

FEMALE VULNERABILITY AND SUSCEPTIBLE BRAINS: GENDERED DISCOURSES OF ADDICTION

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Abstract. Despite clear evidence that men use illicit drugs more than women, use them at higher levels and use them from an earlier age, female vulnerability has been a central theme of medical, public health, and popular discourse on drug use. Discourses of vulnerability and norms of responsibility for familial and social wellbeing combine to produce women's drug use as more unnatural and more deviant than men's use. This article draws on Campbell's notion of 'governing mentalities to highlight the way the figure of the vulnerable female drug user' is reproduced in contemporary US government discourse on addiction and drug use. It thus aims to contribute to the feminist project of deconstructing gendered discourse on drug use and addiction. The article begins by examining contemporary neuroscientific accounts of the brain as the site of addiction, highlighting the co-existence of generic and sex-differentiated accounts of addiction. It then discusses the recent US Surgeon General's report *Facing Addiction in America* (2016) along with "fact sheets" on drug use and gender produced by the US National Institute on Drug Abuse. It argues that the governing mentality that collapses sex and gender while emphasising female vulnerability obscures the multiple ways women experience drugs. The article also suggests that attention should be paid to the complex relationships between maleness and masculinity and drug use, without reiterating the history of foregrounding and universalising men's experiences.

INTRODUCTION: GENDERING DRUG USE

Until the 1980s there was little sustained academic interest in women who used drugs nor acknowledgment of gender differences in drug use.¹ Drug use was assumed to be a male activity, although the gender of the male drug user was unproblematised and unmarked. As well as being neglected in research, women drug users were also marginalised and stigmatised in policy and treatment. Women who did use drugs were regarded as highly deviant and extreme cases.² The body of femi-

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nist literature on women and drug use that developed during the 1980s and 1990s therefore emphasised the need to make women drug users visible in order to counter the prevailing “epistemology of ignorance” about their experiences of drugs.³

As Elizabeth Ettorre argued in 2004, however, a gender-sensitive perspective on drug use involves more than adding women to dominant approaches that focus on the pathology of the individual drug user.⁴ Rather, it requires addressing drug use as a social practice, shaped by powerful knowledges, cultural norms, and local conditions. Moreover, we should conceive of gender not as an individual variable but as a social process reinforced through everyday interactions, embedded in a structural form of inequality.⁵

From this perspective, discourses of addiction and drug use produce certain forms of psychoactive substance consumption as medico-legal problems. These problems take gendered, raced, and classed forms. Gendered discourses of risk play a key role in shaping the governance of drug use, as they promote female responsibility for the wellbeing of children and families and social reproduction more generally.⁶ “Discourse” here refers to historically specific forms of knowledge and practice that not only govern social life but produce the subjects and objects they seek to govern. Discursive practices are therefore inseparable from the operation of power: “discourse itself is both constituted by, and ensures the reproduction of, the social system, through forms of selection, exclusion and domination.”⁷

Despite clear evidence that men use illicit drugs more than women, use them at higher levels and use them from an earlier age, female vulnerability has been a central theme of medical, public health, and popular discourse on drug use.⁸ Women have been understood as biologically, socially, and morally vulnerable to the harms of substance use, and the blurred boundaries of these categories has acted to exacerbate the naturalisation of women as at risk from drugs.⁹ Discourses of vulnerability and norms of gendered responsibility for familial and social wellbeing combine to produce women’s drug use as more unnatural and more deviant than men’s use. As Nancy Campbell has observed, women who use drugs are constituted as “spectacular failures” in their violation of gender norms.¹⁰

As well as being at heightened risk of harm, women who use drugs are also understood as dangerous sources of harm and forces of social disorder. As Campbell puts it, “the female addict embodies an impulsive self who shirks her duties while giving free reign to her desires.”¹¹ The notion of embodiment highlights the way discursive processes and practices of government classify and constitute the addict’s body as deviant and disordered. The pregnant woman who smokes and drinks is a particularly vivid figure of spoiled femininity who attracts intense opprobrium due to the threat her consumption represents to the vulnerable and innocent fetus.¹² However,

intoxication and loss of control in women is censured independent of any evidence of direct harm to others.¹³

