about their sexual health. Participants often commented on the effectiveness of community mobilisation by marking out experience with infectious diseases:

> I think we're really good at talking about stuff and educating each other and the vaccine rollout was like people telling each other, "Let's go get vaccinated. Like let's all go today," you know, people were doing stuff like that, which I don't think in the general population, that would've occurred. [Daniel]

For Daniel, the comparison of gay and bisexual men's actual response to an imagined response among the 'general population' was contingent on the history of community responses to HIV and the willingness of affected communities to actively mobilise and change behaviour. This active community discussion and development of practical strategies to address a new viral infection is a marker of counterpublic health (Race 2003).

Prior to the 2022 mpox outbreak, gay and bisexual men in Australia had recent experience of altering their socio-sexual behaviour in response to COVID-19 restrictions (Hammoud et al. 2020; Storer et al. 2023). However, some participants were frustrated with the community response to mpox and did not fully appreciate its logic, such as keeping sex on premises venues (SOPVs) open for mpox outreach activities (e.g. vaccination):

> shutting the doors on places like that [SOPVs] doesn't necessarily have the impact that I thought it could […] my initial thing is like, "Well, they need to shut their doors for a few

> weeks", but you know that's my naïve knowledge of how these things work perhaps. [Tom]

Making use of sites where gay and bisexual men have sex for health promotion was a foreign concept to Tom at first. During COVID-19 restrictions, most commercial premises shut to the public for months at a time. So, the potential closure of SOPVs for a few weeks when mpox emerged did not seem like a major imposition to curb community transmission of mpox for participants like Tom. However, the discussion of closing SOPVs echoed fierce debates from the early years of HIV (Epstein 1998), where it had become politically important to protect these sites as places of socio-sexual congregation, and as places that could be harnessed to deliver education and health promotion. Other participants employed practices historically used to curb the transmission of STIs such as notifying partners about their mpox diagnoses – often termed contact tracing or partner notification in clinical settings – that are seen as practices of care within some sexual networks:

> It kind of felt like gays have always been ahead of the curve when it comes to contact tracing just because we're worried so much with STIs. So, it just felt like, "Okay, this is something I need to let people know about as soon as I can." [Brady]

Here, Brady refers to the practice as something common to gay and bisexual men. Partner notification can be experienced by gay and bisexual men as a courtesy and practice of care, as evidenced in Brady's account, reflecting a sense of moral responsibility for the health of others aimed at interrupting disease transmission (Lohan, Coleman, and Begley 2009).

Discussion

Information about mpox evolved throughout the 2022 outbreak, with public health authorities, researchers, clinicians, patients, close contacts and affected communities, all contributing to the changing response (Cornelisse et al. 2023). This 'simultaneous process of co-production' (Lancaster, Rhodes, and Rosengarten 2020, 478) was reflected in participants' accounts of uncertainty about how to manage mpox transmission risk and isolation. However, this uncertainty also prompted creativity, information seeking, evaluation of guidance from authorities, and sharing experiences of mpox with peers. Information was circulated and appraised from a range of sources with participants making value judgements about the validity and appropriateness of the information for how they and their communities responded to mpox (Race 2003). Participants used this information to formulate understandings of transmission risk and isolation requirements and adapted this knowledge to fit their personal circumstances. Decisions about reducing mpox risk and how best to isolate often drew on experiences with other infectious diseases (i.e. HIV, COVID-19) signalling that gay and bisexual men have a repertoire of prevention strategies to draw from to inform how they respond to emerging viral infections, especially when they impact their socio-sexual lives. Comparisons with COVID-19 and HIV placed mpox 'in between' these conditions in terms of perceived severity and anticipated stigma. Participants were concerned about mpox's visual symptoms and judgement for acquiring it sexually, but recognising mpox was less severe than HIV, which is a lifelong infection. Participants' decisions about managing mpox were made intersubjectively with the people closest to them, to sustain relationships with partners, friends, family members and housemates (Lupton 2013; Persson et al. 2022).

