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Gendering Research on Online Illegal Drug Markets

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This paper reviews and critiques research on online illegal drug markets, arguing that existing conceptualisations and methodological approaches have resulted in a very limited discussion of women and questions of gender. The first part lays out the stereotypes and unarticulated assumptions that enable questions about women and gender to be side-lined, as follows: i) that online anonymity rules out knowing about gender in online drug markets; (ii) that online drug markets are male-dominated spaces; and iii) that women are limited to minor or peripheral roles in those markets. Our aim is to make apparent, and challenge the marginalisation of enquiry about women and gender in existing scholarship about online illegal drug markets. In the second part, we draw on scholarship on women and gender in the drug trade more generally to consider what studying online illegal drug markets might add to our understanding of both women's participation in these markets and the way in which gender is more widely performed. We consider whether online markets may facilitate women's participation (due to anonymity, for example), or whether online drug markets replicate gendered stratifications characteristic of offline markets. We also explore the potential significance of women's participation in online illegal drug markets for harm reduction services. In conclusion, we suggest that future research should challenge the assumption that we can understand online markets without thinking about gender and outline the steps towards building a gendered perspective in this area.

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Introduction

Dominant ways of conceptualising markets, buyers and sellers in illegal online drug markets tend to exclude women and questions of gender from analysis and discussion. To demonstrate this point a number of online organisations supply abortion medication alongside medical advice and support to women in countries where procuring an abortion is illegal. For example, between 2010 and 2015, 5,650 women in Ireland seeking at-home pregnancy termination obtained the prescription drug misoprostol (sometimes in combination with mifepristone) online from just one such organisation - *Women on Web* (Aiken, et al, 2017). Yet it is notable that this sizeable, international online illegal drug market has not been recognised as such by researchers contributing to scholarship on illegal drug supply. Neither have policy makers and law enforcement agencies tasked with responding to illegal online markets flagged it as a 'problem'. The online supply of medications for self-managed abortion has been documented in academic literature, but located within scholarship on reproductive rights and public health (e.g., Jelinska & Yanow 2018; Erdman et al. 2018) rather than within criminology or drug policy. Perhaps women purchasing products for self-managed abortions are not perceived to 'fit' alongside other users of illegal drugs. Similarly, organisations such as *Women on Web* may not present as obvious candidates to be placed into categories alongside drug dealers working in organised criminal groups. Online drug markets have increased in recent years, and our primary aim is to explore how women and questions of gender have tended to be side-lined in enquiry into online illegal drug markets.

Open internet or 'clearnet' sales, primarily of controlled prescription drugs, have long been documented (e.g., Spain et al. 2001), alongside supply of mostly new psychoactive substances in web shops (e.g., Hillebrand et al. 2010). In a more recent development, sales of a wide range of illegal drugs like cannabis, MDMA and cocaine have been facilitated via

drug cryptomarkets – aka 'darknet markets' – since 2011 when the first such marketplace, *Silk Road*, began trading (Christin 2013; Aldridge & Décary-Hétu 2014). Cryptomarkets have continued to enable the buying and selling of illegal substances because they employ encryption technologies that obscure links between marketplace activities and real-world identities, and so afford a degree of protection from law enforcement. More recently, illegal online drug markets have relied on smartphone apps and social media to link buyers and sellers (e.g., Moyle et al. 2018; Delibasic & Leder 2017). In contrast to traditional 'offline' drug selling conducted face-to-face, illegal online drug markets provide buyers and sellers with varying degrees of anonymity. This anonymity may be perceived as reducing the risk of detection and arrest by law enforcement, and also believed to offer protection from the risks and harms that may be encountered in face-to-face transactions, such as rip-offs and violence (Aldridge and Askew 2017; Bakken and Demant, 2019). Whilst much of the drug trade continues to function offline, the boundaries between on and off-line are blurred, partly because while some sellers may advertise online they still arrange to meet customers face to face (McCulloch & Furlong, 2019).

While the relative anonymity afforded by illegal online drug markets might hold a particular appeal for women, not just as buyers, but also as sellers of illegal drugs, questions connected to gender in online drug markets have, for the most part, simply not been asked by researchers, by practitioners or by policy makers. This inattention is arguably driven by twin assumptions: that illegal drug selling is essentially a male dominated activity; and that the – at best peripheral – role of women in illegal drug selling is likely to be reproduced in the online context.

In this paper we critically interrogate these assumptions. Our approach is aligned with feminist critiques of knowledge revealing that dominant ways of theorising and researching tend to side-line women's experiences and concerns (see Ward & Grant 1985). Within criminology, the feminist critique demonstrated that theory tends to centre on men, saying little about women beyond sexist stereotypes (Heidensohn 1968 Smart 1976). Likewise, Wacjman's (1991) *Feminism Confronts Technology* critiqued scholarship on emergent technologies, including computers, arguing that traditional concepts employed were heavily weighted against analysis of women and gender. In particular, our approach builds on feminist critiques of drug market scholarship (including Anderson 2005; Campbell and Herzberg 2017). Rather than critiquing particular methods, theories or individuals, feminist critique examines dominant modes of conceptualising and theorising, clearing the way for scholarship on women and gender.