While the male subject of drug discourse is presented as the generic and default drug user, especially in relation to illicit drugs, men's higher rates of use are rarely interpreted as a form of vulnerability to harm. Instead, the notion of risk-taking is applied in a way that reflects an active/passive gender binary.¹⁴ While drug use is understood in dominant discourses as a negative outcome, the prominence of risk-taking as a causal factor enables male drug use to be located in the category of the heroic, or at least anti-heroic. As Featherstone has explained, heroic life is the realm of "extraordinary deeds," virtuosity, and the exercise of will, as opposed to the everyday realm of common-sense routines and the mundane forms of reproduction associated with women.¹⁵

Another characteristic of the gendered discourse on drug use which has acted to obscure the realities of women's lives is a slippage between the biological and social. Female biology is contrasted with an unmarked male norm and constructed as more unstable and more prone to damage (in a set of tropes focused on reproduction and reminiscent of Victorian medicine).¹⁶ "Women" is constituted as a taken for granted and undifferentiated category that is coterminous with female embodiment.¹⁷ The individuals in this category are understood as combining biological vulnerabilities with problems produced by their gender identity. Gender is explicitly addressed as belonging to a separate realm of "culture," but in some unspecified way is understood as dependent on the substrate of sex. In other words, the gendered discourse on drug use both relies on yet elides a distinction between sex and gender. In addition, it separates the concept of gender from a consideration of power structures and social conditions, instead understanding it as an attribute of female bodies.

This article aims to contribute to the feminist project of identifying and deconstructing gendered discourse on drug use. It draws on Nancy Campbell's notion of "governing mentalities" to highlight the way the figure of the "vulnerable female drug user" is reproduced in contemporary US government discourse on addiction and drug use.¹⁸ Addiction science is currently dominated by a generic vision of a common human susceptibility to the harmful effects of drugs, based on the existence of a universal neural reward system. However scientific and public health literature on drug use and addiction also relies on and reinforces a binary model of sex difference which informs the discursive practices and governing mentalities of drug use.

The article begins by examining contemporary neuroscientific accounts of "the brain" as the site of addiction, highlighting the co-existence of generic and sex-differentiated accounts of addiction. It then discusses the recent US Surgeon General's report *Facing Addiction in America* (2016)

along with “fact sheets” on drug use and gender produced by the US National Institute on Drug Abuse. It argues that the governing mentality that collapses sex and gender while emphasising female vulnerability obscures the multiple ways women experience drugs. The article also suggests that attention should be paid to the complex relationships between maleness and masculinity and drug use, without reiterating the history of foregrounding and universalising men’s experiences.

ADDICTED BRAINS

In the 21st century, addiction is being reconstituted as a primarily molecular process, in large part through the research and advocacy of NIDA scientists.¹⁹ Although neurochemical explanations of addiction remain partial and continue to face competition from other medical and non-medical approaches to substance use, the model of addiction as a “chronic relapsing brain disease” has become orthodox, authoritative and familiar.²⁰ Critical engagement with the brain disease model of addiction is necessary because of its capacity to shape the governing mentalities of drug use policy towards an increasingly individualistic and biomedical understanding of drug use as pathology.

While space precludes a full account of the genealogy of the brain disease model, it is relevant to note that its ascendance can be understood as a political as well as scientific achievement, within the context of what Scott Vrecko has termed “neuropolitics.” As Vrecko argues, facts about addiction and the brain emerged in the 1960s and 1970s as US politicians declared a war on drugs, and addiction neuroscience became a “well-funded, state-sponsored speciality.”²¹ More broadly, the brain disease model both reflects and reproduces a molecular “style of thought” which has shaped contemporary approaches to a wide range of social phenomena, creating not only novel explanations but new objects and relationships that require explanation.²² As discussed later, the differences between men and women are one such phenomenon.