These findings strengthen what is known from research on HIV and COVID-19 that gay and bisexual men are highly engaged with their sexual health and work to maintain social and sexual relationships when these are threatened by infectious diseases (Hakim, Young, and Cummings 2022; Kippax and Race 2003; Murphy et al. 2023; Race 2003). Gay and bisexual men develop their own rationalities and practices not purely for self-preservation but also to protect the health and well-being of peers, loved ones, and the broader community (Lupton 2013; Persson et al. 2022; Race 2003). Also, gay and bisexual men often feel responsible for protecting their sexual partners. This responsibility is enacted through devising methods of protection that are compatible with social and sexual relations. Gay and bisexual men evaluate and prioritise what they see as necessary, acceptable and moral (Haire et al. 2021) in circumstances such as the mpox outbreak (MacGibbon et al. 2023). Many participants valued learning from the experience of others affected by mpox which provided validating evidence about transmission and how to manage 'living with' mpox. It also contributed to participants developing their own sense of 'evidence-enough' (Lancaster, Rhodes, and Rosengarten 2020), drawing on personal and peer experiences and scientific literature to make decisions about acceptable risks and isolation practices. However, these decisions made within epidemics or outbreaks also draw on a long history of HIV and other infections in which medical, scientific and policy information are evaluated and put into embodied practice by patients and affected community members (Rosengarten 2009), as they build on 'past forms of HIV [and other infections] epistemologies' (Møller and Ledin 2021, 150). This was evidenced by participants' practical responses to mpox derived from previous community and public health responses, such as partner notification, risk reduction strategies, and mobilising peer knowledge.

Our findings support Garcia-Iglesias, Williams, et al. (2023)'s analysis in the UK context that information provided to communities at risk of mpox was often judged to be inconsistent and insufficient. This prompted people affected by or at risk of mpox to consult with peers and engage with social media to obtain what they saw as adequate information. Our participants perceived local public health guidance in Australia as rigid, which appeared to be appropriate medically but often overlooked the practicalities of how to apply directives in real-world situations. This prompted participants to carry out evaluation and adaptation of the guidelines, to fit in with personal and relational circumstances. However, we acknowledge that official public health advice must navigate bureaucratic, medical, legal and political considerations in addition to the people this advice directly affects. Public health is obliged to wait for multiple published sources which can lead to a lag in updating advice and excessive caution, as reported by some of our participants. Indeed, a World Health Organization (WHO) (CRR and HHS 2023) technical brief found that those most affected by the mpox outbreak made risk-informed decisions before changing their behaviour that included accounting for levels of local mpox transmission and vaccination, without exclusively relying on official guidance. Some mpox guidance was characterised as heteronormative and limited in the sexual practices it acknowledged, a critique that has also been made about public health guidance during COVID-19 (Pienaar et al.

2021). This supports our finding that participants made decisions about mpox risk and isolation based on their personal circumstances and experiences, their engagement with the scientific literature, and sharing knowledge with peers. The WHO (CRR and HHS 2023) technical brief acknowledged that people were concerned about transmitting mpox to others, but also the negative impacts of isolation on day-to-day activities, social life, and wellbeing. Participants managed and negotiated this distress through their embodied connections to the people closest to them (Persson et al. 2022). This highlights the importance of attending to how infection is relational and navigated collectively within close relationships (Persson et al. 2022).

Conclusion

Gay and bisexual men continue to imagine and create ways of engaging with sexuality and sociability that account for potential infections but remain affirming and pleasurable. Sexual sociability is an important part of many gay and bisexual men's social connection and wellbeing. We argue that, similar to responses to HIV and COVID-19 (Hakim, Young, and Cummings 2022; Murphy et al. 2023; Race 2003), throughout the 2022 mpox outbreak gay and bisexual men developed a counterpublic health by attending to the varied and inconsistent information available, thoughtfully navigating the relationships that mattered to them, evaluating acceptable strategies, and developing a response to an unfamiliar viral threat that drew on their knowledge and experience of past viral crises. In developing this counterpublic health, participants, at least in part, re-negotiated top-down approaches that were, in retrospect, overly restrictive, cautious about social or sexual contact, or neglected sexual health, pleasure and wellbeing when emphasising infection control and public health. Therefore, future public health responses to infectious disease outbreaks would benefit from identifying more opportunities to formalise and embed mechanisms to obtain real-time feedback from affected communities and their close contacts to inform official responses.

Note

1. Mpox transmission by exposure to semen is likely possible due to high positivity of mpox DNA in seminal fluid (Reda et al. 2023). However, it is unclear whether this is a significant driver of transmission.

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References

Braun, V., and V. Clarke. 2019. “Reflecting on Reflexive Thematic Analysis.” *Qualitative Research in Sport, Exercise and Health* 11 (4): 589–597. https://doi.org/10.1080/2159676X.2019.1628806.