The first part of the paper lays bare the stereotypes and unarticulated assumptions that inappropriately relegate or de-value women's roles. We further consider how academic disciplinary assumptions underlying the identification of drug dealing activities (e.g., by criminologists) may serve literally to render invisible female-dominated illegal online drug selling, such as *Women on Web*. In the second part, we examine the fresh opportunities and insights that become available with an improved and fuller understanding of women and gender in online drug markets, and the significance of this understanding for harm reduction for women. We conclude by outlining steps for building a gendered perspective on online drug markets.

How women are rendered 'invisible' in online drug markets research

Online anonymity means we cannot know about gender

Internet-facilitated drug trading shifts some elements of the buying and selling process to a virtual location, affording participants a degree of anonymity they may not have in purely offline settings.[1] In crypto-markets pseudonyms are typically adopted to create online profiles designed to disguise real-world identities (Barratt 2012; Bancroft & Scott Reid 2017), and in clearnet purchases, buyers and sellers may never meet. As such, online identities make it less straightforward for marketplace participants to ascertain the gender of other buyers and sellers. But does this necessarily mean that information about gender is simply unavailable to researchers, or problematically compromised by online anonymity? Although online markets represent a fairly recent development, the use of online methods by drug researchers is well established. Numerous drug-related surveys are undertaken online, precisely *because* of the relative anonymity offered (Miller & Sonderlund 2010; Barrett et al. 2017). Whilst online surveys may collect an array of blank or fake answers (Chatwin & Potter 2014), they are generally understood to reflect offline realities in ways similar to more traditional survey methods. The annual Global Drug Survey regularly aggregates results by gender, for example (Global Drugs Survey 2019). Thus, online anonymity does not *per se* prevent knowing about gender.

One advantage of online drug markets is that researchers can fairly easily gain access in order to 'lurk' online and collect observational data via ethnographic methods (e.g., Maddox et al., 2015). This approach, however, can make collecting data about gender challenging. For

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[1] Both online and offline drug markets include degrees of anonymity and/or pseudonymity and unfortunately there is not space to discuss here. Rather, we wish to problematise the assumption that gender is invisible online.

example, as Wittel (2000: no page) notes, in online research: "the accuracy of information about age, gender, nationality etc. can hardly be checked." But, as Barratt and Maddox note, "the transparent and congruent conduct of ethnography in digital space for research purposes does not neutralise or negate the negotiation of gender identities and sexualisation, despite the lack of embodied interactions" (2016: 712). Thus, gender does not disappear online, even in highly anonymised, disembodied environments like crypto-markets: the significance of gender is far broader than sexual difference.

Gender can be understood as the social and cultural meanings given to sexed bodies (West & Zimmerman 1987), contingent upon other social structures such as class, 'race', sexuality, age and disability. Gender is therefore not a binary difference, but a spectrum of gendered identities, subjectivities and behaviours (Connell & Pearse 2014), enacted in particular contexts in relation to historic inequalities (Jackson 2001) and going concerns (West & Zimmerman 1987). Whilst gender is ubiquitous, its significance in social interactions varies widely (Deutsch 2007). In their excellent 'invitation' to gender and critical drug studies, Campbell and Herzberg state succinctly that 'drugs demand attention in gendered ways' (2017: 253) calling for scholarship that does not take gender for granted as a stable category of difference, especially noting 'race' and class as significant contingent factors in the realm of drugs and drug policy.

Given the lack of bodily presence it might be assumed that gender is barely significant online, but this misconception has been widely challenged by feminist scholars. Butler's theorisation of gender is particularly salient, given her attention to gender *and sex* as discursively constructed (1990). Whilst technical and social practices of anonymity pertaining to online illegal drug markets may allow an "atypical set of relationships to

emerge" (Bancroft & Scott Reid 2017: 501), the persistent sense of gender as natural, and its importance in identity and social relationships means it informs online interactions (Kendall 1998). Furthermore, online worlds are rooted in, and reflect myriad real world inequalities, including unequal respect and authority, as well as real world material inequalities and risks (Jane 2006; Kendall 1998; Van Doorn 2011; Wacjman 1991). As such, gender – as a primary category of social interaction – does not disappear online. Gender must be understood as underpinning social interactions and as discursively constructed all the while reflecting offline gendered identities, expectations and inequalities.

