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Women's risk assessments and the gendering of online IPED cultures and communities

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\begin{abstract}
\textbf{Background:} This article aims to describe how women narrate their IPED use in relation to the gendering of drug cultures and communities, and to conceptually address the gender bias that has dominated the scholarly debate on IPEDs and their use relative to potential risks and harms associated with the practice.

\textbf{Methods:} The article takes a case study-based and theoretically informed qualitative approach to data. Two online sites where women engage in discussions about IPEDs were selected. Purposive sampling was employed for data collection and reflexive thematic analysis was used to make sense of the data.

\textbf{Results:} It is illustrated that women who use IPEDs engage in online discussions through a narrative of the Other. Variations in experiences and spaces for female subjectivity are overshadowed by stereotypes of women who use IPEDs. Stereotypical beliefs and inaccurate or non-adapted information for the female body, as well as men posing as women online in forums, complicate the distinction between genuine information, harm reduction, and misogyny.

\textbf{Conclusion:} We argue that gendered expectations and assumptions can obscure the diversity of backgrounds, experiences, motivations, and results among women within these communities. Further and diversified research is needed in this area.
\end{abstract}

\section*{Introduction and background}

Image and performance enhancing drugs (IPEDs) are a broad category of substances used to shape the body and/or improve physical performance. Though the motives and means for IPED use may vary in relation gender, age, and context in which the use occurs (Andreasson & Henning, 2021; Germain et al., 2021; Underwood, 2017), the scholarly debate has largely focused on men and anabolic-androgenic steroids (AAS, also sometimes referred to as just ‘steroids’) (Christiansen, 2020). In doing so, the cultural links between IPEDs, masculinity, muscle, and performance cultures have been repeatedly reinforced in public discourse and research (Andreasson & Henning, 2021). Though the majority of people who use IPED are male and primarily between the ages of 22 and 30 when starting to use AAS (Bonnecaze et al., 2020), users can be found across different age groups and (sub)populations, including women (Abrahin et al., 2017; Scarth et al., 2023).

In recent decades women have entered both recreational sport and gym and fitness contexts in large numbers (Andreasson & Johansson, 2014; Sassatelli, 2010). Some have undertaken IPED use, which according to scholars may be explained by an accepted body ideal that includes muscles as well as a thin physique (Donovan et al., 2020; Tiggemann & Zaccardo, 2018), though prevalence studies of women are scarce (Svedsäter et al., 2021). The scant research on women and IPEDs has revealed that women and men use differently in terms of substances and methods, preferring oral administration and lower doses (Börjesson et al., 2016). Women have self-reported using steroids, primarily consisting of oxandrolone (Anavar) and stanozolol (Winstrol), as well as methenolone and nandrolone (Abrahin et al., 2017; Gruber & Pope, 2000; Ip et al., 2010; Piatkowski et al., 2023). Women are also more likely to use substances to reduce weight, such as ephedrine, clenbuterol, or thyroid medications (Van Hout & Hearne, 2016). At the same time that a deepened voice, enlarged clitoris, disrupted menstruation, and reduction in fertility have been described as possible unwanted physical side effects (Havnes et al., 2021; Ip et al., 2010; Strauss et al., 1985), women who use IPEDs encounter heteronormative stigmatization and are described as mannish, freakish, or unattractive (Andreasson & Henning, 2022a; Kotzé et al., 2020; McGrath & Chananie-Hill, 2009; Shilling & Bunsell, 2009). This may potentially limit or discourage women from engaging in IPED use. Group stigmatization may also obscure the range of IPEDs used and diversity among women’s motivations for use (Sverkersson, 2022).
Research on women who use IPEDs is scarce, though researchers have taken an increased interest in the topic in recent years in both the online and offline contexts (Fomiatti et al., 2023; Germain et al., 2021; Havnes et al., 2021; Henning & Andreasson, 2021; Piatkowski et al., 2023; Sverkersson et al., 2020). Using a qualitative approach, Havnes et al. (2021) looked at women who use AAS experiences and ways of processing the drugs’ (potentially) masculinizing effects. The study showed that many women were or felt dependent on advice from male coaches or partners, which distanced the women from their use practices and insights into their drug regimen. Entrusting men with decisions about AAS also increased the risks of unexpected and potentially irreversible masculinizing side effects ‘both because male experiences of AAS are not transferrable to women and because male providers may not themselves possess adequate knowledge’ (Havnes et al., 2021, p. 8). Bunsell (2013) also suggested that women routinely underplay their IPED use and that they are often bound to others (men) to guide them in their use practices. Women’s IPED use is then carried out secretly and with a sense of taboo and stigma (Piatkowski et al., 2023; see also Andreasson & Johansson, 2021; Shilling & Bunsell, 2009).