CDNA (Communicable Diseases Network Australia). 2022. *Monkeypox Virus Infection – CDNA National Guidelines for Public Health Units*. Canberra, Australia: Australian Government Department of Health and Aged Care. https://www.health.gov.au/sites/default/files/2022-12/monkeypox-virus-infection-cdna-national-guidelines-for-public-health-units.pdf

Cornelisse, V. J., D. Heath-Paynter, V. Delpech, P. Read, A. Apostolellis, N. A. Medland, C. Raina MacIntyre, M. Giola, and M. Kidd. 2023. “How Australia and Aotearoa New Zealand Avoided Large-scale Mpox (Formerly Monkeypox) Outbreaks in 2022–2023.” *Internal Medicine Journal* 53 (10): 1732–1738. https://doi.org/10.1111/imj.16236.

Crimp, D. 2002. “How to Have Promiscuity in an Epidemic.” In *Melancholia and Moralism: Essays on AIDS and Queer Politics*, 43–82. Cambridge, MA: MIT Press.

CRR (Community Readiness and Resilience) and HHS (Global HIV Hepatitis and STIs Programmes). 2023. “Community Experiences of the 2022-2023 Mpox Outbreak in Europe and the Americas.” https://iris.who.int/bitstream/handle/10665/371663/9789240077287-eng.pdf?sequence=1

Daroya, E., C. Grey, D. Lessard, B. Klassen, S. Skakoon-Sparling, M. Gaspar, A. Perez-Brumer, B. Adam, N. J. Lachowsky, D. Moore, et al. 2023. “‘I Did Not Have Sex Outside of Our Bubble’: Changes in Sexual Practices and Risk Reduction Strategies Among Sexual Minority Men in Canada During the COVID-19 Pandemic.” *Culture, Health & Sexuality* 25 (9): 1147–1163. https://doi.org/10.1080/13691058.2022.2139414.

Epstein, S. 1998. *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley and Los Angeles, California: University of California Press.

Garcia-Iglesias, J., T. May, M. Pickersgill, J. Williams, M. Nagington, S. Buijsen, C. McHugh, and J. Horwood. 2023. “Social Media as a Public Health Tool During the UK Mpox Outbreak: A Qualitative Study of Stakeholders’ Experiences.” *BMJ Public Health* 1 (1): e000407. https://doi.org/10.1136/bmjph-2023-000407.

Garcia-Iglesias, J., J. Williams, T. May, S. Buijsen, C. McHugh, J. Horwood, M. Pickersgill, J. Chataway, and R. Amlôt. 2023. “Responding to Mpox: Communities, Communication, and Infrastructures.” https://theippo.co.uk/wp-content/uploads/2023/03/Responding-to-Mpox.pdf

Garcia Iglesias, J., M. Nagington, M. Pickersgill, M. Brady, C. Dewsnap, L. Highleyman, F. J. Membrillo de Novales, W. Nutland, S. Thrasher, E. Umar, et al. 2022. “Is Monkeypox an STI? The Societal Aspects and Healthcare Implications of a Key Question.” *Wellcome Open Research* 7: 252. https://doi.org/10.12688/wellcomeopenres.18436.1.

Girometti, N., R. Byrne, M. Bracchi, J. Heskin, A. McOwan, V. Tittle, K. Gedela, C. Scott, S. Patel, J. Gohil, et al. 2022. "Demographic and Clinical Characteristics of Confirmed Human Monkeypox Virus Cases in Individuals Attending a Sexual Health Centre in London, UK: An Observational Analysis." *The Lancet. Infectious Diseases* 22 (9): 1321–1328. https://doi.org/10.1016/S1473-3099(22)00411-X.

Haire, B., D. Murphy, L. Maher, I. Zablotska-Manos, S. Vaccher, and J. Kaldor. 2021. "What Does PrEP Mean for 'Safe Sex' Norms? A Qualitative Study." *PloS One* 16 (8): e0255731. https://doi.org/10.1371/journal.pone.0255731.

Hakim, J., I. Young, and J. Cummings. 2022. "Sex in the Yime of Coronavirus: Queer Men Negotiating Biosexual Citizenship During the COVID-19 Pandemic." *Continuum* 36 (2): 289–301. https://doi.org/10.1080/10304312.2021.1992350.

Hammoud, M. A., L. Maher, M. Holt, L. Degenhardt, F. Jin, D. Murphy, B. Bavinton, A. Grulich, T. Lea, B. Haire, et al. 2020. "Physical Distancing Due to COVID-19 Disrupts Sexual Behaviors Among Gay and Bisexual Men in Australia: Implications for Trends in HIV and Other Sexually Transmissible Infections." *Journal of Acquired Immune Deficiency Syndromes (1999)* 85 (3): 309–315. https://doi.org/10.1097/QAI.0000000000002462.