Rather, the ways that gender is made absent or present, or performed online, is of interest in its own right. One illustration is the online identity created by Ross Ulbricht, founding operator of the first drug cryptomarket, *Silk Road* from 2011 until its closure by law enforcement in 2013. Ulbricht's use of the moniker the 'Dread Pirate Roberts' (DPR) is heavily laden with masculine stereotypes: outlaw, feared, ruthless, but fans of the 1987 film *The Princess Bride* know the name is merely meant to inspire fear. In the film, the DPR is not one man, but a name taken by successive individuals, each passing on the title at retirement. Ulbricht's reference to DPR suggests that he was not the only individual to have acted in the role of owner and administrator of Silk Road (Greenberg 2015). This example demonstrates the potential for playfulness offered by online anonymity and the ways in which gender may be, reflexively, performed. With this in mind, we draw attention to the ways that gender is invoked in online drug markets.

Online drug markets are male-dominated spaces
Offline illegal drug markets have been widely assumed to be male dominated, facilitated by particular stereotypical masculine characteristics that make these spaces unwelcoming to and

even dangerous for women as both buyers and sellers. Contrary to these assumptions, however, women have long been involved in drug cultures (Measham 2002) and markets (Maher 1997; Maher and Hudson 2007), including the international drug trade (Carey 2014). Moreover, recent research suggests that women's labour is essential to drug market functioning. Numerous core activities are undertaken by women, including stock sourcing, retail drug selling, and support activities central to enabling and facilitating the participation of men, as well as being buyers and sellers in their own right (e.g., Anderson 2005; Anderson & Kavenaugh 2017; Denton 2000; Grundetjern & Miller 2018; Maher & Hudson 2007). Thus, the notion that women are absent from street-level drug markets, or only present in subordinate roles, has been roundly disproved.

Similarly, it is often assumed that mastery of the internet and computer technologies are particularly masculine skills. Whilst most early internet-adopters were men (GVUC 1994, cited by Joiner et al. 2015: 75), the gendered 'digital divide' has all but disappeared, at least in developed nations which now have equal access to the internet (International Telecommunication Union, no date). The assumption that whatever technological barriers there may be to buying and selling drugs online (e.g., Kowalski et al. 2019) in and of themselves bar access exclusively to women seem likely to be unfounded. The twin assumptions that drug markets and the internet are male dominated make it too easy to conclude that online illegal drug markets are, by their very nature, also male dominated. This may not, however, be the case.

We have found no published research analysing online selling activity by gender. Self-reported use of online illegal drug markets *for buying*, however, is higher for men than

women, although this varies substantially across types of online markets. The 2017 Global

Drug Survey,[2] for example reported that 87% of those who reported buying drugs on

cryptomarkets in the previous year were men (Winstock et al. 2017: 105). However, women

may be more present as buyers on the clearnet. Orsolini et al.'s (2015) systematic literature

review found that most of those buying prescription/recreational drugs from online

pharmacies were young, white men. Nonetheless, some surveys report greater gender parity

for specific markets. For example, Koenraadt & van de Ven (2018) found that women

represented a not insignificant third of online lifestyle drug purchasers, and were particularly

prolific buyers in relation to weight loss drugs, painkillers, and sedatives and tranquilisers.

One further point that is worth bearing in mind here because it may add to the obscuring of

women in official data is that online internet surveys such as those cited above are known to

be heavily skewed towards attracting male respondents (Miller & Sonderland, 2010; Chatwin

& Potter, 2014): respondents to the 2017 Global Drug Survey, for example, were 68% male.

In general, there is a paucity of information on gender and clearnet illegal prescription drug

markets, but as women are more likely to be the recipients of prescription drugs in general,

including prescription opioids and it is reasonable to assume they are active in these markets

(Anderson & Kavenaugh, 2017; Murphy et al. 2018; Peteet et al, 2019). Demonstrating this

point, Cicero and Ellis' (2012) survey of people buying Tramadol online without a

prescription recruited a primarily female sample, suggesting that in some categories of drugs

sold online, women may even be the primary buyers. Limited research further suggests that

illegal prescription antidepressant sellers may specifically target women in their advertising

(Woodlock, 2005), and that markets surrounding counterfeit dermal fillers (Botox) (Brennan

et al, 2018) and synthetic tanning products (van Hout, 2014) may be particularly appealing to

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[2] The Global Drug Survey is a large, international, annual cross-sectional web survey whose respondents are broadly similar in demographic terms to the –albeit smaller numbers of – drug users identified in national household surveys (Barratt et al. 2017).

women. Finally, Moyle et.al's (2019) study on the use of social media apps to purchase counterfeit medicines and illegal drugs on the clearnet recruited equal numbers of men and women to be interviewed suggesting a further interesting avenue of gender based research. Collectively, this data also suggests the importance of studying *both* cryptomarkets and clearnet markets in scholarship on women and gender in online drug markets.