Part of the difficulty in capturing IPED experiences is the often-illegal status of IPEDs or their use. Perhaps unsurprisingly, individuals who use IPEDs, and whole use communities, turn to online spaces to anonymously share and acquire knowledge about dosing, side effects, and other information (Andreasson & Johansson, 2016a; Dunn et al., 2016; Henning & Andreasson, 2021; Pope et al., 2014; Smith & Stewart, 2012). This represents the evolution of new forms of experience based IPED learning processes and cultures. Indeed, the researchers have demonstrated the development of a digital doping ecosystem consisting of diverse communities and lifestyles (Andreasson & Henning, 2023). Still, women’s IPED use remains under-researched (Andreasson & Henning, 2022a; Fomiatti et al., 2023; Piatkowski et al., 2023). This oversight is partly to do with the common understanding of IPEDs, particularly AAS, as either something for men or limited to women bodybuilders seeking massive physiques (McGrath & Chananie-Hill, 2009). This has resulted in women’s voices being lost in the sea of ‘broscience’ that has developed in many online communities where men dominate discussions and prioritize their own experiences, perceptions and bodies (Bilgrei, 2018). Women are integrating into IPED communities, however, ‘sis-science’ or women-centered IPED cultural development has been limited by rigid male-centered gender configurations (Sverkersson et al., 2020).

In the scholarly debate on gender and IPEDs the notion of hegemonic masculinity (HM) has held something of a pole position. In 1995, Connell described HM as ‘a configuration of gender practice that embodies the currently accepted answer to the problem of legitimacy of patriarchy’ (Connell, 1995, p. 77). In contrast to Connell’s own position, the concept has sometimes been used in research on IPED use to describe a form of ‘traditional’ or orthodox masculinity (see for example Christiansen, 2020). Thus, men engaging in IPED use have been, somewhat simplistically, understood as overconforming to stereotypical notions of masculinity through their projections of masculinity, performance, dominance, and rationalized lifestyles. One problem with this use of Connell’s theory is that the notion of power – men’s dominance over women – becomes almost absolute and thus uncontested. Such perspectives stand in stark contrast to different forms of resistance debated within feminist research and critical studies on men and masculinity (Butler, 2004; Felski, 1995).

**Study aims**

To address the gender bias that has dominated the field of research on IPED use, this article leans on a feminist philosophy of science, hoping to provide additional tools to analyze women’s experiences on their own terms rather than through the lens of men and masculinity. Advancing the scholarly debate on women and IPEDs, the article utilizes a case study-based and theoretically informed approach. We have selected two different online IPED forums that serve as illustrative cases of how women engage in discussions about IPEDs in the context of online communication. The aims of the article are twofold. First, we aim to describe how women who use IPEDs narrate their use in relation to the gendering of drug cultures and communities in two selected IPED forums. Second, we also seek to advance the conceptual approach and gender bias that has dominated the scholarly debate on IPEDs and their use in relation to potential risks and harms associated with the practice.

**Analytical framework – ontological position**

Braidotti (2002) emphasized the importance of recognizing the embodied nature of gender identity and experience, while also acknowledging that gender is shaped by cultural and social practices. She was interested in transcending the logic of binary thinking and argued that difference and being different are seen as compatible with something negative, such as being less than with an emphasis on otherness (Braidotti, 2011). She suggested that sexual difference is located on three interrelated analytical levels (Braidotti, 2011). First, are the differences between men and women. At this level, the pursuit of equality must go through difference. In the present case, women’s and men’s IPED use are different and therefore cannot be understood through a phallocentric notion of the subject (the perspectives of men and their bodies), as much research on IPEDs and gender has done. Second, Braidotti emphasized differences among women. Though women may share experiences of being engaged in a lifestyle that is primarily characterized by men and masculinity, there are differences in perceptions regarding the practice in relation to age, nationality, race, motivations, previous experiences, and more. Such differences have often been backgrounded in the scholarly debate, in which women have been dealt with (if at all) as a homogenous category centered on bodybuilders (Bunsell, 2013; Jespersen, 2013; McGrath & Chananie-Hill, 2009). The third level, that of difference within each woman, highlights the complexity and changing nature of identity and includes individual use trajectories. Braidotti’s notion of feminist nomadism rests on the idea that feminist theory validates women’s aspirations to embody diverse forms...
of subjectivity. Feminism can be understood as a struggle that strives to transform values, representations, and assumptions assigned to women. This view is based on a patriarchal historical foundation and its emancipatory movement, as well as the questioning of how personal identity tends to be formed by and influenced by gendered power relations (Braidotti, 2011).