Hazra, A., and J. N. Cherabie. 2023. "Is Mpox a Sexually Transmitted Infection? Why Narrowing the Scope of This Disease May Be Harmful." *Clinical Infectious Diseases: An Official Publication of the Infectious Diseases Society of America* 76 (8): 1504–1507. https://doi.org/10.1093/cid/ciac962.

Heymann, D. L., M. Szczeniowski, and K. Esteves. 1998. "Re-emergence of Monkeypox in Africa: A Review of the Past Six Years." *British Medical Bulletin* 54 (3): 693–702. https://doi.org/10.1093/oxfordjournals.bmb.a011720.

Holloway, I. W., A. Garner, D. Tan, A. M. Ochoa, G. M. Santos, and S. Howell. 2021. "Associations Between Physical Distancing and Mental Health, Sexual Health and Technology Use Among Gay, Bisexual and Other Men Who Have Sex With Men During the COVID-19 Pandemic." *Journal of Homosexuality* 68 (4): 692–708. https://doi.org/10.1080/00918369.2020.1868191.

Kippax, S., and K. Race. 2003. "Sustaining Safe Practice: Twenty Years On." *Social Science & Medicine* 57 (1): 1–12. https://doi.org/10.1016/S0277-9536(02)00303-9.

Lancaster, K., T. Rhodes, and M. Rosengarten. 2020. "Making Evidence and Policy in Public Health Emergencies: Lessons From COVID-19 for Adaptive Evidence-Making and Intervention." *Evidence & Policy* 16 (3): 477–490. https://doi.org/10.1332/174426420X15913559981103.

Lohan, M., C. Coleman, and C. M. Begley. 2009. "Regulating Sexual Bodies or Addressing Health Needs? Men Who Have Sex With Men and Partner Notification." *Critical Public Health* 19 (3–4): 325–339. https://doi.org/10.1080/09581590902906211.

Lupton, D. 2013. "Risk and Emotion: Towards an Alternative Theoretical Perspective." *Health, Risk & Society* 15 (8): 634–647. https://doi.org/10.1080/13698575.2013.848847.

MacGibbon, J., V. J. Cornelisse, A. K. J. Smith, T. R. Broady, M. A. Hammoud, B. R. Bavinton, D. Heath-Paynter, M. Vaughan, E. J. Wright, and M. Holt. 2023. "Mpox (Monkeypox) Knowledge, Concern, Willingness to Change Behaviour, and Seek Vaccination: Results of a National Cross-Sectional Survey." *Sexual Health* 20 (5): 403–410. https://doi.org/10.1071/SH23047.

May, T., L. Towler, L. E. Smith, J. Horwood, S. Denford, G. J. Rubin, M. Hickman, R. Amlôt, I. Oliver, and L. Yardley. 2023. "Mpox Knowledge, Behaviours and Barriers to Public Health Measures Among Gay, Bisexual and Other Men Who Have Sex With Men in the UK: A Qualitative Study to Inform Public Health Guidance and Messaging." *BMC Public Health* 23 (1): 2265. https://doi.org/10.1186/s12889-023-17196-0.

Mitjà, O., D. Ogoina, B. K. Titanji, C. Galvan, J.-J. Muyembe, M. Marks, and C. M. Orkin. 2023. "Monkeypox." *The Lancet (London, England)* 401 (10370): 60–74. https://doi.org/10.1016/S0140-6736(22)02075-X.

Møller, K., and C. Ledin. 2021. "Viral Hauntology: Specters of AIDS in Infrastructures of Gay Sexual Sociability." In *Affects, Interfaces, Events*, edited by Bodil M.S Thomsen, Jette Kofoed and Jonas Fritsch, 147–162. Lancaster, PA and Vancouver, BC: Imbricate! Press.

Murphy, D., J. Ellard, L. Maher, P. Saxton, M. Holt, B. Haire, A. Grulich, B. Bavinton, S. Philpot, A. Bourne, et al. 2023. "How to Have Sex in a Pandemic: The Development of Strategies to Prevent COVID-19 Transmission in Sexual Encounters Among Gay and Bisexual Men in

Australia." *Culture, Health & Sexuality* 25 (3): 271–286. https://doi.org/10.1080/13691058.2022.2037717.

Ogoina, D., J. Hendris Izibewule, A. Ogunleye, E. Ederiane, U. Anebonam, A. Neni, A. Oyeyemi, E. N. Etebu, and C. Ihekweazu. 2019. "The 2017 Human Monkeypox Outbreak in Nigeria—Report of Outbreak Experience and Response in the Niger Delta University Teaching Hospital, Bayelsa State, Nigeria." *PloS One* 14 (4): e0214229. https://doi.org/10.1371/journal.pone.0214229.