Neuroscience locates addiction within the brain and identifies it as a brain disease, producing it as a fundamentally biological process. More specifically, it biomedicalises addiction, emphasizing molecular events and technoscientific expertise.²³ The brain disease model has circulated widely in public and popular discourse and has been taken up in policy debates about treatment and screening; regulation and availability of recreational and pharmaceutical drugs; and the effectiveness of criminal justice approaches to addiction.²⁴ It has also enabled discussions of autonomy and responsibility to be reframed in terms of the obligations of “biological citizens” to maximize their neural health through self regulation.²⁵

The explanatory narrative of the brain disease model describes the perversion of a natural and beneficial system through the incursion of a pow-

erful foreign agent. According to this narrative, the brain's reward system, which evolved in order to reinforce "survival relevant natural goals" such as searching for food, eating, and sex, is "hijacked" by addictive drugs and their artificially intense positive effects.²⁶ The brain adapts to the presence of a drug, and synapses and circuits are remodelled, further increasing the reinforcing effects of the drug. Because of these long-lasting neural changes the addict is regarded as existing in "a different state of being" where drugs are the highest motivational priority, and other goals and relationships are abandoned.²⁷

While the behavioural pharmacology that dominated addiction science in the mid-twentieth century emphasized the importance of the environment in modifying drug effects, contemporary neuroscience constitutes the actions of drugs as predictable and universal chemical processes. In addition, while pharmacology highlights the specific and varied properties of different substances, the brain disease model represents a shift to a generalizing approach in which a single generic process underlies addiction, no matter which "drug of abuse" is involved. Indeed, despite the reliance on the idea of natural versus unnatural rewards, the model has promoted the expansion of the category of addiction to incorporate behaviours such as gambling, sex, and the consumption of highly palatable food.²⁸ The intense rewards produced by these activities are postulated as affecting the brain in a similar way to psychoactive substances.

As well as reinforcing the category "drugs of abuse" as a meaningful biological as well as socio-legal entity, the neuroscientific account of addiction enacts a particular vision of the brain. The brain is stabilised as complex and plastic enough to explain variable human experiences such as addiction, but also straightforward and fixed enough to be reduced to simple explanatory models.²⁹ Of most relevance here, the human brain is also constituted as a singular, universal, disembodied, and somewhat abstract entity. That is, while genetic influences on vulnerability to addiction are incorporated into the model, variables such as sex, class and race are not: the brain as constituted in the brain disease model is fundamentally unmarked by difference apart from the dramatic contrast between normal and addicted.

This is perhaps most clearly seen in the paired images of PET scans which routinely accompany accounts of addiction as a brain disease.³⁰ The scans, placed side by side for contrast, represent not only types of brain but types of person: the addict and the non-addict. But all other contextual material is absent, including the body that houses and is attached to the brain, the relationships and experiences that make the categorization of addiction meaningful and significant, and the historic and economic structures that determine how addiction emerges and is addressed. Susceptibility to addiction is represented as a universal feature of human biology. As the World

Health Organization stated in its report on the neuroscience of substance use and dependence in 2004, the action of substances in the brain is part of “the common biological inheritance shared by all humans.”³¹

The theme of neural universality found in most accounts of addiction as brain disease, however, coexists with neuroscientific theories of gender that emphasise pervasive “hard-wired” differences between the male and female brain.³² The decade of the brain, declared by George H.W Bush in 1990, promoted basic neuroscientific research, advances in brain imaging, and explanations for social phenomena based on brain structure and functioning.³³ Indeed the neuroscientific style of thought that came to prominence in the 1990s produces new objects of study: not only the sexually dimorphic brain but gender as a consolidation of neurobehavioural effects.³⁴ As feminist scholars have observed, the contemporary neuroscience of sex differences has tended to support conventional gender norms and roles by linking neural organisation and molecular processes to preferences, skills, and social behaviours.³⁵ In recent years, neuroscientific research has turned to the addicted brain as another phenomenon that can be investigated and illuminated according to a sex binary.

In common with much of the research on “brain sex,” the sex-difference literature on addiction is characterised by strong assertions of male-female difference based on biology. Indeed, it is this difference which justifies the continued research effort on the topic of sex and addiction. For example, a 2014 article on sex differences in addiction recently published in *Experimental Neurology* concludes that “males and females differ in their magnitude of response to various properties of drugs of abuse. It is likely that the molecular neuroadaptations, which develop over the course of addiction, contribute to female increased sensitivity to drug-associated cues and stress that influence individual vulnerability to addiction and relapse.”³⁶ Another article, published in 2015 in *Pharmacology & Therapeutics*, focused on the emergence of sex differences in adolescence and claimed that “many aspects of brain structure and function are sexually dimorphic.”³⁷ Its abstract explains that sex/gender differences exist in “neurobiologic factors” mediating both reinforcement and aversiveness, as well as intrinsic factors (such as personality) and extrinsic factors (such as environment including peers and family).³⁸ More dramatically, a 2016 *Addiction Biology* article titled “Sex differences in impulsive and compulsive behaviors” begins with the statement that “Men and women differ in their responses to life events and adversities from a behavioral, biochemical and molecular point of view. Sex differences likely reflect an ancient memory-coding strategy that evolved millions of ago on Earth...”³⁹