Taking inspiration from Braidotti’s conceptual framework, we take a feminist approach to women’s online discussions of IPED use and how issues are understood within those communities. We acknowledge women as a heterogeneous group who share some experiences but also differ in various respects, not least their IPED experiences. From there, we can begin to analyze women’s conditions and IPED use on their own terms. This approach does not deny differences between men and women. Rather, it attempts to create a space for gender differences within IPED cultures and communities by describing autonomous narratives beyond existing stereotypes of women who use IPEDs.

Methodology and research design

In this article, we have taken a qualitative case study-based approach. A case study method has the advantage of allowing rich and nuanced portraits of rare or particularly relevant cases concerning a phenomenon (Yin, 2013), for example a group that has been backgrounded or under-researched. Here, the two selected cases exemplify how women who use IPEDs engage in conversations about their use in the context of online IPED communities (Kotzé et al., 2020). The contribution of using case studies lies in connecting the subjective experiences expressed by women in the context of online communication, with the gendering and theorization of IPED lifestyles and communities.

To provide the context for our two cases, we first offer some background. The first case relies on the Swedish communicative platform Flashback. Flashback is a platform for information dissemination and debate on a wide range of topics, encompassing various discussion categories, including general news and politics, as well as specialized subjects such as IT and technology, sports, health and beauty, science, and drugs, including IPEDs. The forum is open to everyone to read, and ongoing discussions are accessible to anyone with an Internet connection. To engage in conversation, however, you must register an account that allows you post. Flashback is also known for its liberal and transparent debating culture, where community members can express their opinions freely on even the most controversial topics. Anonymity is a defining feature of the forum, as users typically employ aliases or pseudonyms instead of their real names. The second case is the English language website MESO-Rx. It is also an openly accessible forum for readers, and like Flashback you must register an account to post. It is also anonymous with members choosing pseudonyms or handles in place of legal names. Unlike Flashback, MESO-Rx is a site specifically dedicated to AAS and other IPEDs. The forums are primarily AAS themed (Steroid Cycle Log; Steroid News Forum) with a handful on general discussion or non-AAS topics (Political Discourse; Bitcoin and Cryptocurrency). MESO-Rx also has two different forums dedicated to women’s IPED use. The first is Women and Steroids, in which both men and women are free to post and discuss, while the other is exclusively for women members to use, called Women’s Steroid Experiences. This forum configuration is valuable for allowing us to see differences when men are allowed or excluded from conversations.

Our two cases were strategically selected, aimed to meet the theoretical aims of the study. The cases constitute some of the breadth that can be found in the context of online IPED communities. For example, the first, Flashback, is a nationally bound forum (debating an issue and practice that is criminalized in Sweden), whereas the second, MESO-Rx, is international and commercialized in character. Together, these two cases illustrate how women who use IPEDs present themselves and are met by the broader IPED communities within the digital doping ecosystem (Andreasson & Henning, 2023).

In the sampling process, to meet our study aims, we initially restricted our selection of data to threads that engaged in the inclusion criteria: a) discussions related to the use of IPEDs, b) that were initiated by forum members who identified themselves as women, and c) initiated within the years of 2019-2023. This purposive sampling strategy (Campbell et al., 2020) was implemented to help overcome the gender bias that has been distinctive in the field sport studies in general, and sport doping research in particular (see background section). Because, similarly to other online forums where IPED use is debated at a grassroots level (Bilgrei, 2018; Underwood, 2017; Underwood & Olson, 2019), discussions on both Flashback and MESO-Rx are heavily dominated by men (Andreasson & Johansson, 2016a, 2016b; Henning & Andreasson, 2021).