Like on-street drug markets, online settings may also host sexist and misogynistic cultures unwelcoming to women. For example, Criado-Perez received up to 50 rape threats *an hour* in response to her 2013 campaign for a woman to feature on English bank notes, not to mention the 2014 'Gamergate' controversy resulting in 16 GB of abuse directed at Zoe Quinn, and the 2016 campaign by Jess Phillips - a Labour MP - to address misogynist bullying leading to the direction of 600 rape threats against her in one evening (Jane 2016). Barratt and Maddox (2016) describe encountering online misogyny in their online research project in which Maddox chose to identify herself online. Further, the 'bro culture' prevalent within the technology sectors on which drug cryptomarkets are built may be suggestive of this possibility, illustrated, for example, by the recent decision to host the North American Bitcoin Conference networking event at a strip club (Carey, 2018:1). It seems likely that the gendered dimensions of online drug markets – for example as hyper-masculine or misogynist – will shape how drugs are bought and sold online, and by whom.

It certainly seems to be the case that the use of cryptocurrencies is male dominated. Forbes (2017) reports that only 5-7% of cryptocurrency users are women and of the approximately $85 billion of wealth created by Bitcoin only 5.88% of this was created by women. Further, only 1.76% of the entire Bitcoin community are women (ibid). Forbes surmises that these industries may be unappealing to women "due to their perceived aversion to risk" (2017:1).

The extent to which these well-worn stereotypes of women as technologically incompetent (see Wacjman 1991) and risk averse are valid here appears to be assumed rather than evidenced. Research by Morgenroth et al (2017) suggests that well-established assumptions about women's reluctance to take financial risks in comparison to their male counterparts are founded on a tendency to ask about risk taking behaviours that are normative for men; when feminine behaviours are included in the research the propensity to take financial risk becomes much more gender neutral.

Furthermore, the characterisation of drug cryptomarket spaces as male-dominated and exclusionary of women, contrasts with Martin's hypothesis that cryptomarkets 'gentrify' drug markets by favouring "cordial, professional relationships between market participants" over norms in which violence is expected or acceptable (Martin 2018). Evidence in support of this hypothesis finds that cryptomarket buyers report fewer threats and violence, compared to their experiences of offline buying (Barratt et al. 2016). Although Martin's work is focused on the darkweb and cryptomarkets, some evidence suggests that it can also be extended to clearnet markets, particularly surrounding the sale of prescription medications. For example, Woodlock's (2005) study on antidepressant internet marking found evidence that sites specifically targeted women by using images of women in their advertising, by including search tags that might be more frequently used by women, and by including features such as quizzes as part of the website that were deemed to be more appealing to women. This evidence belies gendered biases underpinning what counts as a normal drug market, and even who counts as a normal drug seller or buyer online.

Women's experiences and involvement in online drug markets have yet to be fully recognised and researched. However, even though most buyers or sellers on drug cryptomarkets are likely to be men, this is not an acceptable rationale for side-lining women in research. Small-scale qualitative research into drug cryptomarkets is too often reliant on all-male samples (see for example, Barrett, et al. 2016: 56; Bancroft & Scott Reid 2016; Masson and Bancroft 2018). Where women have been interviewed in published research, their voices and experiences *as women* are sometimes absent from publications (inter alia. Bakken & Demant 2019; Barrett et al. 2016; Van Hout & Bingham 2014;). Ormsby (2016), Kowalski et al (2019) and Moyle et al (2019) are exceptions to the rule, quoting extensively from, and commenting specifically on, the experiences of women buyers. The tendency to absent women's voices and experiences from research tells us something important: despite buying drugs online, women are not analysed as relevant to the phenomenon. In the same way that women are often thought to lack the requisite 'muscle' or 'heart' to participate in serious crime (Steffensmeier & Allen 1996), assumptions that computers are the domain of geeky young men make it all too easy to omit the study of women from online drug market research.

The invisibility of women and gender in online drug markets reflects unfounded assumptions and problematic gender stereotypes. Whilst scholarship into online illegal drug markets is not unique in side-lining women's participation, it is especially frustrating given repeated attempts by scholars to highlight the importance of women in drug markets (see for example Anderson 2005).