These assertions of robust and evolutionary sexual dichotomy are in contrast, however, with the picture of subtle (and indeed sometimes non-existent), unreliable and/or multidirectional differences detailed in the

same texts. These studies are characterised by conditional and tentative statements and the inclusion of contradictory points. They interweave acknowledgements of commonality between the sexes with strong claims of distinctiveness. The overall effect is to stabilise sex difference as a fundamental feature of addiction. For example, one section of the 2014 *Experimental Neurology* article (cited above) begins with the point that the subjective effects of most drugs do not differ between men and women.⁴⁰ But the following section opens with the statement, “The observed sex differences in motivational and subjective effects of drugs of abuse are thought to be due to the activational effects of ovarian hormones.”⁴¹

Such “brain sex” accounts of addiction diverge in important ways from the brain disease model despite a common privileging of neurobiological explanatory narratives. In the former, gonadal hormones play a key role in forming and differentiating the brain prior to the development of addiction: addiction emerges in a brain that has already undergone a profound process of development and change. In the latter, while brain development is mentioned when discussing the vulnerability of adolescents to drug use, addiction tends to be presented as a process that takes place in an otherwise static and featureless space. Moreover, in contrast to neural accounts of addiction that ignore or minimise the role of social factors, sex differences discourse employs gender to support its account of biological divergence between the sexes. However, this is a thin notion of gender as a cultural role and individual attribute coterminous with sex. For example, the article on adolescent sex differences explained that it used the term “sex/gender” to indicate that “both a person’s biologic sex as well as her gender role influence the development of substance use or abuse.”⁴² The term “gender role” suggests an individual performance in which fundamental biological differences are expressed.⁴³ Employing “sex/gender” as an omnibus term allows the author to incorporate elements such as the influence of romantic partners, peers, and family into a model of sex differentiated substance abuse trajectories.

A highly developed example of the use of gender in sex differentiated addiction discourse is found in a 2012 *Biology of Sex Differences* article presenting “a new synthesis and hypothesis” about sex differences in the neural mechanisms of addiction. It presents two models of “downward spiral” into addiction, one based on “sensation-seeking” and the other based on “self-medication.”⁴⁴ The former model is more commonly found in men, the latter in women, and together the models produce a picture of addiction as fundamentally structured by sex. Sex differences in neural systems are presented as the cause of these dimorphic patterns of use and addiction, and the authors argue that “sex/gender specific combinations of drugs” will thus be required for effective treatment.⁴⁵ Consistent with the overall emphasis on biology, most of the article is devoted to a detailed re-

view of neurobiological research, highlighting evidence of sex differences in neurotransmission.

However, as the authors state in the abstract, the article also discusses historical, cultural and social “bases” for sex differences in addiction.⁴⁶ The historical evidence that is marshalled to support the model of sex difference in addiction includes the “gin craze” in 18th century Britain, the popularity of opiate patent medicines in 19th century America, and the prescription of tranquillisers post World War II (as well as the story of Helen and Zeus from the *Odyssey*).⁴⁷ This historical terrain which incorporates an array of eras, countries, and substances is interpreted through a diagnostic lens as evidence that self-medication underlies women’s drug use:

Overall, availability of drugs coupled with dissatisfying social conditions, stress, anxiety, and depression tends to exacerbate drug abuse and addiction in women. While such conditions can also increase drug use in men, it is our hypothesis that on the average this happens more often in women.⁴⁸

Therefore before the article even begins to outline the neural bases of sex difference, a gender binary of self-medication versus sensation seeking is established through a stereotypical and monolithic account of women’s behaviour throughout history. Further evidence of differences in male and female drug use patterns are organised and interpreted to support this binary. For example, it is claimed that male thrill seeking is connected to the use of heroin and other street opiates, while the female need to cope with feelings and stress leads to prescription opiates, barbiturates, sedatives and amphetamines.⁴⁹