Threads were initially collected within the main theme/subcategory of ‘doping,’ using the sites’ search tools with the keywords ‘woman’ and ‘girl.’ To make sure that the discussions were up to date, we limited our search to the years 2019-2023. The threads were then manually sorted to include only those explicitly created by members presenting themselves as women, resulting in nine threads from Flashback and 58 on MESO-Rx. Threads started by members presenting themselves as men while discussing women who use IPEDs were excluded. The included threads consisted of both IPED course reports (e.g. detailed reports often with several posts, before, during, and after completing a course) and more general questions/posts about IPEDs (debate on different drugs, their side-effects, suppliers and more). In the included data, women discussed both muscle-building substances such as testosterone gel, oxandrolone (Anavar), and stanozolol (Winstrol), as well as fat burning substances, including 2,4-dinitrophenol (DNP), clenbuterol, sibutramine, etc. The selected threads varied in length, stretching between one and 72 replies/posts. On MESO-Rx, we additionally included a post that contained a link to a thread featuring a regular woman member that focused on content and dosing. This thread was also returned in the data from a related study on online IPED use trajectories. Though this was outside the initial parameters of the women only forum, we chose to include it here as it is a clear example of the challenges women face in sourcing their
IPEDs and the response to their concerns and was referenced within our initial strict parameters.

In the presentation of the findings, we have taken an empirically driven approach. This was done to create a sense of depth to the women engaging in conversations, centering women's agency in presenting themselves and debating IPEDs. However, we do not view this data as separated from our analytical framework. Quite the contrary. In the process of data analysis, we have considered data to be theoretically impregnated (Tavory & Timmermans, 2009). Inspired by Braun and Clarke (2021, 2022), a reflexive thematic analysis (RTA) was conducted, mainly in two steps. First, the research team discussed the content of the sampled online discussions, familiarizing ourselves with the complete set of data. Shared meanings and commonalities were identified and discussed, but rather than seeking consensus on meaning, the collaboration allowed for nuanced interpretations (cf, Braun & Clarke, 2019). This step was understood as a foundational part of the RTA (writing familiarization notes and initial coding) (see Braun & Clarke, 2021). In the second step, the first and the second authors took main responsibility for providing a rough draft of our first case study and the third author for the second case study. From the beginning of the process the emerging drafts of our cases were already related to our theoretical interest in the area (see Braun & Clarke, 2019, 2021, 2022), women's use and experiences. Thus, the writing process was an 'integral part of the analysis, rather than something that takes place at the end, as it does with statistical analyses' (Braun & Clarke, 2006, p. 84; see also Braun & Clarke, 2021, p. 343).

Engaging in studies of online communication raises questions regarding research ethics and how to understand the distinction between public and private conversations. As discussions on Flashback and MESO-Rx are not password protected or access limited (accessible to anyone with an internet connection) and members do not use real names, we concluded that forum members do not expect that their personal privacy will be normatively protected (Franzke et al., 2020; Grodzinsky & Tavani, 2010). However, we have taken further steps to ensure anonymity by assigning quoted posts a pseudonym different from the one used on each forum and by avoiding directly quoting where summarizing or paraphrasing will not change the meaning or impact of the original text. Formal ethical approval to carry out this study was secured from the Sweden Ethical Review Authority (Ref. No. 2017/469-31).

Results

Anticipating gendered questions and defending the female self

In trying to understand women's engagement in IPED practices, it is imperative to look at how they position themselves within the broader IPED use community. As illustrated in previous studies, online communities are heavily dominated by male commentators and often painted in misogynistic discourses (Denham, 2008; Underwood, 2017). Approaching such a community, for whatever reason, thus implies that women engage in community discussions as the Other, or the second sex/gender. In this section, we look at how some women present their IPED experiences, motives, goals on the IPED forum on Flashback and, in doing so, implicitly or explicitly address or narrate the gendering of the practice.