Women are involved in (online) illegal drug markets but their participation is peripheral

Women in the illegal drug trade are often assumed to be 'bit players', taking passive or secondary roles to men. For example, the United Nations describe women as typically occupying risky and peripheral roles such as drug mules or illicit crop growers in the global drug trade, and as vulnerable, damaged and oppressed (UNODC, 2018). This pervasive assumption makes it all too easy for researchers to overlook women. Nonetheless, even in subordinate roles, as Anderson (2005) has argued, women have significant power in street level drug markets, pointing to core activities undertaken by women: providing housing and sustenance needs, purchasing drugs, subsidizing male dependency and participating in drug sales. Likewise, as significant consumers of painkillers, tranquilisers and weight loss drugs via the clearnet, women play a powerful role in financing online drug markets. Indeed, such drugs may be advertised with women in mind on both the clearnet and the darknet. Anderson's work also directs us to consider how women's labour might underpin online, illegal drug markets. Researching the Silk Road, Ormsby (2016:63) describes a multiplicity of drug market related roles and, although she says little about how gender figures in the division of labour, media reports of arrests of cryptomarket drug sellers have included women as well as men, both alone and apparently working together with partners and friends (Browne 2018; Gwern no date; Greenville News 2018; New Zealand Herald 2014).[3] Consistent with Anderson's (2005) claims, women may be undertaking an array of 'behind the scenes' labour which, while not immediately visible in methodologies such as online surveys, is integral to successful market functioning.

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[3] Gwern Branwen, in documenting 312 cryptomarket-related arrests or 'legal trouble' between 2013 and 2015 found 92% were men (no date). In one case, an undercover DEA operation resulted in the arrest of a man and woman in South Carolina after the woman was observed posting further consignments of the drug disguised in pregnancy test boxes (Greenville News 2018).

Even in highly gender-stratified offline drug markets, women can and do take commanding roles, even at the highest levels of the international drug trade (see Anderson and Kavenaugh 2017; Maher and Hudson 2007; Carey 2014). They can be found cultivating niche markets with small numbers of customers (Dunlap et al. 1994; Fleetwood 2014a), or working collaboratively with men or family members (Hutton 2005; Denton and O'Malley 1999). Selling drugs can even be a way for women to achieve stability, control over their drug use, independence and a sense of empowerment (Denton 2000; Morgan and Joe 1996; Grundetjern and Miller 2018). Thus, when researchers do actually look for women involved in drug markets, they have found them. The same is likely to be true for online, illegal drug markets. Nonetheless, the question of whether, or to what extent women participate in online illegal drug markets as sellers is currently not answerable. Whilst survey research seems to confirm that online drug buyers are mostly men, rare exceptions (Ormsby et al. 2016) offer a tantalising glimpse into women's involvement. Moreover, women appear to be comparatively more involved with clearnet markets, although these are under-researched. As Anderson argues so powerfully, women's labour is "fundamental to the social and economic organization of the illicit drug world" (2005: 393). Following Anderson, we must question sexist assumptions about whose labour is worthy of attention in online drug trade research.

Extending our knowledge about women, gender and online drug markets

In this section we explore how attention to the gendered features of the virtual spaces relevant to the online drug trade is essential to extending our understanding of how drug markets function, enabling new and potentially transformative kinds of social relationships and practices to emerge. As Campbell and Herzberg state, attending to gender entails more than

adding in women. Rather it has the potential to radically challenge our understanding (2017: 259).

Social and technological developments change women's involvement in the drug trade

Studying women's roles and experiences in online illegal drug markets offers the potential to extend our understanding of how technological changes shape women's involvement in drug markets. In the late 1990s/early 2000s mobile phones radically transformed drug markets: in the UK, 'open', street markets were replaced by delivery sales in more private off-street locales, creating a more fragmented and less hierarchical street level market (May & Hough, 2004). These novel markets and modes of dealing may create new roles or niche markets for women. For example, Curtis and Wendel (2007) describe women employed in service-facing roles as salaried dispatchers, taking phone calls and instructing male 'runners' in a small freelance/franchise crews in New York City. Likewise, in England Fleetwood (2014a) describes how mobile phones enable women to sell drugs as part of their daily activities, avoiding violence from customers or other dealers. Legislative changes have apparently re-shaped women's participation in rural methamphetamine markets in the US South. Following the banning of precursor chemicals used in large-scale methamphetamine manufacture, low-technology, low-yield 'shake and bake' methods became the norm (Dietzer et al. 2019; Miller & Carbone-Lopez 2015). Gendered hierarchies in markets have loosened and researchers report lower levels of gender-based violence (Miller & Carbone-Lopez 2015; Dietzer et al. 2019).

Social and technological changes, therefore, influence the structure and function of drug markets, and in turn, change the opportunities and roles available for women within them. It

is inevitable that the social and technological changes underpinning online illegal drug markets will shape women's involvement, as both buyers and sellers. If we set aside assumptions that women occupy low-level positions in drug markets and that the internet is a 'male domain', we might anticipate, for example, that the online drug supply business holds appeal to women. Online work generally offers considerable flexibility in balancing work and home life, as well as some freedom from entrenched power structures that may limit women's potential (Jome et al. 2006). Ormsby (2016) notes that online drug vendors appreciated the flexibility of online work, as well as not having to deal with customers face-to-face- at all hours of the day. Messaging apps and other online platforms may enable greater discretion, avoiding the gendered stigma of face-to-face drug selling. Online platforms may also offer protection against violence or 'rip offs'. For example, cryptomarket platforms offer third-party adjudication for the civil resolution of marketplace disputes (Masson & Bancroft 2018; Morselli et al. 2017). Likewise, some clearnet sites guarantee delivery or offer a refund (for example, see Anderson's (2020) review of the now closed Afinil Express). These services may be valued by women sellers in preference to face-to-face dispute resolution, and provide a further incentive for online instead of offline drug selling. Thus, the additional 'safety' features offered online may enable women to feel safer in some online drug markets. We can see, therefore, how careful consideration of gender in light of technological and social changes may shape women's roles in online drug markets as buyers and sellers, as well as our understanding of drug market function more widely.