This account of two sex-differentiated pathways to addiction reiterates female vulnerability through the model of drug use as a response to pain, stress and victimisation. In addition, the “downward spiral” from use to addiction is truncated in women because they spend less time at the stage of positive reinforcement and euphoria than men.⁵⁰ This account elides the experiences of women as agentic risk takers and seekers of pleasure. Moreover, it obscures male experiences of pain, stress, and victimisation, as well as the operation of masculinity as a form of vulnerability in some contexts. While the model emphasises and describes neurobiological processes in detail, it depends on pre-existing and taken for granted categories of men and women whose attributes and behaviour are analysed through gender norms.

GOVERNING ADDICTION AND GENDER IN THE TWENTY-FIRST CENTURY

This final section of the article will examine the way the scientific knowledge about addiction and sex difference is taken up in public policy and incorporated into dominant governing mentalities about the risks and harms of drug use.

The 2016 Surgeon General's report on alcohol and drug use, *Facing Addiction in America*, provides insights into this process.⁵¹ Reviews have lauded the report as a landmark document in its reliance on scientific research and its acknowledgement that addiction is a brain disease rather than moral failing.⁵² The report explicitly adopts and endorses what it calls a "public health approach" to the problem of drugs, seeking to "improve the health and safety of the population by addressing underlying social, environmental, and economic determinants of substance misuse and its consequences."⁵³ However, the first substantive chapter of the report is devoted to "the neurobiology of substance use, misuse and addiction," suggesting that it is in fact generic biological processes occurring at the molecular level that are the ultimate underlying base of the problem.

Facing Addiction evinces an overall low level of interest in women and in gender as an element of drug use. In a report of seven chapters and close to 300 pages, women are mentioned just over 30 times, with the large majority of these mentions being brief references to sex specific risks such as breast cancer, differences in rates of drug use between men and women, differential classifications for levels of drinking, targeted treatments for pregnant women, or the inclusion of women in lists of "special populations." Gender, defined in the glossary as "the social, cultural or community designations of masculinity and femininity," is mentioned much less frequently than women, and despite the definition is referred to mainly as a singular demographic variable.⁵⁴

In the chapter on neurobiology there is a one paragraph section titled "differences based on sex." This paragraph begins with a statement that suggests male rather than female vulnerability as it notes the higher rates of substance use disorders among men.⁵⁵ However, despite the title of the section, this vulnerability is attributed to gender rather than sex, and therefore presented as malleable and influenced by historical change:

Some groups of people are also more vulnerable to substance misuse and substance use disorders. For example, men tend to drink more than women and they are at higher risk for alcohol use disorder, although the gender differences in alcohol use are declining.⁵⁶

After this, the paragraph shifts to the biological and reasserts female vulnerability, noting that women progress from initial substance use to disorder at a faster rate and exhibit greater withdrawal symptoms. The sex/gender distinction is mobilised to constitute women's vulnerability as biological and therefore unalterable and essential, while female resilience is constructed as cultural and therefore amenable to change. This understanding of female vulnerability draws on and echoes the neuroscientific literature on addiction and sex difference.

It is apparent in the *Facing Addiction* report that particular phenomena

or features related to drug use are able to be constituted as either socio-cultural or biological (or both) depending on the context. For example, the section of the neuroscience chapter devoted to the topic of adolescence identifies the risk-taking that promotes drug use as neurological in origin, linked to the pre-frontal cortex and its development.⁵⁷ But the report interprets gendered relationships to risk as components of cultural roles which have undergone historical change in some contexts, while at other times it presents them as signs of neural difference.

A fact sheet on “sex and gender differences in substance use” available on the NIDA website reveals a similar tendency to emphasise the special vulnerability of women while obscuring the impact of masculinity on drug-related harms.⁵⁸ It commences with definitions that locate difference as the structuring logic of sex and gender: sex is “differences based on biology” and gender is “differences based on culturally defined roles for men and women.” Despite beginning with a basic distinction between sex and gender, the fact sheet does not use these terms again (except when mentioning sex hormones), instead simply referring to “women” as the relevant subject category. In addition, although the heading of the sheet is sex and gender differences, the overall topic category is “substance use in women.” Thus the difference in question is the difference of women from men, or as feminist philosophers would suggest, their deviation from a phallogocentric norm.⁵⁹