When engaging in IPED discussions on Flashback, women usually follow what has been previously described as the doping template (Sverkersson, 2022). This is a semi-formalized expectation set out by the forum moderators with the information and format they expect to see in introductory posts. This was to ensure that members consistently gave the pertinent information when asking questions or advice and to avoid follow-up questions about experience, goals, previous use, and other relevant information (Sverkersson et al., 2020). One member, WomanCan, posted a lengthy first course report. In it, she detailed her demographic stats, body composition, course plan, the supplements she currently used, and an outline of her diet. This detailed information was also accompanied with explanations of the decisions she had made, her motivations for use, and more. Seemingly this extra information was presented due to her being a woman. She explained:

I'm well aware that Anavar is expensive, but since I, as a girl, need such small amounts, I consider it worth it. Preferably avoids virilization as much as possible, and then these are the levels I think I need to be at. It is mainly for muscle preservation purposes. (WomanCan)

Adjacent to the expected information required for the doping template, WomanCan is also trying to make sure that she will be taken seriously and not be questioned for her lifestyle choices. She is trying to preempt other community members (often men) before they engage in the anticipated questioning of her and her decisions, such as asking if she has considered all the 'women's issues' around fertility and masculinization. This self-defensive approach was also expressed in other threads. In one, Wolverina explained her rationale for engaging on Flashback about IPEDs:

Mainly want to post a course report, due to the fact that there isn't much real info at all about women and steroids. I consider myself reasonably knowledgeable so I want to be helpful for the girls who have decided to take this route, etc, mostly so that they can make it as 'safe' as possible. I am very aware of the risks, so there is no fucking use to try to get on my nerves and come with accusation! Those who don't read out of interest and have something meaningful to contribute with, can fuck off straight away. Thought I'd write about which steroids and dosages you should stick to as a girl, because what I've seen some guys recommendations are downright sick, and shows extreme ignorance when it comes to women's bodies and reactions to these substances. (Wolverina)

Wolverina is directly addressing both the lack of information available for women on Flashback and the undermining comments and potentially dangerous recommendations from men on the site. Using phrases such as ‘as a girl’ make clear that she understands her position as a woman in this context is still not equal to that of men (men are the expected norm on the forum and women/girls the exception). For both WomanCan and Wolverina, there were those who criticized their approaches and reports, suggesting that their ‘goals can
be reached without the use of IPEDs; that they ‘might want to have more children,’ and that their ‘diets are too strict.’ Yet, there were also those in favor of these women’s engagement in the community and provided support from their more privileged male positions. For example, a female member called out another male member on his misogyny by telling him to ‘let this woman present her course report’ and asking him rhetorically if he would ‘go into all the dudes’ doping threads too, and say man think about how you are affecting your children’s lives!’ The visibility of the heterosexism and normative femininity (cf., cultural manspreading, Henning & Andreasson, 2022) occurring in the community works here as a feminist push-back against and response to male privilege.

One problem with the anticipated and actual questioning of women is that women’s course reports and ongoing discussions about potential risks and harms of IPED use become intertwined with gendered preconceptions and ideas about what women should and should not do. This makes it hard for women to distinguish discouraging advice based on genuine harm reduction from misogyny. It also assumes that women all want the same things or have the same concerns related to IPED use, almost forcing them to reveal personal information to justify themselves. Women members are seemingly aware of this, as they tend to include information not requested of men so that they are taken seriously and will be granted some legitimacy when introducing themselves and their motives in this ethnopharmacological culture (Sverkersson, 2022; Sverkersson et al., 2020). Still, this is not always enough.

Another woman member named Lizzi introduced herself by explaining that she had visited an anti-ageing physician in Germany. This physician took blood samples and could see that she was ‘low on some hormones’ which was ‘natural for her age, though not optimal according to the doctor.’ The physician gave her a prescription for a testosterone gel (Testo) and Lizzi sought advice about whether this could be used to boost muscle growth and her performance at the gym. Lizzi was very explicit that she was not interested in doing a traditional IPED course but rather sought advice on what to expect from her prescription. Soon, however, the discussion focused on the potentially masculinizing effects of Testo on women (in general), including male members telling her ‘to have look at female bodybuilders to know what to expect’ and warning that she ‘does not want to look like a man’ and that ‘your boobs are gonna semi-disappear.’ Lizzi responded:

Now I believe that female bodybuilders run a little tougher stuff than low-dose Testo-gel. I’m looking for physiologically normal levels. That range can vary a lot, quite naturally in different women, but at the same time I’m not looking for broiler levels. I also don’t feel any need whatsoever to have a go on Anavar or anything else. If it’s not a good idea to increase the test dose a bit, it might as well be. But I am frankly surprised by some of the attitudes here. ‘Becoming a man’ requires strong hormone therapy over several years, where, in addition to androgens, you also need to block the effect of female sex hormones. And neither female bodybuilders nor male bodybuilders look like women or men in general. These are completely different body ideals. Which I, for the record, do not pursue. (Lizzi)

Discussions of masculinizing effects are valid, though in this case perhaps unreasonable in relation to what Lizzi was asking and pursuing. Nonetheless, this excerpt and section illustrates how women, when introducing themselves, do so in a self-defensive manner. They anticipate facing more and different social consequences than men when engaging in conversations, such as not being given the benefit of doubt on course plans and needing to be careful not to overstep gender norms/bounds when expressing motives and life situations. This means that they are constantly assessing risks not only in terms of drug use practices but also in terms of femininity and womanhood. Thus, both the anticipated and actual questioning marginalizes women’s use narratives, backdrops women’s experiences, and steers how – or even if – they introduce themselves, as well as potentially increases the risks of their use practices. Women’s IPED motives may vary, stretching from low dosages for anti-aging strategies or for ‘smaller’ gains in recreational sport/gym settings, to ambitions to compete in women’s fitness competitions. These diversities are largely lumped together into an imagery of the female bodybuilder (the gender outlaw) (Shilling & Bunsell, 2009), when women, their knowledge, and their motives are debated. The experiences of real women involved in the forum, with their own agency, are thus overshadowed by a subordinated and subcultural imagery of a flawed femininity, while the forum at the same time provides a (conditioned) space for female subjectivity.

Physical risks and the male live-action role player (LARP)

The amount of a substance used, particularly regarding AAS, is an important topic on various IPED forums. Dosing and related information for each substance is thoroughly discussed, often with a lot of focus on desired vs unexpected effects and side effects. Some side effects are welcome and valued, while others can be problematic and discussions may center on avoiding or correcting them (Andreasson & Henning, 2022a, 2022b). For women, dosing can be particularly important, as there can be little margin for inaccuracy when it comes to avoiding masculinizing side effects. Some women will accept some masculinization as part of using IPEDs, particularly AAS (Andreasson & Henning, 2022a), but others wish to avoid these changes. Ensuring that substances used are accurately labeled and the supplier is reliable is one way of minimizing these risks for women. When obtaining these substances from a pharmacy or through a doctor is not possible, many will turn to online pharmacies or to underground labs. Underground labs are those that are not licensed to sell compounds and ‘are improvised labs hidden in cellars or warehouses where raw materials, mostly originating from Asia, are processed into tablets and injectable depots’ (Ronde & Smit, 2020, p. 104).

A forum on MESO-Rx is dedicated to these labs and indicates it features ‘Lab test reports. Source reviews. Complaints. Risks. Scammers. Uncensored.’ (https://thinksteroids.com/community/forums/steroid-underground.45/). Here, MESO-Rx users can find information on labs that advertise on the site, including engaging directly with lab representatives. Underground labs will sometimes send samples of their
Various products to an independent lab to have the contents verified and then post the results to show their reliability. Those labs that refuse to do so when asked, or who return poor results, are often disregarded, and sometimes disparaged by forum users. The potential utility for women who use PEDs is great since they tend to use smaller quantities than men. These reports allow them to see how accurate the dosing from a particular underground lab is, according to the independent lab tests, and then avoid or adjust their use based on those findings. This also allows other members to comment or question the results, offering even more insight into sources and their willingness to address community concerns. In one thread, an underground lab posted their test results that showed several products that had a higher amount of active substance than advertised. One woman member, ConcernedWoman, highlighted a 25% overage in an 5 mg dose of an AAS product targeted to women.