Owens, C., and R. D. Hubach. 2023. "An Exploratory Study of the Mpox Media Consumption, Attitudes, and Preferences of Sexual and Gender Minority People Assigned Male at Birth in the United States." *LGBT Health* 10 (5): 401–407. https://doi.org/10.1089/lgbt.2022.0251.

Paparini, S., R. Whitacre, M. Smuk, J. Thornhill, C. Mwendera, S. Strachan, W. Nutland, and C. Orkin. 2023. "Public Understanding and Awareness of and Response to Monkeypox Virus Outbreak: A Cross-Sectional Survey of the Most Affected Communities in the United Kingdom During the 2022 Public Health Emergency." *HIV Medicine* 24 (5): 544–557. https://doi.org/10.1111/hiv.13430.

Persson, A., A. K. J. Smith, J. Wallace, K. Valentine, J. Bryant, M. Hamilton, and C. E. Newman. 2022. "Understanding 'Risk' in Families Living With Mixed Blood-Borne Viral Infection Status: The Doing and Undoing of 'Difference." *Health (London, England: 1997)* 26 (3): 284–301. https://doi.org/10.1177/1363459320946469.

Pienaar, K., J. Flore, J. Power, and D. Murphy. 2021. "Making Publics in a Pandemic: Posthuman Relationalities, 'Viral' Intimacies and COVID-19." *Health Sociology Review: The Journal of the Health Section of the Australian Sociological Association* 30 (3): 244–259. https://doi.org/10.1080/14461242.2021.1961600.

Race, K. D. 2003. "Revaluation of Risk Among Gay Men." *AIDS Education and Prevention: Official Publication of the International Society for AIDS Education* 15 (4): 369–381. https://doi.org/10.1521/aeap.15.5.369.23822.

Reda, A., A. Abdelaal, A. M. Brakat, B. I. Lashin, M. Abouelkheir, B. Abdelazeem, A. J. Rodriguez-Morales, and R. Sah. 2023. "Monkeypox Viral Detection in Semen Specimens of Confirmed Cases: A Systematic Review and Meta-analysis." *Journal of Medical Virology* 95 (1): e28250. n/a. https://doi.org/10.1002/jmv.28250.

Rosengarten, M. 2009. "The "Informed Matter" of HIV Prevention." In *HIV Interventions, Biomedicine and the Traffic between Information and Flesh*, 59–81. Seattle, WA and London: University of Washington Press.

Smith, A. K. J., D. Storer, K. Lancaster, B. Haire, C. E. Newman, S. Paparini, J. MacGibbon, V. J. Cornelisse, T. R. Broady, T. Lockwood, et al. 2024. "Mpox Illness Narratives: Stigmatising Care and Recovery During and After an Emergency Outbreak." *Qualitative Health Research* 0 (0): 10497323241234482. https://doi.org/10.1177/10497323241234482.

Storer, D., G. Prestage, H. McManus, L. Maher, B. R. Bavinton, J. Ellard, F. Jin, S. Philpot, M. Holt, P. Saxton, et al. 2023. "Relationship Between Sexual Behaviors with Non-committed Relationship Partners and COVID-19 Restrictions and Notification Rates: Results from a Longitudinal Study of Gay and Bisexual Men in Australia." *Sexuality Research & Social Policy: Journal of NSRC: SR & SP* 20 (2): 825–836. https://doi.org/10.1007/s13178-022-00733-8.

Thornhill, J. P., S. Barkati, S. Walmsley, J. Rockstroh, A. Antinori, L. B. Harrison, R. Palich, A. Nori, I. Reeves, M. S. Habibi, et al. 2022. "Monkeypox Virus Infection in Humans across 16 Countries—April–June 2022." *The New England Journal of Medicine* 387 (8): 679–691. https://doi.org/10.1056/NEJMoa2207323.

Witzel, T. C., A. Ghobrial, R. Palich, H. Charles, A. J. Rodger, C. Sabin, A. Sparrowhawk, E. R. M. Pool, M. Prochazka, R. Vivancos, et al. 2024. "Experiences of Mpox Illness and Case Management Among Cis and Trans Gay, Bisexual and Other Men Who Have Sex With Men in England: A Qualitative Study." *EClinicalMedicine* 70 (0): 102522. https://doi.org/10.1016/j.eclinm.2024.102522.