Therefore it is not surprising that according to the fact sheet the “unique issues” faced by women in relation to substance are linked to so-called “special issues” such as hormones, menstruation, fertility, pregnancy, breastfeeding, and menopause.⁶⁰ These reproductive experiences impact on women’s “struggles” with drug use. It is not mentioned that according to US data drug use is “dramatically lower in pregnant than non-pregnant humans” and remains lower among mothers than women without children.⁶¹ This is not to say that motherhood does not interact with women’s relationship to drug use and other forms of consumption, but the fact sheet presents a state which is associated with low rates of substance use simply as a site of vulnerability to drugs.

Next, the fact sheet outlines “unique” reasons women turn to drugs, including weight control, coping with pain, coping with exhaustion, and self-medication of mental illness. This conforms to the female “self-medication” downward spiral model of addiction discussed in the previous section.⁶² The fact sheet communicates the sense of an over-determined confluence of risk emerging from a general weakness and propensity to pathology, again without any mention of sex and/or gender as a source of possible resilience or protection for women. In addition, the reiteration of “uniqueness” as a characteristic of these issues constructs men’s drug use as unaffected by supposedly feminine experiences such as pain and illness,

reinforcing the idea of a sexual dichotomy.

The fact sheet then lists a series of bullet points summarising what “science” has “found” about sex differences and drug use, with a continued emphasis on women’s heightened risk and their deviance from an unmarked male norm. The list moves from what it presents as physiological effects to the consequences of gender norms and relations of power without referring back to the sex/gender distinction introduced at the start of the fact sheet. In the first half of the list are these points: “women can respond to substances differently...they may have more drug cravings and may be more likely to relapse after treatment”; “sex hormones can make women more sensitive than men to the effects of some drugs”; “women who use drugs may also experience more physical effects on their heart and their blood vessels”; and “brain changes in women who use drugs can be different from those in men.”⁶³ The final point does not specify the nature of the differences and whether they represent an increased or decreased risk of harm, but in the context of vulnerability produced by the preceding points, neural difference is readily interpreted as a sign of heightened disorder. It should also be noted that the point about craving and treatment relapse implies that it is women’s inability to resist craving that results in relapse, ignoring the well-documented lack of treatment approaches designed for women.⁶⁴

Towards the end of the list are two points which move from individual biology to the terrain of gender relations (without this shift being signalled): “women who are victims of domestic violence are at increased risk of substance use,” and “divorce, loss of child custody or the death of a partner or child can trigger women’s substance use or other mental health disorders.”⁶⁵ While it is crucial to recognise the vulnerability of women to domestic violence, it seems remarkable to present this as an individual risk factor excluding any mention of male perpetrators and the structures of gender power which produce and normalise such violence. The focus on women’s risk here has the effect of occluding the harm resulting from men’s gendered behaviour. Similarly, the effects of divorce and loss on women can be understood as determined by social and economic structures and norms rather than being interpreted as individual risk factors. The understanding of gender as a matter of “cultural roles” rather than a hierarchical and regulatory social structure also has the effect of individualising risk.⁶⁶

CONCLUSION

The addicted brain has become a familiar and well-established entity in scientific and popular accounts of substance use, linked to the model of addiction as a chronic and recalcitrant brain disease. One of the effects of the brain disease model is the production of a generic vision of addiction in which a universal process of neuroadaptation underlies all expressions of the disorder. In contrast to the male and female brains constructed in flour-

ishing field of neuroscientific sex difference research, the addicted brain is presented as generically human in its susceptibility to drugs rather than marked by gender.

However, the long established discourse of women's biological and social vulnerability to the harms of drug use is now interacting with neural accounts of addiction, for example in recent US government publications such as the Surgeon General's report on addiction. The models of sex differentiated addicted brains constructed in recent neuroscientific literature emphasise biology as the basis for differences in male and female experiences of drug use but nevertheless rely on pre-existing gender norms to explain and interpret these patterns. These norms promote the construction of women as prone to disorder and vulnerable to harm on the basis of deviation from an unmarked male standard. This model of female vulnerability continues to shape the governing mentalities of drug use despite neuroscientific recognition of the complexity of addiction and continued evidence of the harms experienced by men.

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