I'm concerned about that overdosed lady var [Anavar]. Being 25% overdosed for an oral made specifically for women who need specific dosing is concerning. I'd rather see it 10% under than 25% over. Do you plan to correct your formulas now that you know the purity of your raws? (ConcernedWoman)

The lab responded, 'Lady Anavar is not overdosed. I think ~6mg per cap represents a good maximum deviation. You are going to have some variation when making oral capsules.' This response was noted as being factually incorrect based on the results provided, as well as defensive and dismissive of ConcernedWoman's queries by several members who were active on the thread. Deviator, a male member, noted that in this case such an overage could end up being substantially more than a woman might intend: ‘…If a female is pushing it over. Do you plan to correct your formulas now that you know the purity of your raws?’ (ConcernedWoman)

Following a further response from the lab indicating that they could remove some of the active ingredient and that it may result in an underdose, ConcernedWoman responded that an underdose would be preferable to an overdose for women:

...My suggestion is - at least with drugs that are made specifically for women, who have the possibility of having their voice irrevocably changed by taking a few mg too much of a substance, is to stop the overdosing. I repeat - 10% under dosed female products is MUCH preferred to 10% overdosed. More is not better for us. And to be clear - I very much want to see you succeed - we need a reliable, reasonably priced domestic source. I'm giving you these suggestions because I think you will be receptive to them. Overdosing for guys is one thing - some probably appreciate it. But for women, it can be the difference between attaining your goals and losing femininity that you can never get back. PCT doesn't fix our jacked up voice. (ConcernedWoman)

As ConcernedWoman highlighted in this exchange, women may have different criteria than men when choosing a supplier. Several men commented they would be happy with overdosed substances with the implication that women would similarly view this as a bonus. However, ConcernedWoman was focusing on the need for accuracy in dosing to avoid masculinizing side effects. Similarly to Wolverina on Flashback, ConcernedWoman was challenging the idea that men are experts and women's experiences and concerns do not matter.

In order to manage risks related to female physiology, women may also seek out firsthand experiences from other women who use PEDs and specifically AAS (Henning & Andreasson, 2021). As women's responses to AAS can differ significantly from men's, women will sometimes seek out advice for preventing or coping with female-specific side effects or seek motivation from women who have had similar experiences. This is similar to how men engage online to seek and share use information (Smith & Stewart, 2012; Tighe et al., 2017), but with a focus on finding women peers. The number of men active on the PED forums in this study was generally far greater than women. Women must then seek out other women, while men can assume that other men will engage with them. MESO-Rx has attempted to simplify this for women by setting up a forum for women only, meaning only women members can post or reply in the threads within, to give the women's community space to develop and allow them to interact uninterrupted by men (Andreasson & Henning, 2022a).

In 2021, a new thread was started by member Alarmbell in the women only forum warning women not to take advice from another prolific member who frequently posted in that forum. The reason for the alert was that the account was revealed to belong to a man, 'FYI everyone! Don't follow any of MissMuscle's advice on here! She's been proven to be a larp! The real person she's posing as has called her out. Please be cautious!' The revelation that a man had posed as a woman in the women's forums was surprising, but that the user had also given advice seemingly based on their own experiences of PED use as a woman was fairly shocking, leading to the accusation from Alarmbell that he was a live action role play or LARP enthusiast. A second member, Trustnoone, further elaborated: 'Very sad. We trusted her and to find out her real name is Mike….please spread the word to other forums girls…' Trustnoone's feelings of betrayal may be related to the fact that that MissMuscle had posted 184 times, primarily in women's forums and often at length, over four years. In that time, MissMuscle had become perceived as a helpful and trustworthy source of information. While the information may have been accurate or useful for women, that it was revealed to have been posted by a man immediately called it into question.

**Discussion**

The findings above illustrated how women narrate their PED use in relation to the gendering of drug cultures and communities in two different PED forums. Both men and women may encounter risks of harm in relation to their use (Andreasson & Henning, 2022b), though women seemingly face an added layer of difficulty due to the cultural context that is largely formed by and for men. To unravel the consequences of the gendering of the forums we focused on here, we return to Braidotti (2011) and her three levels of sexual difference. With this framework we can start to map how
women position themselves within online communities and engage in discussions on iPeD use. We can also engage in an analysis of their experiences and ways of dealing with potential risks of their use.