Might online drug markets offer men and women new styles for performing gender?

Not only might online markets offer new opportunities for women to participate, they may also provide new opportunities for how gender is 'performed' as part of dealing. Given that

online anonymity allows people to 'play' with gender in line with Butler's (1990) ideas about the discursively constructed nature of gender; research can consider whether online drug markets enable new kinds of social relationships and practices to emerge (Van Doorn 2011). Here we can draw on scholarship on how gender is 'performed' by both men and women as part of their drug buying and selling activities.

Research on dealing 'styles' finds women performing gender in a variety of ways in offline drug markets. Grundetjern found that some women sought to downplay their femininity, describing themselves as tom-boys and avoiding sexual relationships with other dealers (Grundetjern 2015; Grundetjern & Sandberg 2012). Some women have been found to cultivate a reputation for violence, which might be understood as a performance of masculinity (Denton & O'Malley 1999; Grundetjern and Sandberg 2012; Grundetjern 2015; Maher 1997). Grundetjern and Sandberg (2012) also describe women employing 'service mindedness', for example by adopting solicitous communication styles aimed at customer satisfaction and repeat business (see also Dunlap et al. 1994; Fleetwood 2014a).

Online anonymity may offer men and women alike more freedom to experiment with new styles for conducting business outside of gender-restricted repertoires. Women may, for example, consider adopting a male online identity and 'masculine' communications styles to achieve anonymity by blending in effectively with other sellers. But, if success in online drug selling derives more from a reputation for customer service and good communication than from a reputation for violence (Aldridge & Décary-Hétu 2014; Przepiorka et al. 2017), women may be better equipped and inclined to participate than they might in offline drug markets. Ormsby (2016:64) found that women buying on Silk Road felt it provided: "… a more sophisticated and convenient method for purchasing drugs that was more congruent

with their lifestyles than sourcing from the street."). Similar preferences may function not only as pull factors for women to sell online, but also by creating a culture that encourages men to adopt a selling style that is less premised on a potential for violence than professionalism. Research into online drug markets has found that sellers seek to cultivate a good marketplace reputation, through quick and efficient delivery and effective packaging in the supply of 'as advertised' products, and sellers with established reputations sell faster and at higher prices than other sellers (Przepiorka et al. 2017). Thus, research on women dealers operating offline has tended to describe this service orientation as a particularly 'female' selling style. Online illegal drug markets trouble our notions of clear-cut 'male' or 'female' styles of dealing, and encourage us to revisit these debates.

Online illegal drug markets, gender and drug policy

Attention to questions of gender encourages us to reflect critically on existing and possible policy responses to developments in online illegal drug markets: how drugs are accessed, the range of drugs available for purchase, alongside who elects to sell drugs in online illegal markets for what reasons. The different ways in which gender is implicated in all these developments provides us with useful pointers for thinking about policy issues.

Women may be more willing to access drugs as buyers in online illegal drug markets, if they perceive that the relative anonymity of transacting online mitigates the potential risks of social, institutional and legal sanction connected to these transactions. To the extent that online illegal drug markets facilitate women in accessing a wider range of products than they had previously been able or willing to, they in turn, experience more of the harms – as well as the benefits – associated with the use of those drugs (see Aldridge et al. 2018a). Harm reduction-oriented drug information produced by state and other agencies, for example, could

now include reference to the substantially wider range of drug types that online buyers can access, compared to the more limited range available to buyers in their local drug markets. Gender, of course, remains relevant here: men and women are likely to differ in their reasons for accessing drugs in online markets, and in the particular products purchased, and drug information produced by official agencies should be designed to meet the differing needs of the men and women. A fine balance needs to be struck, however. Such advice should be cognisant of gendered trends and needs, but should not be based on gendered stereotypes. Furthermore, such advice should acknowledge the complex – and highly individualised - risks and benefits involved, as is the case for those seeking to buy hormones online to self-medicate as part of gender transitioning, for example (Mepham et al. 2014).