The results show how women continuously are adapting to the reality of being in a male-dominated context and trying to be taken seriously, while also dealing with gendered preconceptions and ideas about what women should and should not do. Research on online iPED forums has found that women can and do challenge these assumptions (Andreasson & Henning, 2022a) but this may increase risks of being interrogated and undermined by their peers. This highlights the first level of sexual difference, differences between men and women. Women who use iPEDs seem compelled to justify their choices and disclose personal information to gain legitimacy and avoid having their choices undercut by comments questioning their thinking or experiences, which men can mostly avoid. Consistent with other research (Henning & Andreasson, 2021), this dynamic is particularly evident in the interplay between men and women, where both men's spatial and social dominance (cultural manspreading, Henning & Andreasson, 2022) are visible. This becomes even more complex when a man is revealed to have posed as a woman, as this can undercut women's trust in their online peers' advice and potentially result in risky use practices. Developing our understanding of the predicaments of a s-is-science based ethnopharmacological culture, however, helps to refocus the debate on the relationship between men and women's iPED practices, which has been approached and understood via the masculine norm and heteronormative gaze by default. These developments can be interrupted by men's interjections, which can pull the focus away from women's bodies and shared experiences, making women less likely to engage online (Flower et al., 2014).

Moving on to the next level, differences between women are evident in the above cases in the variations in knowledge and experiences regarding iPEDs, though these can often be overshadowed by existing stereotypes of women and women who use iPEDs. The women in this study had a clear range of backgrounds and motivations. While all rooted in enhancement goals, these spanned from women with experience running courses of steroids for muscle building to an interest in maximizing the potential of a prescription testosterone gel. In contrast with the imagery of the iPED-fueled woman bodybuilder (McGrath & Chananie-Hill, 2009), diverse narratives on motivations, prerequisites for drug use engagement, and knowledge about courses and drug regimens emerge as clear lines of difference within this population of women. Such heterogeneity among men regarding motivations, backgrounds, and experience are well covered in iPED literature (Christiansen, 2020; Christiansen et al., 2017; Zahnow et al., 2018), yet women are still assumed to be homogenous to a large extent.

Finally, moving on to the third level of difference, differences within each woman, here we have only presented a snapshot of individual women in the forum. Personal choices and attitudes towards risks and what are deemed acceptable or desirable side effects of iPEDs, motives, and desires emerge and change over time. This diversity implies that individual approaches to iPEDs may change over time as bodies change and new possibilities arise, for example the use of Testo-gel. Men's trajectories to and from iPED use have been documented, considering individual shifts in motives and the resulting impact on use (Andreasson & Johansson, 2020). The full complexity of a subject-in-becoming is lacking in the data presented here and this requires further research.

Through virtual power structures, the online forums a (conditioned) space for women. The challenge for female community members lies in distinguishing the movement of intersecting power networks that both enable and hinder women by, among other things, sorting the advice based on genuine harm reduction or the female experience from advice or comments grounded in misogynistic discourse and rooted in the normative male body in relation to their offline bodies.

Limitations

Though the use of digital methods and online data offer insights into iPED communities and some of the gender dynamics within, there are limits to what we can learn from such research fields. For example, the ability to probe or follow up with participants is limited by an observational approach. It can also be difficult to understand the full context of forum members' lives, as we are quite limited in what information we have about any individual. Using clear search and inclusion criteria are necessary research practices, but also limit what data will be included in the analysis. In cases such as this, further research using a range of methods is required to better understand these communities and the experiences of women who use iPEDs.

Conclusion

Though Braidotti's levels of differences can be separated for analytical purposes and clarity, they are interconnected in complex ways. Nonetheless, through these levels some promising analytical tools have been developed and may help take further steps to center the female body and foreground women's iPEDs narratives – cultural manspreading (Henning & Andreasson, 2022), s-is-science, and ethnopharmacology (Sverkerson et al., 2020) – several of which we have drawn on in this article. However, as above, we understand that our work is limited in a number of ways and this represents only a start to our collective understanding. Indeed, to capture the complexity of women's iPED use and differences between and within women nuanced discussions that consider gender alongside age, race, and socio-economic status are needed. This has so far been absent in research on women and iPEDs. Intersectional feminism (Collins, 2000; Collins & Bilge, 2020) has been useful for understanding the complexity of stigma related to non-iPED substance use (Azhari & Gunn, 2021) and the gendered perceptions and online experiences of athletes, including speculation of iPED use (Litchfield et al., 2018). It is against this backdrop that we see a potential for revealing the changing nature of the narratives of women who use iPEDs and how these can also give insight into women's experiences. Such an approach also unlocks the opportunity for informed analyses in which women who use iPEDs can move beyond cultural
images of sensational and masculinized female bodybuilders, a construction that lacks any practical nuance.

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