Official national and international responses to online drug markets (e.g., the Europol/EMCDDA 2017 publication 'Drugs and the Darknet: Perspectives for Enforcement, Research and Policy') have aimed to discourage consumers from sourcing drugs via online markets, but the evidence base for this recommendation is weak. It has yet to be established whether buying online carries more or fewer of the risks that harm people who use drugs (e.g., criminal convictions) (Aldridge et al. 2018b). Policy responses like these thus risk displacing the drug trade, for example by facilitating decentralised drug market innovations like harder-to-detect app-facilitated (social media) drug selling, or by simply diverting buyers back to offline markets. Policy responses to online illegal drug market innovations must grow from an evidence base that acknowledges the risk and benefit perceptions of the people who use them, including how these perceptions vary by gender, in order to provide people who buy drugs with accurate information to inform their decisions. As the example of *Women on Web* demonstrates so clearly, online drug purchases may be a vital service for women. At the same time, harm may also be caused by counterfeit medications purchased online (Ghodse

2010), including fatalities (Khomami 2015). Harm reduction advice must reflect these diverse online drug markets. At present, we lack important insight into women's motivations and experiences as consumers of online illegal drugs.

Similar lines of thinking can be applied when considering policy responses to the activities of online sellers of illegal drugs. As in offline drug markets, online drug selling may offer women a range of benefits including control, independence and autonomy (Morgan & Joe 1996; Grundetjern & Miller 2019). Even menial roles such as allowing one's internet connection be used or taking packages to the post office might supplement a meagre income or support a drug habit. Here too, policy responses to online drug selling must derive from an evidence base that acknowledges the risks and benefits for people who sell drugs online in order to provide appropriate responses. A limited but growing evidence base in this connection (e.g., Aldridge & Askew, 2017), however, has yet to establish how these perceptions and risk / benefit profiles vary by gender.

Online illegal drug markets are an important new frontier for harm reduction services and advice. Given that women may be especially sensitive to the effects of stigma and so deterred from accessing drug information and services from official agencies – particularly when doing so requires them to disclose their drug use (Malloch 2004), information accessed anonymously in online communities of people who use drugs may be better placed to meet their needs (Enghoff & Aldridge, 2019). No research has yet established the quality of drug safety and harm reduction information connected to online drug markets, for example in product listings or marketplace discussion forums, compared to content arising from official agencies or from online harm reduction discussion platforms not associated to marketplaces, such as Bluelight. Some features of online drug markets have the potential to provide unique

benefits to their users accessing drug safety advice. Information can be accessed in the same location of purchase, and often in connection to particular batches from specific sellers, information typically unavailable elsewhere. Some marketplaces have even provided specialist and individually-tailored advice from a qualified harm-reduction drug professional (Aldridge et al. 2018). Nevertheless, drug information provided by sellers simultaneously serves potentially incompatible and opposing functions: encouraging buyers' safer use, and encouraging potential buyers to buy more (Aldridge & Askew 2016).

Unless relevant, gender-sensitive, high quality information is readily accessible in a welcoming environment, women will miss out. To the extent that illegal online drug market users are predominantly men, even if drug safety and harm reduction content on online forums is high quality, women will obtain only limited benefit. Given the need for gender-sensitivity in harm reduction information and service provision (Ettorre 2004), content on male-dominated discussion forums may not always be appropriate for the needs of women, or be perceived as such by the women who may access it. For example, oestrogen interacts with how prescription medicines like zolpidem (a sedative hypnotic) are absorbed, meaning that women's recommended dose is half of men's (Krystal & Attarian 2016). Furthermore, the popular smart drug modafinil reduces the effectiveness of some hormonal birth control medication by 25% when taken in combination (ibid). Popular illegal clearnet markets for prescription medicines, while routinely listing common side-effects, do not typically address either of these issues. This omission likely has real-world impacts on women.

We know little about individual differences in how drug safety and harm reduction content is accessed, and how subsequent understanding is formed, as a result of participation in online communities. Does this knowledge and understanding depend, for example, on whether

individuals contribute to online discussions (by asking questions or offering information) or whether they simply read without making contributions? Whilst women now have equal access to the internet, women are less active in constructing online spaces than men (Joiner et al. 2015). It seems likely that gender will be implicated in whatever individual differences are relevant in building valid harm reduction knowledge and understanding from online communities. Researchers must therefore pay close attention to women's participation in online drug markets.

Lastly, *Women on Web* provide an exemplary service, offering real-time follow-up via email supporting women through their at-home pregnancy terminations (Aiken et al. 2017). Beyond avoiding social stigma, *Women on Web* offer women dignity and control of reproductive choices, making the best use of available online technologies. Their inspirational service demonstrates the radical potential for the internet to empower women, rather than merely re-inscribe inequality, suggesting its huge potential for developing online harm-reduction services for women. Importantly, this online drug market demonstrates how technological innovations can effectively circumvent laws in some countries that prevent women from accessing the legal and safe abortions that reduce the harms to women forced to seek illegal abortions, or to carry on with unwanted pregnancies.

Concluding thoughts

Researchers have so far paid little attention to women in online illegal drug markets, at least partly because of entrenched assumptions driving characterisations of drug markets that inappropriately relegate or marginalise women's roles. As a consequence, the potential for online illegal drug markets to provide a rich mine of information about women's roles and the ways gender is performed online has been missed. Researching women and questions of

gender is a potentially radical challenge. Properly done, this would not involve merely adding women into existing conceptualisations, methodologies and theories (Campbell & Herzberg 2017). As we have demonstrated, thinking about women and gender must also involve questioning the cultural values and assumptions that underpin how online drug markets are imagined, problematised, and researched. Future research must challenge the assumptions that the online drug trade can be properly understood without thinking about women's involvement and the role of gender in its functioning.

One way to achieve this is by challenging current dominant conceptualisations of online illegal drug markets which have predominantly focussed – albeit implicitly – on what early evidence suggests is male-dominated buying and selling on drug cryptomarkets. To obtain a more rounded understanding of online illegal drug markets, researchers must also study clearnet drug markets, where it seems likely that women will be comparatively more involved, certainly as buyers, and perhaps also as sellers. One problem is that the 'unsolicited' online data available to researchers from cryptomarkets is substantially more detailed than that available from clearnet markets. It additionally includes geographical information connected to where products ship from and to, independently collated and displayed customer feedback and seller reputation metrics, and dated information on transactions, which collectively enables researchers to estimate the scale and trends for different product types within the online drug trade (Enghoff & Aldridge, 2019). This suggest that those researching clearnet drug markets using the comparatively more limited unsolicited data available, must use complementary data collection methods to obtain more detailed understanding, in the form of self-report via interviews and surveys with clearnet market users.

Empirical research on women is needed to address substantive knowledge gaps. Revisiting large-scale data sets, such as the Global Drug Survey, might reveal similarities and differences in buying habits; the gendered divide in these digital markets. In addition qualitative research is needed to capture when gender becomes salient, and how it is performed online. This could include covert 'lurking' in online spaces or overt online ethnographies in which observations of interactions are collected as data; discourse analytic approaches are particularly suited to identifying how gender is performed in textual or visual data, and can be deployed to ascertain how gender is performed online as part of business and digital culture. Assumptions about gender are often taken for granted and rarely made explicit. Nonetheless, 'lurking' – through sustained presence – can offer a window into the taken-for-granted assumptions about who is present, and who can be a good seller, or buyer in online illegal drug markets.

Methodological approaches need to go beyond standard assumptions about who is important: following Anderson (2005) we need to explore the array of activities with which women are involved in the drug business, beyond buying and selling. As in offline drug businesses, women are likely to be responsible for tasks such as paying the internet bill or packaging drugs. These women may be comparatively difficult for researchers to access, but to fully understand online drug markets, we must make space to appreciate aspects of online drug selling enterprises which are likely to be undertaken by women, given everything we know about offline drug markets.

Lastly, we wish to emphasise the importance of questioning assumptions about who, or what, is presumed to be the 'problem' which often underpins scholarship on illegal drugs. At the time of writing, women's access to legal abortion has been severely restricted in Poland, as

well as a number of US states, most severely in Alabama and Georgia. In these contexts, online illegal drug markets serving women are likely to be seen as a 'problem' potentially worthy of law enforcement responses and efforts. But: international online markets supplying medications for the safe, at home termination of pregnancy are, one might argue, *a response to a social problem* (that is, lack of access to necessary and desired but prohibited products and services). Of course, this distinction is fundamentally, and unavoidably, underpinned by politics, and in our case, feminist politics. In this context, the question of who our research is *for* becomes ever more urgent.

We began by asking why women supplying illegal drugs online to women seeking self-managed home abortions have not been – or have yet to be – recognised as an illegal online drug market by those who specialise in their study. Existing literature has framed this particular phenomenon within scholarship on reproductive rights and public health, encouraging and enabling us to view these online products and services as responding to a social problem, as advocacy, and as activism. By comparison, illegal drug market scholars frame their work around questions of illegality and criminality, thereby encouraging a very different view of the same phenomenon: as a problem to be managed, controlled, even eradicated. By insisting on a comprehensive and systematic analysis of gender in online drug markets, we are encouraged to think critically about the wider structural and global conditions – prohibition of drugs via laws that criminalise possession or supply – that provide impetus for illegal drug markets, and that sustain some of the very harms that online drug markets may have some limited role in reducing. This possibility challenges long-standing assumptions about drug cultures as inevitably misogynistic and male dominated, and encourages researchers to attend to the cultural aspects of the online communities associated with drug markets that facilitate or exclude participation in gendered ways.

Word count: 7,132, not including references.

Conflicts of interest

The authors report no conflict of interest.

Acknowledgements

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